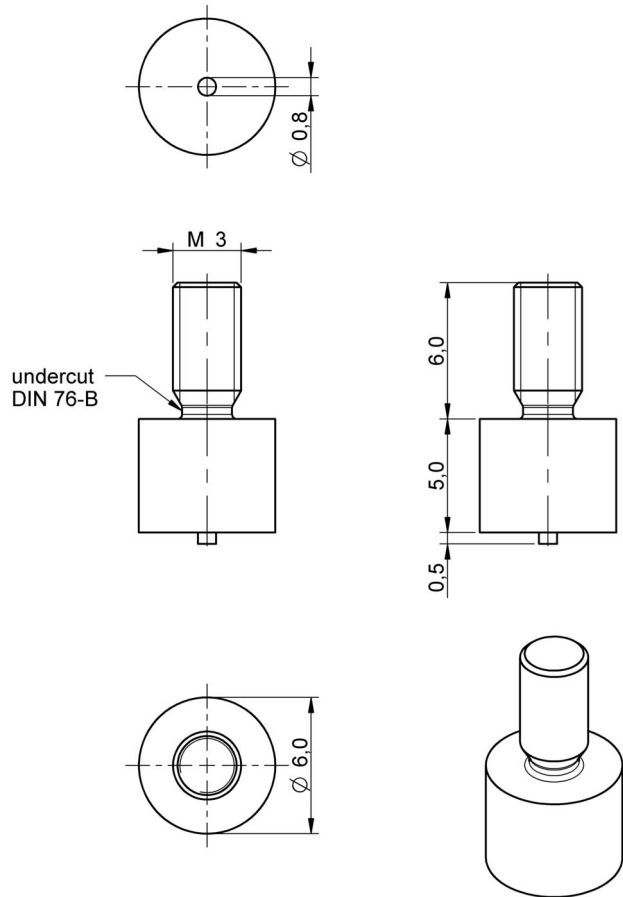
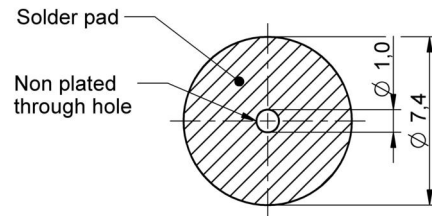


A Dimensions: [mm]



Scale - 3:1

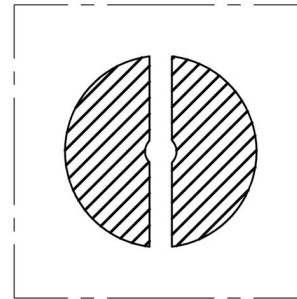
B Recommended land pattern: [mm]



Scale - 3:1

C Stencil suggestion:

Stencil Example:



Scale - 3:1



D Properties:

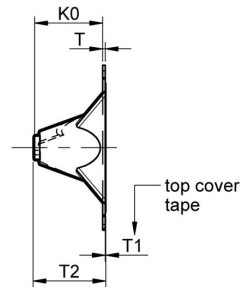
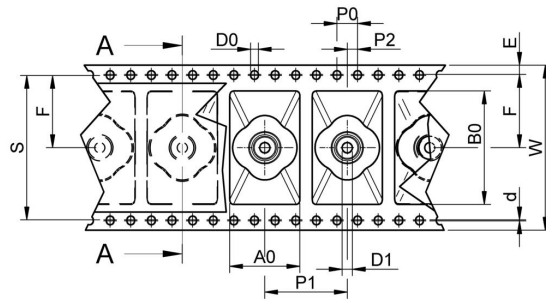
Properties	Value
Surface	Tin plated
Material	11SMnPb30
Thread	M3
Tightening torque	0.5 Nm
Solder Cream Thickness	150 µm
Packaging	Reel

E General information:

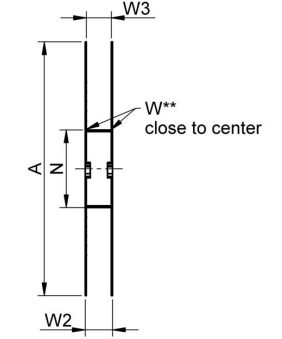
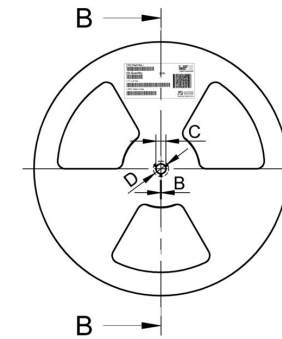
Technical Tolerances according to DIN ISO 2768m

In tape & reel packaging a cap is fixed to the product to realize automatic assembly

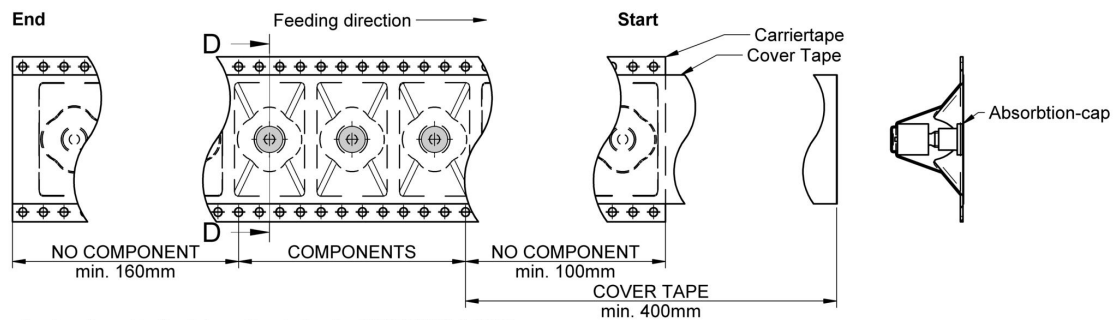
				Projection	DESCRIPTION WA-SMSE SMD Steel Spacer, M3 Thread External
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	Order.- No. 9771050360R
1.0	2013-12-13	SSt	SKI		COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK
REV	DATE	BY	CHECKED		SIZE A4



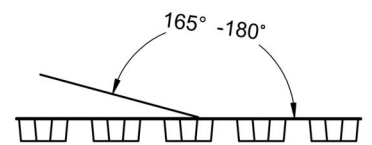
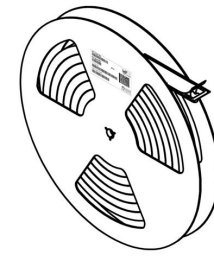
	A0	B0	W	P1	T	T1	T2	K0	D0	d	D1	E	S	F	P0	P2	Tape	VPE / packaging unit	
tolerance	typ.	typ.	±0,3	±0,1	max.	max.	ref.	typ.	+0,1	±0,05	min.	±0,1	±0,1	±0,1	±0,1	±0,1		pcs.	
size	9771050360	13,60	22,00	32,00	24,00	1,00	0,10	14,70	14,20	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	300
	9771060360	13,60	22,00	32,00	24,00	1,00	0,10	14,70	14,20	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	300
	9771070360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771080360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771090360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771100360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771110360	13,60	22,00	32,00	24,00	1,00	0,10	20,20	19,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	180
	9771120360	13,60	22,00	32,00	24,00	1,00	0,10	20,20	19,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	180
	9771130360	13,60	22,00	32,00	24,00	1,00	0,10	23,20	22,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	150
	9771140360	13,60	22,00	32,00	24,00	1,00	0,10	23,20	22,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	150
9771150360	13,60	22,00	32,00	24,00	1,00	0,10	23,20	22,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	150	



	A	B	C	D	N	W1	W2	W3	W3
tolerance	± 2,0	min.	± 0,8	min.	± 2,0	+ 2	max.	min.	max.
Tape width	32 mm	330,00	1,50	13,00	20,20	80,00	32,40	38,40	31,90 35,40



Packaging is referred to the international standard IEC 60286-3:2007



		Pull-of force
Tape width	32 mm	0,1 N - 1,3 N

1.0	2013-12-13	SSt	SKI	
REV	DATE	BY	CHECKED	

Projection

Würth Elektronik eiSos GmbH & Co. KG
EMC & Inductive Solutions
Max-Eyth-Str. 1
74638 Waldenburg
Germany
Tel. +49 (0) 79 42 945 - 0
www.we-online.com
eiSos@we-online.com

DESCRIPTION

WA-SMSE SMD Steel Spacer, M3 Thread External

Order.- No. **9771050360R**

COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK

SIZE A4

This electronic component has been designed and developed for usage in general electronic equipment only. This product is not authorized for use in equipment where a higher safety standard and reliability standard is especially required or where a failure of the product is reasonably expected to cause severe personal injury or death, unless the parties have executed an agreement specifically governing such use. Moreover Würth Elektronik eiSos GmbH & Co KG products are neither designed nor intended for use in areas such as military, aerospace, aviation, nuclear control, submarine, transportation (automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network etc.. Würth Elektronik eiSos GmbH & Co KG must be informed about the intent of such usage before the design-in stage. In addition, sufficient reliability evaluation checks for safety must be performed on every electronic component which is used in electrical circuits that require high safety and reliability functions or performance.

H Soldering Specifications:



H1: Classification Reflow Profile for SMT components:



H2: Classification Reflow Profiles

Profile Feature	Pb-Free Assembly
Preheat - Temperature Min (T_{smin}) - Temperature Max (T_{smax}) - Time (t_s) from (T_{smin} to T_{smax})	150°C 200°C 60-120 seconds
Ramp-up rate (T_L to T_P)	3°C/ second max.
Liquidous temperature (T_L) Time (t_L) maintained above T_L	217°C 60-150 seconds
Peak package body temperature (T_P)	See Table H3
Time within 5°C of actual peak temperature (t_p)	20-30 seconds
Ramp-down rate (T_P to T_L)	6°C/ second max.
Time 25°C to peak temperature	8 minutes max.

refer to IPC/JEDEC J-STD-020D

H3: Package Classification Reflow Temperature

	Package Thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
PB-Free Assembly	< 1.6 mm	260°C	260°C	260°C
PB-Free Assembly	1.6 - 2.5 mm	260°C	250°C	245°C
PB-Free Assembly	≥ 2.5 mm	250°C	245°C	245°C

refer to IPC/JEDEC J-STD-020D

				Projection 	DESCRIPTION
					WA-SMSE SMD Steel Spacer, M3 Thread External
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	Order.- No. 9771050360R
1.0	2013-12-13	SSt	SKI		COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK
REV	DATE	BY	CHECKED		SIZE A4

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I Cautions and Warnings:

The following conditions apply to all goods within the product series of **WA-SMSE** of Würth Elektronik eiSos GmbH & Co. KG:

General:

All recommendations according to the general technical specifications of the data-sheet have to be complied with.

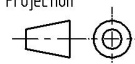

The responsibility for the applicability of customer specific products and use in a particular customer design is always within the authority of the customer. All technical specifications for standard products do also apply for customer specific products.

Product Specific:

Follow all instructions in the datasheet, especially:

- The solder profile has to be complied with according to the technical reflow soldering specification, otherwise no warranty will be sustained. Surface discoloration due to reflow processing is permitted.
- Wave soldering is not applicable. Reflow soldering is recommended.
- All products shall be used before the end of the period of 12 months based on the product date-code, if not a 100% solderability can't be ensured.
- The maximum permissible torques must be complied with to prevent mechanical destruction of the elements and PCB.



				Projection 	DESCRIPTION
					WA-SMSE SMD Steel Spacer, M3 Thread External
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	Order.- No. 9771050360R
1.0	2013-12-13	SSt	SKI		
REV	DATE	BY	CHECKED		SIZE A4

J Important Notes:

The following conditions apply to all goods within the product range of Würth Elektronik eiSos GmbH & Co. KG:



1. General Customer Responsibility

Some goods within the product range of Würth Elektronik eiSos GmbH & Co. KG contain statements regarding general suitability for certain application areas. These statements about suitability are based on our knowledge and experience of typical requirements concerning the areas, serve as general guidance and cannot be estimated as binding statements about the suitability for a customer application. The responsibility for the applicability and use in a particular customer design is always solely within the authority of the customer. Due to this fact it is up to the customer to evaluate, where appropriate to investigate and decide whether the device with the specific product characteristics described in the product specification is valid and suitable for the respective customer application or not.

2. Customer Responsibility related to Specific, in particular Safety-Relevant Applications

It has to be clearly pointed out that the possibility of a malfunction of electronic components or failure before the end of the usual lifetime cannot be completely eliminated in the current state of the art, even if the products are operated within the range of the specifications.

In certain customer applications requiring a very high level of safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health it must be ensured by most advanced technological aid of suitable design of the customer application that no injury or damage is caused to third parties in the event of malfunction or failure of an electronic component.

Therefore, customer is cautioned to verify that data sheets are current before placing orders. The current data sheets can be downloaded at www.we-online.com.

3. Best Care and Attention

Any product-specific notes, cautions and warnings must be strictly observed. Any disregard will result in the loss of warranty.

4. Customer Support for Product Specifications

Some products within the product range may contain substances which are subject to restrictions in certain jurisdictions in order to serve specific technical requirements. Necessary information is available on request. In this case the field sales engineer or the internal sales person in charge should be contacted who will be happy to support in this matter.

5. Product R&D

Due to constant product improvement product specifications may change from time to time. As a standard reporting procedure of the Product Change Notification (PCN) according to the JEDEC-Standard inform about minor and major changes. In case of further queries regarding the PCN, the field sales engineer or the internal sales person in charge should be contacted. The basic responsibility of the customer as per Section 1 and 2 remains unaffected.

6. Product Life Cycle

Due to technical progress and economical evaluation we also reserve the right to discontinue production and delivery of products. As a standard reporting procedure of the Product Termination Notification (PTN) according to the JEDEC-Standard we will inform at an early stage about inevitable product discontinuance. According to this we cannot guarantee that all products within our product range will always be available. Therefore it needs to be verified with the field sales engineer or the internal sales person in charge about the current product availability expectancy before or when the product for application design-in disposal is considered. The approach named above does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

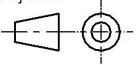

7. Property Rights

All the rights for contractual products produced by Würth Elektronik eiSos GmbH & Co. KG on the basis of ideas, development contracts as well as models or templates that are subject to copyright, patent or commercial protection supplied to the customer will remain with Würth Elektronik eiSos GmbH & Co. KG.

Würth Elektronik eiSos GmbH & Co. KG does not warrant or represent that any license, either expressed or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right relating to any combination, application, or process in which Würth Elektronik eiSos GmbH & Co. KG components or services are used.

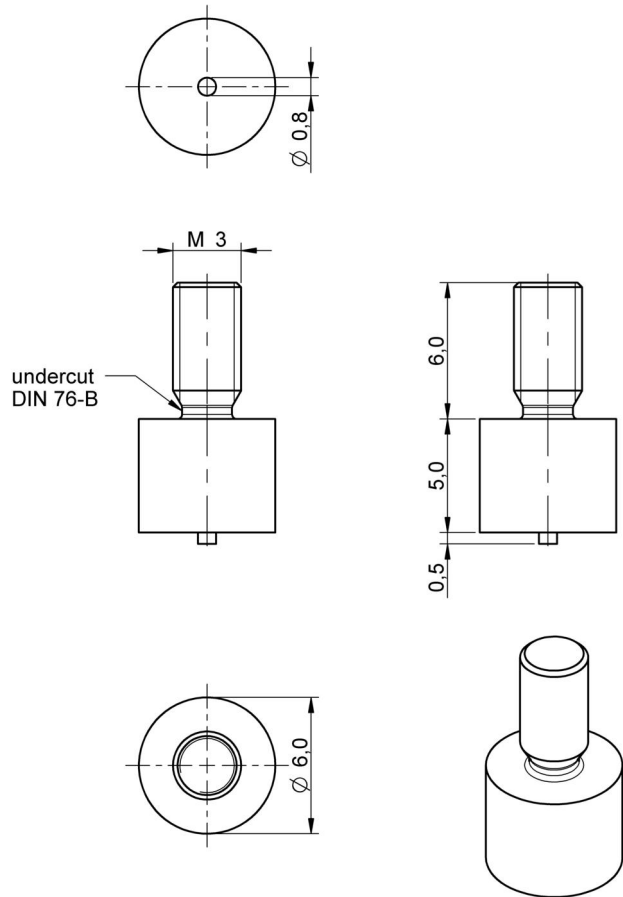
8. General Terms and Conditions

Unless otherwise agreed in individual contracts, all orders are subject to the current version of the "General Terms and Conditions of Würth Elektronik eiSos Group", last version available at www.we-online.com.

				Projection 		DESCRIPTION
						WA-SMSE SMD Steel Spacer, M3 Thread External
						Order.- No. 9771050360R
						
						SIZE A4
1.0	2013-12-13	SSt	SKI			
REV	DATE	BY	CHECKED			
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com		

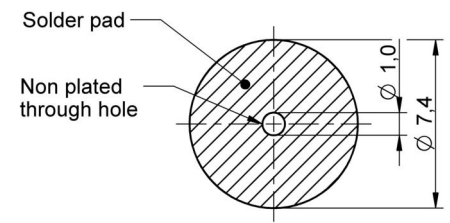


A Dimensions: [mm]



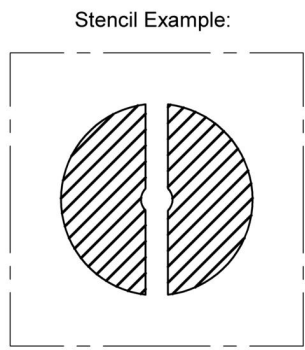
Scale - 3:1

B Recommended land pattern: [mm]



Scale - 3:1

C Stencil suggestion:



Scale - 3:1

D Properties:

Properties	Value
Surface	Tin plated
Material	11SMnPb30
Thread	M3
Tightening torque	0.5 Nm
Solder Cream Thickness	150 µm
Packaging	Reel

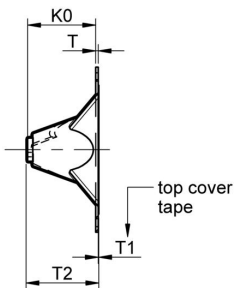
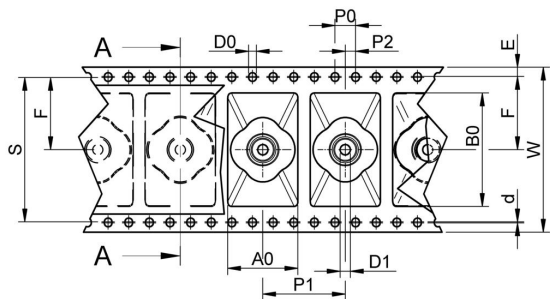
E General information:

Technical Tolerances according to DIN ISO 2768m

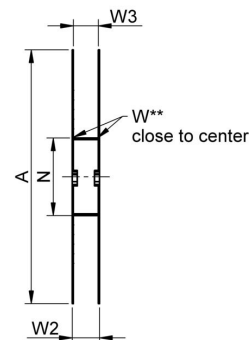
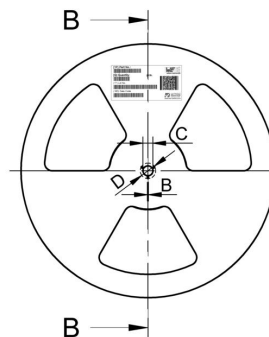
In tape & reel packaging a cap is fixed to the product to realize automatic assembly

				Projection	DESCRIPTION WA-SMSE SMD Steel Spacer, M3 Thread External
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	Order.- No. 9771050360R
1.0	2013-12-13	SSt	SKI		COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK
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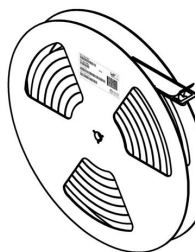
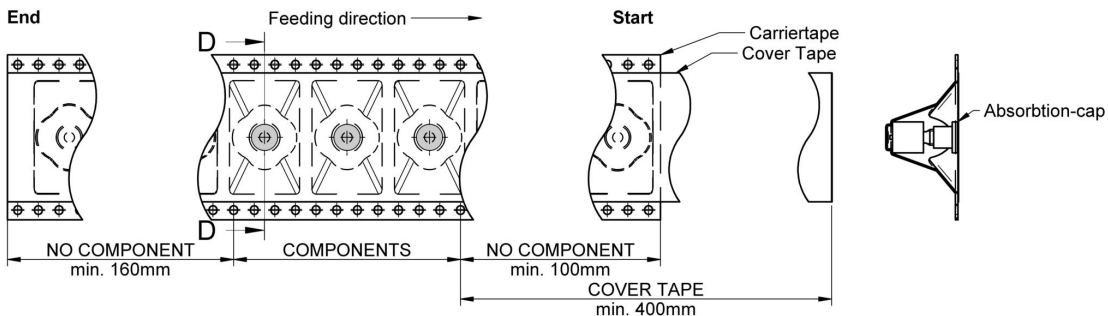
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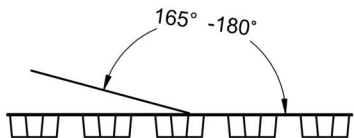
	A0	B0	W	P1	T	T1	T2	K0	D0	d	D1	E	S	F	P0	P2	Tape	VPE / packaging unit	
tolerance	typ.	typ.	±0,3	±0,1	max.	max.	ref.	typ.	+0,1	±0,05	min.	±0,1	±0,1	±0,1	±0,1	±0,1		pcs.	
size	9771050360	13,60	22,00	32,00	24,00	1,00	0,10	14,70	14,20	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	300
	9771060360	13,60	22,00	32,00	24,00	1,00	0,10	14,70	14,20	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	300
	9771070360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771080360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771090360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771100360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771110360	13,60	22,00	32,00	24,00	1,00	0,10	20,20	19,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	180
	9771120360	13,60	22,00	32,00	24,00	1,00	0,10	20,20	19,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	180
	9771130360	13,60	22,00	32,00	24,00	1,00	0,10	23,20	22,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	150
	9771140360	13,60	22,00	32,00	24,00	1,00	0,10	23,20	22,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	150
	9771150360	13,60	22,00	32,00	24,00	1,00	0,10	23,20	22,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	150



	A	B	C	D	N	W1	W2	W3	W3	
tolerance	± 2,0	min.	± 0,8	min.	± 2,0	+ 2	max.	min.	max.	
Tape width	32 mm	330,00	1,50	13,00	20,20	80,00	32,40	38,40	31,90	35,40



Packaging is referred to the international standard IEC 60286-3:2007



	Pull-of force
Tape width	32 mm
	0,1 N - 1,3 N

REV	DATE	BY	CHECKED
1.0	2013-12-13	SSt	SKI

Projection

Würth Elektronik eiSos GmbH & Co. KG
EMC & Inductive Solutions
Max-Eyth-Str. 1
74638 Waldenburg
Germany
Tel. +49 (0) 79 42 945 - 0
www.we-online.com
eiSos@we-online.com

DESCRIPTION

WA-SMSE SMD Steel Spacer, M3 Thread External

Order.- No.

9771050360R

COMPLIANT
RoHS&REACH
WÜRTH ELEKTRONIK

SIZE
A4

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H Soldering Specifications:



H1: Classification Reflow Profile for SMT components:



H2: Classification Reflow Profiles

Profile Feature	Pb-Free Assembly
Preheat - Temperature Min (T_{smin}) - Temperature Max (T_{smax}) - Time (t_s) from (T_{smin} to T_{smax})	150°C 200°C 60-120 seconds
Ramp-up rate (T_L to T_P)	3°C/ second max.
Liquidous temperature (T_L) Time (t_L) maintained above T_L	217°C 60-150 seconds
Peak package body temperature (T_P)	See Table H3
Time within 5°C of actual peak temperature (t_p)	20-30 seconds
Ramp-down rate (T_P to T_L)	6°C/ second max.
Time 25°C to peak temperature	8 minutes max.

refer to IPC/JEDEC J-STD-020D

H3: Package Classification Reflow Temperature

	Package Thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
PB-Free Assembly	< 1.6 mm	260°C	260°C	260°C
PB-Free Assembly	1.6 - 2.5 mm	260°C	250°C	245°C
PB-Free Assembly	≥ 2.5 mm	250°C	245°C	245°C

refer to IPC/JEDEC J-STD-020D

				Projection 	DESCRIPTION WA-SMSE SMD Steel Spacer, M3 Thread External
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	
1.0	2013-12-13	SSt	SKI		Order.- No. 9771050360R
REV	DATE	BY	CHECKED		COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK
					SIZE A4

This electronic component has been designed and developed for usage in general electronic equipment only. This product is not authorized for use in equipment where a higher safety standard and reliability standard is especially required or where a failure of the product is reasonably expected to cause severe personal injury or death, unless the parties have executed an agreement specifically governing such use. Moreover Würth Elektronik eiSos GmbH & Co KG products are neither designed nor intended for use in areas such as military, aerospace, aviation, nuclear control, submarine, transportation (automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network etc.. Würth Elektronik eiSos GmbH & Co KG must be informed about the intent of such usage before the design-in stage. In addition, sufficient reliability evaluation checks for safety must be performed on every electronic component which is used in electrical circuits that require high safety and reliability functions or performance.

I Cautions and Warnings:

The following conditions apply to all goods within the product series of **WA-SMSE** of Würth Elektronik eiSos GmbH & Co. KG:

General:

All recommendations according to the general technical specifications of the data-sheet have to be complied with.

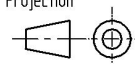

The responsibility for the applicability of customer specific products and use in a particular customer design is always within the authority of the customer. All technical specifications for standard products do also apply for customer specific products.

Product Specific:

Follow all instructions in the datasheet, especially:

- The solder profile has to be complied with according to the technical reflow soldering specification, otherwise no warranty will be sustained. Surface discoloration due to reflow processing is permitted.
- Wave soldering is not applicable. Reflow soldering is recommended.
- All products shall be used before the end of the period of 12 months based on the product date-code, if not a 100% solderability can't be ensured.
- The maximum permissible torques must be complied with to prevent mechanical destruction of the elements and PCB.



				Projection 	DESCRIPTION
					WA-SMSE SMD Steel Spacer, M3 Thread External
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	Order.- No. 9771050360R
1.0	2013-12-13	SSt	SKI		
REV	DATE	BY	CHECKED		SIZE A4

J Important Notes:

The following conditions apply to all goods within the product range of Würth Elektronik eiSos GmbH & Co. KG:

1. General Customer Responsibility

Some goods within the product range of Würth Elektronik eiSos GmbH & Co. KG contain statements regarding general suitability for certain application areas. These statements about suitability are based on our knowledge and experience of typical requirements concerning the areas, serve as general guidance and cannot be estimated as binding statements about the suitability for a customer application. The responsibility for the applicability and use in a particular customer design is always solely within the authority of the customer. Due to this fact it is up to the customer to evaluate, where appropriate to investigate and decide whether the device with the specific product characteristics described in the product specification is valid and suitable for the respective customer application or not.

2. Customer Responsibility related to Specific, in particular Safety-Relevant Applications

It has to be clearly pointed out that the possibility of a malfunction of electronic components or failure before the end of the usual lifetime cannot be completely eliminated in the current state of the art, even if the products are operated within the range of the specifications.

In certain customer applications requiring a very high level of safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health it must be ensured by most advanced technological aid of suitable design of the customer application that no injury or damage is caused to third parties in the event of malfunction or failure of an electronic component.

Therefore, customer is cautioned to verify that data sheets are current before placing orders. The current data sheets can be downloaded at www.we-online.com.

3. Best Care and Attention

Any product-specific notes, cautions and warnings must be strictly observed. Any disregard will result in the loss of warranty.

4. Customer Support for Product Specifications

Some products within the product range may contain substances which are subject to restrictions in certain jurisdictions in order to serve specific technical requirements. Necessary information is available on request. In this case the field sales engineer or the internal sales person in charge should be contacted who will be happy to support in this matter.

5. Product R&D

Due to constant product improvement product specifications may change from time to time. As a standard reporting procedure of the Product Change Notification (PCN) according to the JEDEC-Standard inform about minor and major changes. In case of further queries regarding the PCN, the field sales engineer or the internal sales person in charge should be contacted. The basic responsibility of the customer as per Section 1 and 2 remains unaffected.



6. Product Life Cycle

Due to technical progress and economical evaluation we also reserve the right to discontinue production and delivery of products. As a standard reporting procedure of the Product Termination Notification (PTN) according to the JEDEC-Standard we will inform at an early stage about inevitable product discontinuance. According to this we cannot guarantee that all products within our product range will always be available. Therefore it needs to be verified with the field sales engineer or the internal sales person in charge about the current product availability expectancy before or when the product for application design-in disposal is considered. The approach named above does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

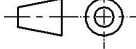

7. Property Rights

All the rights for contractual products produced by Würth Elektronik eiSos GmbH & Co. KG on the basis of ideas, development contracts as well as models or templates that are subject to copyright, patent or commercial protection supplied to the customer will remain with Würth Elektronik eiSos GmbH & Co. KG.

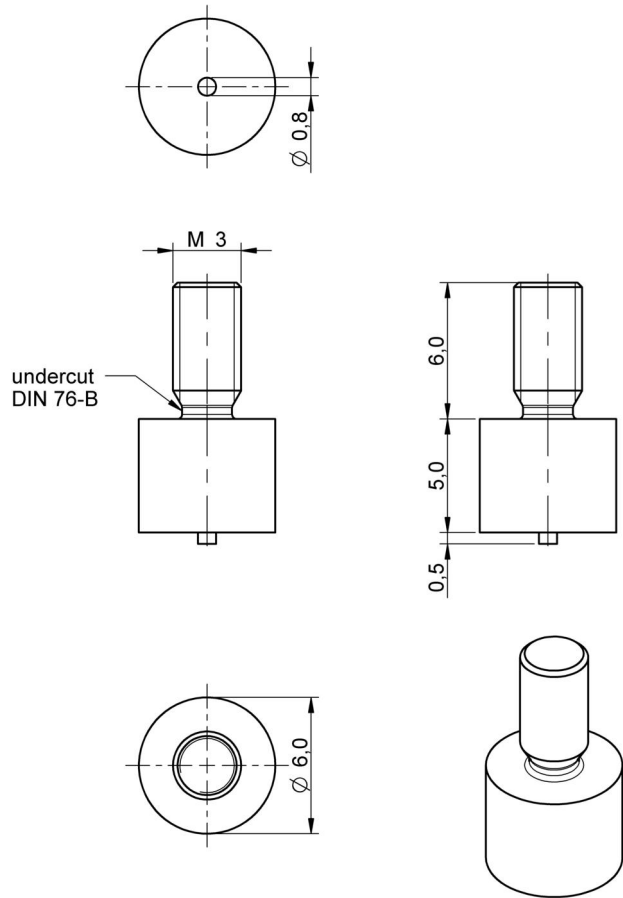
Würth Elektronik eiSos GmbH & Co. KG does not warrant or represent that any license, either expressed or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right relating to any combination, application, or process in which Würth Elektronik eiSos GmbH & Co. KG components or services are used.

8. General Terms and Conditions

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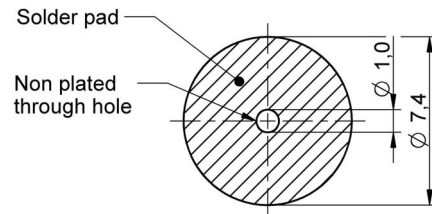
				Projection 	DESCRIPTION
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	WA-SMSE SMD Steel Spacer, M3 Thread External
					Order.- No. 
1.0	2013-12-13	SSt	SKI		9771050360R SIZE A4
REV	DATE	BY	CHECKED		

A Dimensions: [mm]



Scale - 3:1

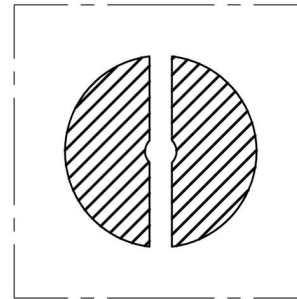
B Recommended land pattern: [mm]



Scale - 3:1

C Stencil suggestion:

Stencil Example:



Scale - 3:1



D Properties:

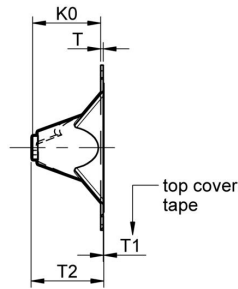
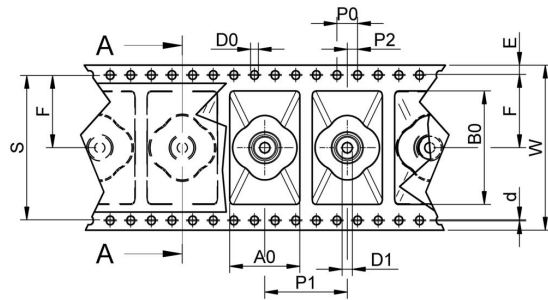
Properties	Value
Surface	Tin plated
Material	11SMnPb30
Thread	M3
Tightening torque	0.5 Nm
Solder Cream Thickness	150 µm
Packaging	Reel

E General information:

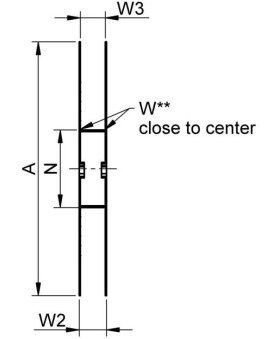
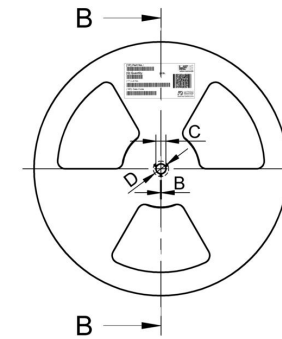
Technical Tolerances according to DIN ISO 2768m

In tape & reel packaging a cap is fixed to the product to realize automatic assembly

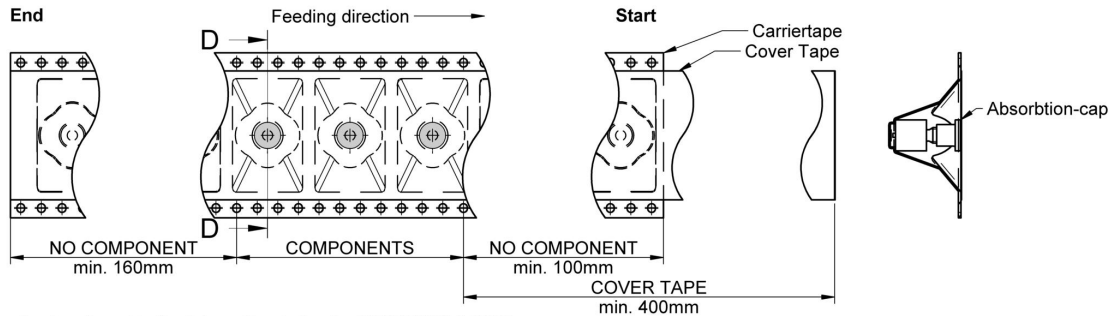
				Projection	DESCRIPTION
					WA-SMSE SMD Steel Spacer, M3 Thread External
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	Order.- No.
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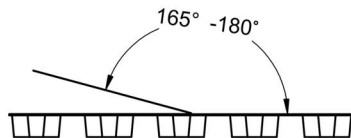
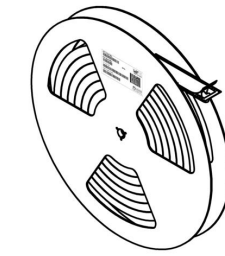
tolerance	A0	B0	W	P1	T	T1	T2	K0	D0	d	D1	E	S	F	P0	P2	Tape	VPE / packaging unit	
	typ.	typ.	±0,3	±0,1	max.	max.	ref.	typ.	+0,1	±0,05	min.	±0,1	±0,1	±0,1	±0,1	±0,1		pcs.	
size	9771050360	13,60	22,00	32,00	24,00	1,00	0,10	14,70	14,20	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	300
	9771060360	13,60	22,00	32,00	24,00	1,00	0,10	14,70	14,20	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	300
	9771070360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771080360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771090360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771100360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771110360	13,60	22,00	32,00	24,00	1,00	0,10	20,20	19,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	180
	9771120360	13,60	22,00	32,00	24,00	1,00	0,10	20,20	19,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	180
	9771130360	13,60	22,00	32,00	24,00	1,00	0,10	23,20	22,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	150
	9771140360	13,60	22,00	32,00	24,00	1,00	0,10	23,20	22,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	150
9771150360	13,60	22,00	32,00	24,00	1,00	0,10	23,20	22,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	150	



tolerance	A	B	C	D	N	W1	W2	W3	W3
	± 2,0	min.	± 0,8	min.	± 2,0	+ 2	max.	min.	max.
Tape width	32 mm	330,00	1,50	13,00	20,20	80,00	32,40	38,40	31,90 35,40



Packaging is referred to the international standard IEC 60286-3:2007



Tape width	32 mm	Pull-of force	0,1 N - 1,3 N
------------	-------	---------------	---------------

REV	DATE	BY	CHECKED
1.0	2013-12-13	SSt	SKI

Projection

Würth Elektronik eiSos GmbH & Co. KG
EMC & Inductive Solutions
Max-Eyth-Str. 1
74638 Waldenburg
Germany
Tel. +49 (0) 79 42 945 - 0
www.we-online.com
eiSos@we-online.com

DESCRIPTION

WA-SMSE SMD Steel Spacer, M3 Thread External

Order.- No. **9771050360R**

COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK

SIZE A4

This electronic component has been designed and developed for usage in general electronic equipment only. This product is not authorized for use in equipment where a higher safety standard and reliability standard is especially required or where a failure of the product is reasonably expected to cause severe personal injury or death, unless the parties have executed an agreement specifically governing such use. Moreover Würth Elektronik eiSos GmbH & Co KG products are neither designed nor intended for use in areas such as military, aerospace, aviation, nuclear control, submarine, transportation (automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network etc.. Würth Elektronik eiSos GmbH & Co KG must be informed about the intent of such usage before the design-in stage. In addition, sufficient reliability evaluation checks for safety must be performed on every electronic component which is used in electrical circuits that require high safety and reliability functions or performance.

H Soldering Specifications:



H1: Classification Reflow Profile for SMT components:



H2: Classification Reflow Profiles

Profile Feature	Pb-Free Assembly
Preheat - Temperature Min (T_{smin}) - Temperature Max (T_{smax}) - Time (t_s) from (T_{smin} to T_{smax})	150°C 200°C 60-120 seconds
Ramp-up rate (T_L to T_P)	3°C/ second max.
Liquidous temperature (T_L) Time (t_L) maintained above T_L	217°C 60-150 seconds
Peak package body temperature (T_P)	See Table H3
Time within 5°C of actual peak temperature (t_p)	20-30 seconds
Ramp-down rate (T_P to T_L)	6°C/ second max.
Time 25°C to peak temperature	8 minutes max.

refer to IPC/JEDEC J-STD-020D

H3: Package Classification Reflow Temperature

	Package Thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
PB-Free Assembly	< 1.6 mm	260°C	260°C	260°C
PB-Free Assembly	1.6 - 2.5 mm	260°C	250°C	245°C
PB-Free Assembly	≥ 2.5 mm	250°C	245°C	245°C

refer to IPC/JEDEC J-STD-020D

				Projection 	DESCRIPTION
					WA-SMSE SMD Steel Spacer, M3 Thread External
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	Order.- No. 9771050360R
1.0	2013-12-13	SSt	SKI		COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK
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I Cautions and Warnings:

The following conditions apply to all goods within the product series of **WA-SMSE** of Würth Elektronik eiSos GmbH & Co. KG:

General:

All recommendations according to the general technical specifications of the data-sheet have to be complied with.

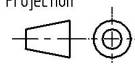

The responsibility for the applicability of customer specific products and use in a particular customer design is always within the authority of the customer. All technical specifications for standard products do also apply for customer specific products.

Product Specific:

Follow all instructions in the datasheet, especially:

- The solder profile has to be complied with according to the technical reflow soldering specification, otherwise no warranty will be sustained. Surface discoloration due to reflow processing is permitted.
- Wave soldering is not applicable. Reflow soldering is recommended.
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- The maximum permissible torques must be complied with to prevent mechanical destruction of the elements and PCB.



				Projection 	DESCRIPTION
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	WA-SMSE SMD Steel Spacer, M3 Thread External
1.0	2013-12-13	SSt	SKI		Order.- No. 9771050360R
REV	DATE	BY	CHECKED		 COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK
					SIZE A4

J Important Notes:

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2. Customer Responsibility related to Specific, in particular Safety-Relevant Applications

It has to be clearly pointed out that the possibility of a malfunction of electronic components or failure before the end of the usual lifetime cannot be completely eliminated in the current state of the art, even if the products are operated within the range of the specifications.

In certain customer applications requiring a very high level of safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health it must be ensured by most advanced technological aid of suitable design of the customer application that no injury or damage is caused to third parties in the event of malfunction or failure of an electronic component.

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Due to constant product improvement product specifications may change from time to time. As a standard reporting procedure of the Product Change Notification (PCN) according to the JEDEC-Standard inform about minor and major changes. In case of further queries regarding the PCN, the field sales engineer or the internal sales person in charge should be contacted. The basic responsibility of the customer as per Section 1 and 2 remains unaffected.

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Due to technical progress and economical evaluation we also reserve the right to discontinue production and delivery of products. As a standard reporting procedure of the Product Termination Notification (PTN) according to the JEDEC-Standard we will inform at an early stage about inevitable product discontinuance. According to this we cannot guarantee that all products within our product range will always be available. Therefore it needs to be verified with the field sales engineer or the internal sales person in charge about the current product availability expectancy before or when the product for application design-in disposal is considered. The approach named above does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

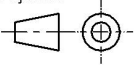

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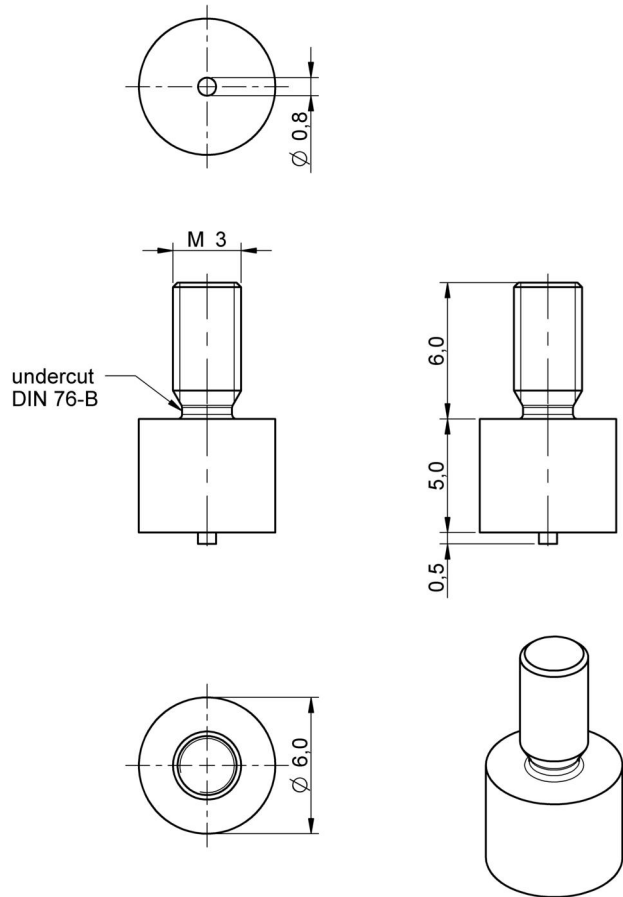
Würth Elektronik eiSos GmbH & Co. KG does not warrant or represent that any license, either expressed or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right relating to any combination, application, or process in which Würth Elektronik eiSos GmbH & Co. KG components or services are used.

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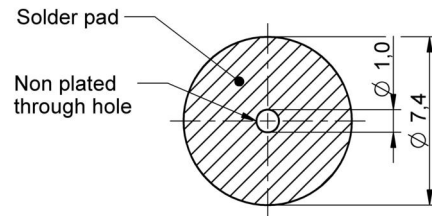
				Projection 		DESCRIPTION
						WA-SMSE SMD Steel Spacer, M3 Thread External
						Order.- No. 9771050360R
						
						SIZE A4
1.0	2013-12-13	SSt	SKI			
REV	DATE	BY	CHECKED			
					Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	

A Dimensions: [mm]



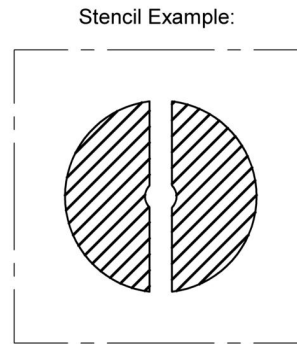
Scale - 3:1

B Recommended land pattern: [mm]



Scale - 3:1

C Stencil suggestion:



Scale - 3:1



D Properties:

Properties	Value
Surface	Tin plated
Material	11SMnPB30
Thread	M3
Tightening torque	0.5 Nm
Solder Cream Thickness	150 µm
Packaging	Reel

E General information:

Technical Tolerances according to DIN ISO 2768m

In tape & reel packaging a cap is fixed to the product to realize automatic assembly

				Projection	DESCRIPTION WA-SMSE SMD Steel Spacer, M3 Thread External
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	Order.- No. 9771050360R
1.0	2013-12-13	SSt	SKI		COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK
REV	DATE	BY	CHECKED		SIZE A4

H Soldering Specifications:



H1: Classification Reflow Profile for SMT components:



H2: Classification Reflow Profiles

Profile Feature	Pb-Free Assembly
Preheat - Temperature Min (T_{smin}) - Temperature Max (T_{smax}) - Time (t_s) from (T_{smin} to T_{smax})	150°C 200°C 60-120 seconds
Ramp-up rate (T_L to T_P)	3°C/ second max.
Liquidous temperature (T_L) Time (t_L) maintained above T_L	217°C 60-150 seconds
Peak package body temperature (T_P)	See Table H3
Time within 5°C of actual peak temperature (t_p)	20-30 seconds
Ramp-down rate (T_P to T_L)	6°C/ second max.
Time 25°C to peak temperature	8 minutes max.

refer to IPC/JEDEC J-STD-020D

H3: Package Classification Reflow Temperature

	Package Thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
PB-Free Assembly	< 1.6 mm	260°C	260°C	260°C
PB-Free Assembly	1.6 - 2.5 mm	260°C	250°C	245°C
PB-Free Assembly	≥ 2.5 mm	250°C	245°C	245°C

refer to IPC/JEDEC J-STD-020D

				Projection 	DESCRIPTION
					WA-SMSE SMD Steel Spacer, M3 Thread External
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	Order.- No. 9771050360R
1.0	2013-12-13	SSt	SKI		COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK
REV	DATE	BY	CHECKED		SIZE A4

This electronic component has been designed and developed for usage in general electronic equipment only. This product is not authorized for use in equipment where a higher safety standard and reliability standard is especially required or where a failure of the product is reasonably expected to cause severe personal injury or death, unless the parties have executed an agreement specifically governing such use. Moreover Würth Elektronik eiSos GmbH & Co KG products are neither designed nor intended for use in areas such as military, aerospace, aviation, nuclear control, submarine, transportation (automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network etc.. Würth Elektronik eiSos GmbH & Co KG must be informed about the intent of such usage before the design-in stage. In addition, sufficient reliability evaluation checks for safety must be performed on every electronic component which is used in electrical circuits that require high safety and reliability functions or performance.

I Cautions and Warnings:

The following conditions apply to all goods within the product series of **WA-SMSE** of Würth Elektronik eiSos GmbH & Co. KG:

General:

All recommendations according to the general technical specifications of the data-sheet have to be complied with.


The responsibility for the applicability of customer specific products and use in a particular customer design is always within the authority of the customer. All technical specifications for standard products do also apply for customer specific products.

Product Specific:

Follow all instructions in the datasheet, especially:

- The solder profile has to be complied with according to the technical reflow soldering specification, otherwise no warranty will be sustained. Surface discoloration due to reflow processing is permitted.
- Wave soldering is not applicable. Reflow soldering is recommended.
- All products shall be used before the end of the period of 12 months based on the product date-code, if not a 100% solderability can't be ensured.
- The maximum permissible torques must be complied with to prevent mechanical destruction of the elements and PCB.



				Projection 		DESCRIPTION
						WA-SMSE SMD Steel Spacer, M3 Thread External
						Order.- No. 9771050360R
						 COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK
						SIZE A4
1.0	2013-12-13	SSt	SKI			
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J Important Notes:

The following conditions apply to all goods within the product range of Würth Elektronik eiSos GmbH & Co. KG:



1. General Customer Responsibility

Some goods within the product range of Würth Elektronik eiSos GmbH & Co. KG contain statements regarding general suitability for certain application areas. These statements about suitability are based on our knowledge and experience of typical requirements concerning the areas, serve as general guidance and cannot be estimated as binding statements about the suitability for a customer application. The responsibility for the applicability and use in a particular customer design is always solely within the authority of the customer. Due to this fact it is up to the customer to evaluate, where appropriate to investigate and decide whether the device with the specific product characteristics described in the product specification is valid and suitable for the respective customer application or not.

2. Customer Responsibility related to Specific, in particular Safety-Relevant Applications

It has to be clearly pointed out that the possibility of a malfunction of electronic components or failure before the end of the usual lifetime cannot be completely eliminated in the current state of the art, even if the products are operated within the range of the specifications.

In certain customer applications requiring a very high level of safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health it must be ensured by most advanced technological aid of suitable design of the customer application that no injury or damage is caused to third parties in the event of malfunction or failure of an electronic component.

Therefore, customer is cautioned to verify that data sheets are current before placing orders. The current data sheets can be downloaded at www.we-online.com.

3. Best Care and Attention

Any product-specific notes, cautions and warnings must be strictly observed. Any disregard will result in the loss of warranty.

4. Customer Support for Product Specifications

Some products within the product range may contain substances which are subject to restrictions in certain jurisdictions in order to serve specific technical requirements. Necessary information is available on request. In this case the field sales engineer or the internal sales person in charge should be contacted who will be happy to support in this matter.

5. Product R&D

Due to constant product improvement product specifications may change from time to time. As a standard reporting procedure of the Product Change Notification (PCN) according to the JEDEC-Standard inform about minor and major changes. In case of further queries regarding the PCN, the field sales engineer or the internal sales person in charge should be contacted. The basic responsibility of the customer as per Section 1 and 2 remains unaffected.

6. Product Life Cycle

Due to technical progress and economical evaluation we also reserve the right to discontinue production and delivery of products. As a standard reporting procedure of the Product Termination Notification (PTN) according to the JEDEC-Standard we will inform at an early stage about inevitable product discontinuance. According to this we cannot guarantee that all products within our product range will always be available. Therefore it needs to be verified with the field sales engineer or the internal sales person in charge about the current product availability expectancy before or when the product for application design-in disposal is considered. The approach named above does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

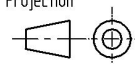

7. Property Rights

All the rights for contractual products produced by Würth Elektronik eiSos GmbH & Co. KG on the basis of ideas, development contracts as well as models or templates that are subject to copyright, patent or commercial protection supplied to the customer will remain with Würth Elektronik eiSos GmbH & Co. KG.

Würth Elektronik eiSos GmbH & Co. KG does not warrant or represent that any license, either expressed or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right relating to any combination, application, or process in which Würth Elektronik eiSos GmbH & Co. KG components or services are used.

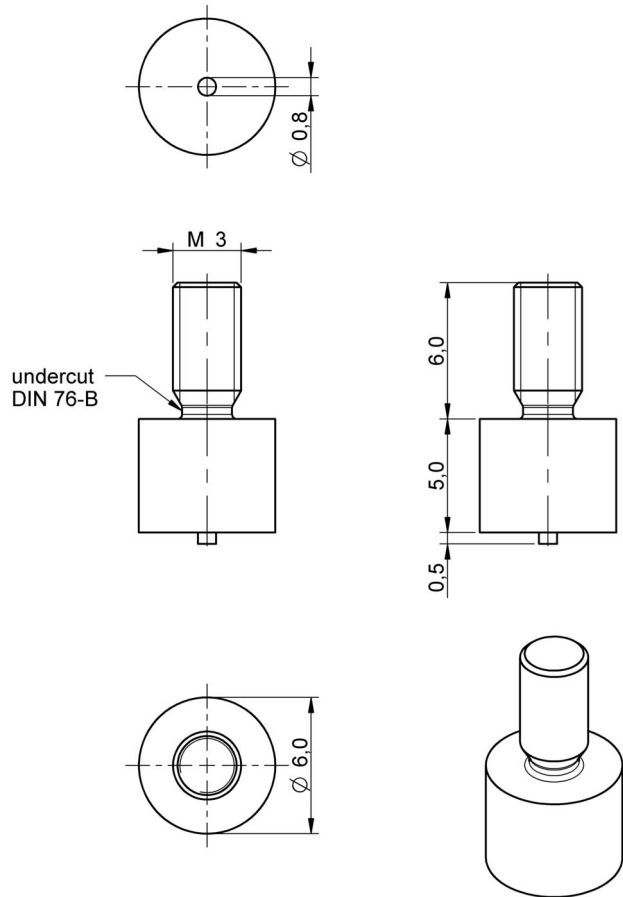
8. General Terms and Conditions

Unless otherwise agreed in individual contracts, all orders are subject to the current version of the "General Terms and Conditions of Würth Elektronik eiSos Group", last version available at www.we-online.com.

				Projection 		DESCRIPTION
						WA-SMSE SMD Steel Spacer, M3 Thread External
						Order.- No. 9771050360R
						
						SIZE A4
1.0	2013-12-13	SSt	SKI			
REV	DATE	BY	CHECKED			

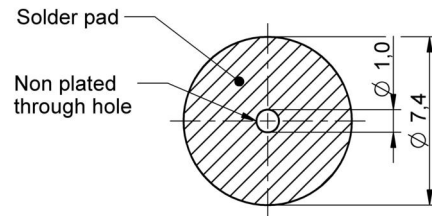
Würth Elektronik eiSos GmbH & Co. KG
EMC & Inductive Solutions
Max-Eyth-Str. 1
74638 Waldenburg
Germany
Tel. +49 (0) 79 42 945 - 0
www.we-online.com
eiSos@we-online.com

A Dimensions: [mm]



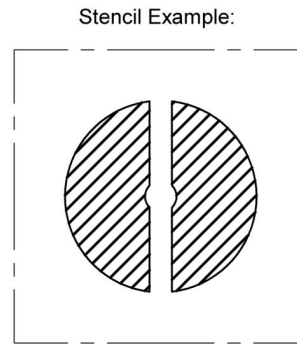
Scale - 3:1

B Recommended land pattern: [mm]



Scale - 3:1

C Stencil suggestion:



Scale - 3:1



D Properties:

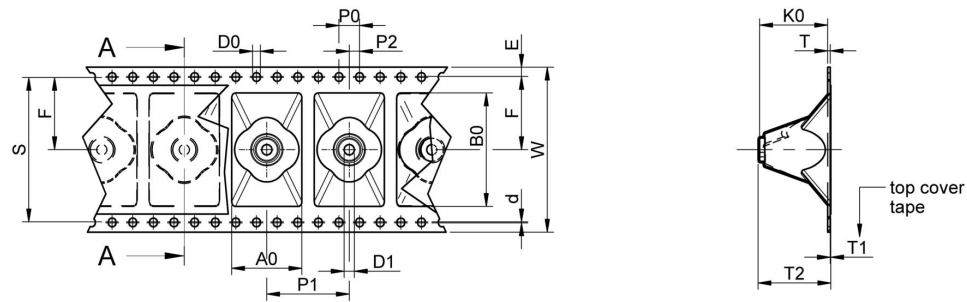
Properties	Value
Surface	Tin plated
Material	11SMnPB30
Thread	M3
Tightening torque	0.5 Nm
Solder Cream Thickness	150 µm
Packaging	Reel

E General information:

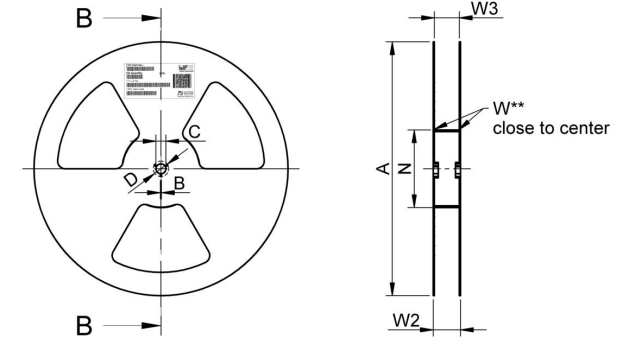
Technical Tolerances according to DIN ISO 2768m

In tape & reel packaging a cap is fixed to the product to realize automatic assembly

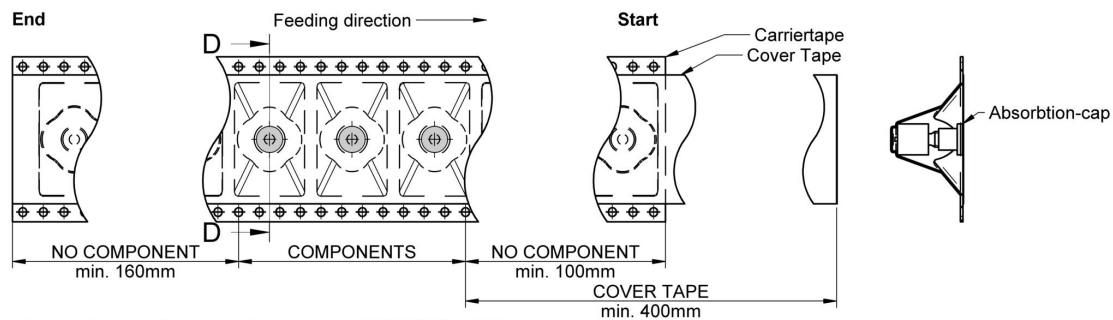
					Projection	DESCRIPTION
						WA-SMSE SMD Steel Spacer, M3 Thread External
					Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	Order.- No.
1.0	2013-12-13	SSt	SKI			9771050360R
REV	DATE	BY	CHECKED			COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK
						SIZE
						A4



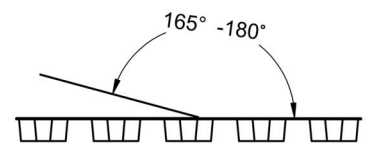
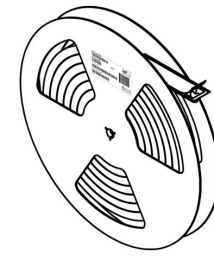
tolerance	A0	B0	W	P1	T	T1	T2	K0	D0	d	D1	E	S	F	P0	P2	Tape	VPE / packaging unit
	typ.	typ.	±0,3	±0,1	max.	max.	ref.	typ.	+0,1	±0,05	min.	±0,1	±0,1	±0,1	±0,1	±0,1		pcs.
9771050360	13,60	22,00	32,00	24,00	1,00	0,10	14,70	14,20	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	300
9771060360	13,60	22,00	32,00	24,00	1,00	0,10	14,70	14,20	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	300
9771070360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
9771080360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
9771090360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
9771100360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
9771110360	13,60	22,00	32,00	24,00	1,00	0,10	20,20	19,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	180
9771120360	13,60	22,00	32,00	24,00	1,00	0,10	20,20	19,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	180
9771130360	13,60	22,00	32,00	24,00	1,00	0,10	23,20	22,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	150
9771140360	13,60	22,00	32,00	24,00	1,00	0,10	23,20	22,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	150
9771150360	13,60	22,00	32,00	24,00	1,00	0,10	23,20	22,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	150



tolerance	A	B	C	D	N	W1	W2	W3	W3
± 2,0	min.	± 0,8	min.	± 2,0	+ 2	max.	min.	max.	
Tape width 32 mm	330,00	1,50	13,00	20,20	80,00	32,40	38,40	31,90	35,40



Packaging is referred to the international standard IEC 60286-3:2007



Tape width	32 mm	Pull-of force	0,1 N - 1,3 N
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1.0	2013-12-13	SSt	SKI
REV	DATE	BY	CHECKED

Projection

Würth Elektronik eiSos GmbH & Co. KG
EMC & Inductive Solutions
Max-Eyth-Str. 1
74638 Waldenburg
Germany
Tel. +49 (0) 79 42 945 - 0
www.we-online.com
eiSos@we-online.com

DESCRIPTION

WA-SMSE SMD Steel Spacer, M3 Thread External

Order.- No. **9771050360R**

COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK

SIZE A4

This electronic component has been designed and developed for usage in general electronic equipment only. This product is not authorized for use in equipment where a higher safety standard and reliability standard is especially required or where a failure of the product is reasonably expected to cause severe personal injury or death, unless the parties have executed an agreement specifically governing such use. Moreover Würth Elektronik eiSos GmbH & Co KG products are neither designed nor intended for use in areas such as military, aerospace, aviation, nuclear control, submarine, transportation (automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network etc.. Würth Elektronik eiSos GmbH & Co KG must be informed about the intent of such usage before the design-in stage. In addition, sufficient reliability evaluation checks for safety must be performed on every electronic component which is used in electrical circuits that require high safety and reliability functions or performance.

H Soldering Specifications:



H1: Classification Reflow Profile for SMT components:



H2: Classification Reflow Profiles

Profile Feature	Pb-Free Assembly
Preheat - Temperature Min (T_{smin}) - Temperature Max (T_{smax}) - Time (t_s) from (T_{smin} to T_{smax})	150°C 200°C 60-120 seconds
Ramp-up rate (T_L to T_P)	3°C/ second max.
Liquidous temperature (T_L) Time (t_L) maintained above T_L	217°C 60-150 seconds
Peak package body temperature (T_P)	See Table H3
Time within 5°C of actual peak temperature (t_p)	20-30 seconds
Ramp-down rate (T_P to T_L)	6°C/ second max.
Time 25°C to peak temperature	8 minutes max.

refer to IPC/JEDEC J-STD-020D

H3: Package Classification Reflow Temperature

	Package Thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
PB-Free Assembly	< 1.6 mm	260°C	260°C	260°C
PB-Free Assembly	1.6 - 2.5 mm	260°C	250°C	245°C
PB-Free Assembly	≥ 2.5 mm	250°C	245°C	245°C

refer to IPC/JEDEC J-STD-020D

				Projection 	DESCRIPTION WA-SMSE SMD Steel Spacer, M3 Thread External
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I Cautions and Warnings:

The following conditions apply to all goods within the product series of **WA-SMSE** of Würth Elektronik eiSos GmbH & Co. KG:

General:

All recommendations according to the general technical specifications of the data-sheet have to be complied with.

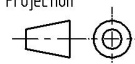

The responsibility for the applicability of customer specific products and use in a particular customer design is always within the authority of the customer. All technical specifications for standard products do also apply for customer specific products.

Product Specific:

Follow all instructions in the datasheet, especially:

- The solder profile has to be complied with according to the technical reflow soldering specification, otherwise no warranty will be sustained. Surface discoloration due to reflow processing is permitted.
- Wave soldering is not applicable. Reflow soldering is recommended.
- All products shall be used before the end of the period of 12 months based on the product date-code, if not a 100% solderability can't be ensured.
- The maximum permissible torques must be complied with to prevent mechanical destruction of the elements and PCB.



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1.0	2013-12-13	SSt	SKI		 COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK
REV	DATE	BY	CHECKED		SIZE A4

J Important Notes:

The following conditions apply to all goods within the product range of Würth Elektronik eiSos GmbH & Co. KG:



1. General Customer Responsibility

Some goods within the product range of Würth Elektronik eiSos GmbH & Co. KG contain statements regarding general suitability for certain application areas. These statements about suitability are based on our knowledge and experience of typical requirements concerning the areas, serve as general guidance and cannot be estimated as binding statements about the suitability for a customer application. The responsibility for the applicability and use in a particular customer design is always solely within the authority of the customer. Due to this fact it is up to the customer to evaluate, where appropriate to investigate and decide whether the device with the specific product characteristics described in the product specification is valid and suitable for the respective customer application or not.

2. Customer Responsibility related to Specific, in particular Safety-Relevant Applications

It has to be clearly pointed out that the possibility of a malfunction of electronic components or failure before the end of the usual lifetime cannot be completely eliminated in the current state of the art, even if the products are operated within the range of the specifications.

In certain customer applications requiring a very high level of safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health it must be ensured by most advanced technological aid of suitable design of the customer application that no injury or damage is caused to third parties in the event of malfunction or failure of an electronic component.

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3. Best Care and Attention

Any product-specific notes, cautions and warnings must be strictly observed. Any disregard will result in the loss of warranty.

4. Customer Support for Product Specifications

Some products within the product range may contain substances which are subject to restrictions in certain jurisdictions in order to serve specific technical requirements. Necessary information is available on request. In this case the field sales engineer or the internal sales person in charge should be contacted who will be happy to support in this matter.

5. Product R&D

Due to constant product improvement product specifications may change from time to time. As a standard reporting procedure of the Product Change Notification (PCN) according to the JEDEC-Standard inform about minor and major changes. In case of further queries regarding the PCN, the field sales engineer or the internal sales person in charge should be contacted. The basic responsibility of the customer as per Section 1 and 2 remains unaffected.

6. Product Life Cycle

Due to technical progress and economical evaluation we also reserve the right to discontinue production and delivery of products. As a standard reporting procedure of the Product Termination Notification (PTN) according to the JEDEC-Standard we will inform at an early stage about inevitable product discontinuance. According to this we cannot guarantee that all products within our product range will always be available. Therefore it needs to be verified with the field sales engineer or the internal sales person in charge about the current product availability expectancy before or when the product for application design-in disposal is considered. The approach named above does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

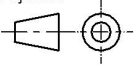

7. Property Rights

All the rights for contractual products produced by Würth Elektronik eiSos GmbH & Co. KG on the basis of ideas, development contracts as well as models or templates that are subject to copyright, patent or commercial protection supplied to the customer will remain with Würth Elektronik eiSos GmbH & Co. KG.

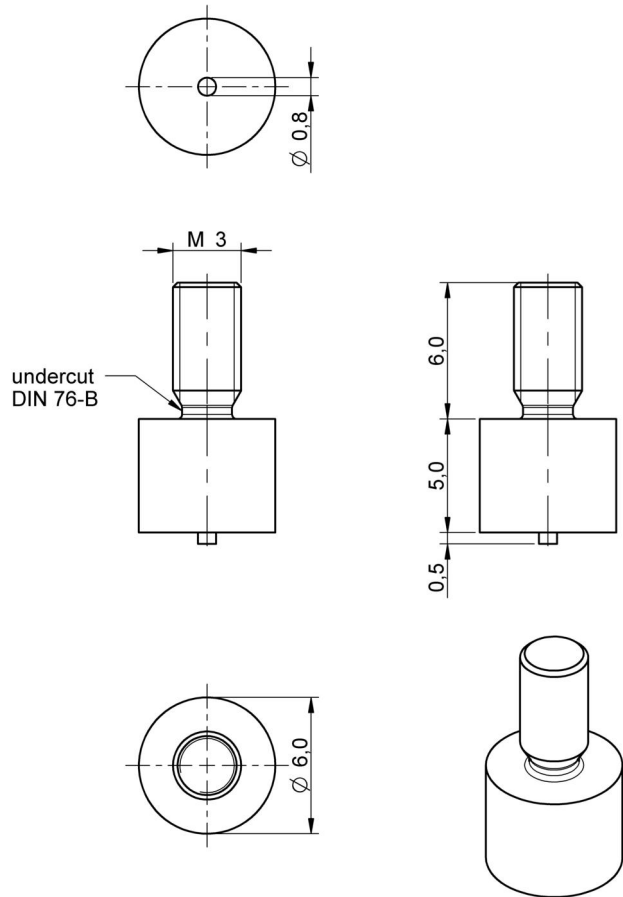
Würth Elektronik eiSos GmbH & Co. KG does not warrant or represent that any license, either expressed or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right relating to any combination, application, or process in which Würth Elektronik eiSos GmbH & Co. KG components or services are used.

8. General Terms and Conditions

Unless otherwise agreed in individual contracts, all orders are subject to the current version of the "General Terms and Conditions of Würth Elektronik eiSos Group", last version available at www.we-online.com.

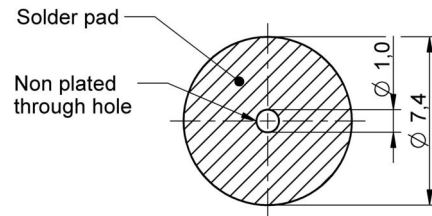
				Projection 	DESCRIPTION
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	WA-SMSE SMD Steel Spacer, M3 Thread External
1.0	2013-12-13	SSt	SKI		Order.- No. 9771050360R
REV	DATE	BY	CHECKED		 COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK
					SIZE A4

A Dimensions: [mm]



Scale - 3:1

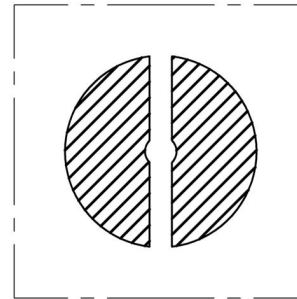
B Recommended land pattern: [mm]



Scale - 3:1

C Stencil suggestion:

Stencil Example:



Scale - 3:1



D Properties:

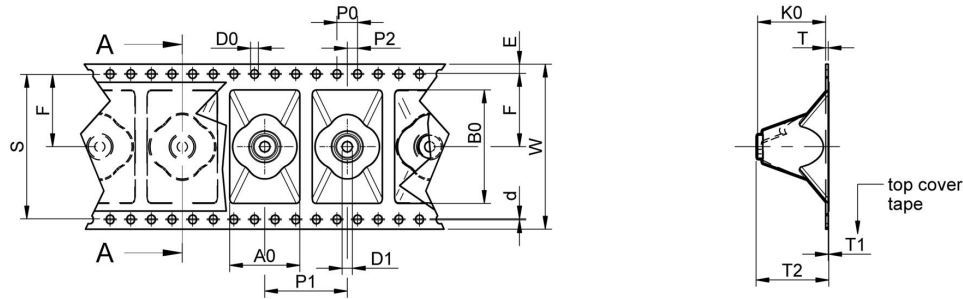
Properties	Value
Surface	Tin plated
Material	11SMnPB30
Thread	M3
Tightening torque	0.5 Nm
Solder Cream Thickness	150 µm
Packaging	Reel

E General information:

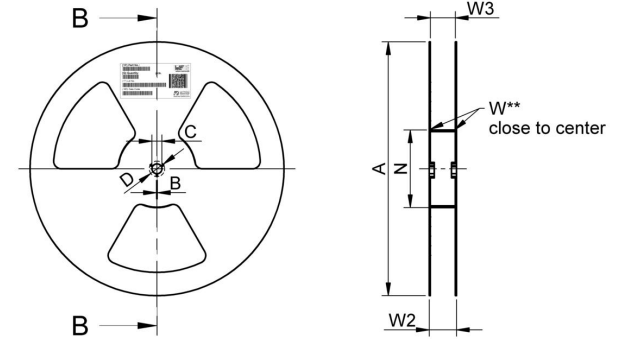
Technical Tolerances according to DIN ISO 2768m

In tape & reel packaging a cap is fixed to the product to realize automatic assembly

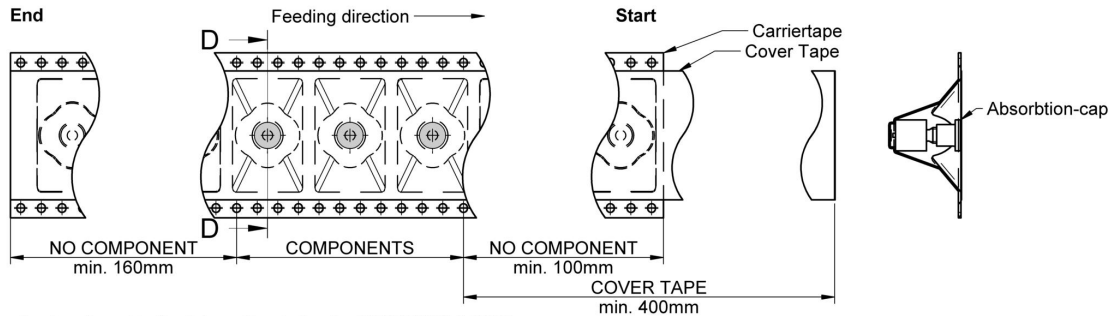
				Projection	DESCRIPTION WA-SMSE SMD Steel Spacer, M3 Thread External
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	Order.- No. 9771050360R
1.0	2013-12-13	SSt	SKI		COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK
REV	DATE	BY	CHECKED		SIZE A4



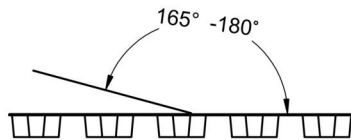
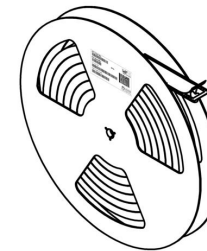
	A0	B0	W	P1	T	T1	T2	K0	D0	d	D1	E	S	F	P0	P2	Tape	VPE / packaging unit	
tolerance	typ.	typ.	±0,3	±0,1	max.	max.	ref.	typ.	+0,1	±0,05	min.	±0,1	±0,1	±0,1	±0,1	±0,1		pcs.	
size	9771050360	13,60	22,00	32,00	24,00	1,00	0,10	14,70	14,20	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	300
	9771060360	13,60	22,00	32,00	24,00	1,00	0,10	14,70	14,20	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	300
	9771070360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771080360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771090360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771100360	13,60	22,00	32,00	24,00	1,00	0,10	18,20	17,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	200
	9771110360	13,60	22,00	32,00	24,00	1,00	0,10	20,20	19,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	180
	9771120360	13,60	22,00	32,00	24,00	1,00	0,10	20,20	19,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	180
	9771130360	13,60	22,00	32,00	24,00	1,00	0,10	23,20	22,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	150
	9771140360	13,60	22,00	32,00	24,00	1,00	0,10	23,20	22,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	150
9771150360	13,60	22,00	32,00	24,00	1,00	0,10	23,20	22,70	1,50	0,20	2,00	1,75	28,40	14,20	4,00	2,00	Polystyrene	150	



	A	B	C	D	N	W1	W2	W3	W3
tolerance	± 2,0	min.	± 0,8	min.	± 2,0	+ 2	max.	min.	max.
Tape width	32 mm	330,00	1,50	13,00	20,20	80,00	32,40	38,40	31,90 35,40



Packaging is referred to the international standard IEC 60286-3:2007



		Pull-of force
Tape width	32 mm	0,1 N - 1,3 N

1.0	2013-12-13	SSt	SKI
REV	DATE	BY	CHECKED

Projection

Würth Elektronik eiSos GmbH & Co. KG
 EMC & Inductive Solutions
 Max-Eyth-Str. 1
 74638 Waldenburg
 Germany
 Tel. +49 (0) 79 42 945 - 0
 www.we-online.com
 eiSos@we-online.com

DESCRIPTION

WA-SMSE SMD Steel Spacer, M3 Thread External

Order.- No. **9771050360R**

COMPLIANT
 RoHS&REACH
 WÜRTH ELEKTRONIK

SIZE
 A4

This electronic component has been designed and developed for usage in general electronic equipment only. This product is not authorized for use in equipment where a higher safety standard and reliability standard is especially required or where a failure of the product is reasonably expected to cause severe personal injury or death, unless the parties have executed an agreement specifically governing such use. Moreover Würth Elektronik eiSos GmbH & Co KG products are neither designed nor intended for use in areas such as military, aerospace, aviation, nuclear control, submarine, transportation (automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network etc.. Würth Elektronik eiSos GmbH & Co KG must be informed about the intent of such usage before the design-in stage. In addition, sufficient reliability evaluation checks for safety must be performed on every electronic component which is used in electrical circuits that require high safety and reliability functions or performance.

H Soldering Specifications:



H1: Classification Reflow Profile for SMT components:



H2: Classification Reflow Profiles

Profile Feature	Pb-Free Assembly
Preheat - Temperature Min (T_{smin}) - Temperature Max (T_{smax}) - Time (t_s) from (T_{smin} to T_{smax})	150°C 200°C 60-120 seconds
Ramp-up rate (T_L to T_P)	3°C/ second max.
Liquidous temperature (T_L) Time (t_L) maintained above T_L	217°C 60-150 seconds
Peak package body temperature (T_P)	See Table H3
Time within 5°C of actual peak temperature (t_p)	20-30 seconds
Ramp-down rate (T_P to T_L)	6°C/ second max.
Time 25°C to peak temperature	8 minutes max.

refer to IPC/JEDEC J-STD-020D

H3: Package Classification Reflow Temperature

	Package Thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
PB-Free Assembly	< 1.6 mm	260°C	260°C	260°C
PB-Free Assembly	1.6 - 2.5 mm	260°C	250°C	245°C
PB-Free Assembly	≥ 2.5 mm	250°C	245°C	245°C

refer to IPC/JEDEC J-STD-020D

				Projection 	DESCRIPTION
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				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	Order.- No. 9771050360R
1.0	2013-12-13	SSt	SKI		COMPLIANT RoHS&REACH WÜRTH ELEKTRONIK
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This electronic component has been designed and developed for usage in general electronic equipment only. This product is not authorized for use in equipment where a higher safety standard and reliability standard is especially required or where a failure of the product is reasonably expected to cause severe personal injury or death, unless the parties have executed an agreement specifically governing such use. Moreover Würth Elektronik eiSos GmbH & Co KG products are neither designed nor intended for use in areas such as military, aerospace, aviation, nuclear control, submarine, transportation (automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network etc.. Würth Elektronik eiSos GmbH & Co KG must be informed about the intent of such usage before the design-in stage. In addition, sufficient reliability evaluation checks for safety must be performed on every electronic component which is used in electrical circuits that require high safety and reliability functions or performance.

I Cautions and Warnings:

The following conditions apply to all goods within the product series of **WA-SMSE** of Würth Elektronik eiSos GmbH & Co. KG:

General:

All recommendations according to the general technical specifications of the data-sheet have to be complied with.

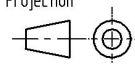

The responsibility for the applicability of customer specific products and use in a particular customer design is always within the authority of the customer. All technical specifications for standard products do also apply for customer specific products.

Product Specific:

Follow all instructions in the datasheet, especially:

- The solder profile has to be complied with according to the technical reflow soldering specification, otherwise no warranty will be sustained. Surface discoloration due to reflow processing is permitted.
- Wave soldering is not applicable. Reflow soldering is recommended.
- All products shall be used before the end of the period of 12 months based on the product date-code, if not a 100% solderability can't be ensured.
- The maximum permissible torques must be complied with to prevent mechanical destruction of the elements and PCB.



				Projection 	DESCRIPTION
					WA-SMSE SMD Steel Spacer, M3 Thread External
				Würth Elektronik eiSos GmbH & Co. KG EMC & Inductive Solutions Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0 www.we-online.com eiSos@we-online.com	Order.- No. 9771050360R
1.0	2013-12-13	SSt	SKI		
REV	DATE	BY	CHECKED		SIZE A4

J Important Notes:

The following conditions apply to all goods within the product range of Würth Elektronik eiSos GmbH & Co. KG:



1. General Customer Responsibility

Some goods within the product range of Würth Elektronik eiSos GmbH & Co. KG contain statements regarding general suitability for certain application areas. These statements about suitability are based on our knowledge and experience of typical requirements concerning the areas, serve as general guidance and cannot be estimated as binding statements about the suitability for a customer application. The responsibility for the applicability and use in a particular customer design is always solely within the authority of the customer. Due to this fact it is up to the customer to evaluate, where appropriate to investigate and decide whether the device with the specific product characteristics described in the product specification is valid and suitable for the respective customer application or not.

2. Customer Responsibility related to Specific, in particular Safety-Relevant Applications

It has to be clearly pointed out that the possibility of a malfunction of electronic components or failure before the end of the usual lifetime cannot be completely eliminated in the current state of the art, even if the products are operated within the range of the specifications.

In certain customer applications requiring a very high level of safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health it must be ensured by most advanced technological aid of suitable design of the customer application that no injury or damage is caused to third parties in the event of malfunction or failure of an electronic component.

Therefore, customer is cautioned to verify that data sheets are current before placing orders. The current data sheets can be downloaded at www.we-online.com.

3. Best Care and Attention

Any product-specific notes, cautions and warnings must be strictly observed. Any disregard will result in the loss of warranty.

4. Customer Support for Product Specifications

Some products within the product range may contain substances which are subject to restrictions in certain jurisdictions in order to serve specific technical requirements. Necessary information is available on request. In this case the field sales engineer or the internal sales person in charge should be contacted who will be happy to support in this matter.

5. Product R&D

Due to constant product improvement product specifications may change from time to time. As a standard reporting procedure of the Product Change Notification (PCN) according to the JEDEC-Standard inform about minor and major changes. In case of further queries regarding the PCN, the field sales engineer or the internal sales person in charge should be contacted. The basic responsibility of the customer as per Section 1 and 2 remains unaffected.

6. Product Life Cycle

Due to technical progress and economical evaluation we also reserve the right to discontinue production and delivery of products. As a standard reporting procedure of the Product Termination Notification (PTN) according to the JEDEC-Standard we will inform at an early stage about inevitable product discontinuance. According to this we cannot guarantee that all products within our product range will always be available. Therefore it needs to be verified with the field sales engineer or the internal sales person in charge about the current product availability expectancy before or when the product for application design-in disposal is considered. The approach named above does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

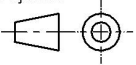

7. Property Rights

All the rights for contractual products produced by Würth Elektronik eiSos GmbH & Co. KG on the basis of ideas, development contracts as well as models or templates that are subject to copyright, patent or commercial protection supplied to the customer will remain with Würth Elektronik eiSos GmbH & Co. KG.

Würth Elektronik eiSos GmbH & Co. KG does not warrant or represent that any license, either expressed or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right relating to any combination, application, or process in which Würth Elektronik eiSos GmbH & Co. KG components or services are used.

8. General Terms and Conditions

Unless otherwise agreed in individual contracts, all orders are subject to the current version of the "General Terms and Conditions of Würth Elektronik eiSos Group", last version available at www.we-online.com.

				Projection 	DESCRIPTION
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