

## Features

- Quad TVS in Common Anode Configuration
- Nominal Zener Voltage: 6.8V
- Ultra-Small Surface Mount Package
- Ideal For Transient Suppression
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green Device" (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

## ESD Capability

- IEC 61000-4-2 Contact Method:  $\pm 8\text{kV}$
- IEC 61000-4-2 Air Discharge Method:  $\pm 25\text{kV}$

## Mechanical Data

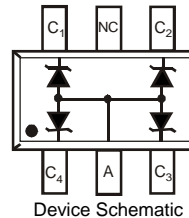
- Case: SOT-563
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminal Finish: Matte Tin, Annealed Over Copper Leadframe. Solderable per MIL-STD-202, Method 208
- Orientation: See Diagram
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.003 grams (approximate)



Top View



Bottom View



Device Schematic

## Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Power Dissipation, 10x1000 $\mu\text{S}$ Waveform (Note 5)	$P_{pk}$	10	W
Peak Power Dissipation, 8x20 $\mu\text{S}$ Waveform (Note 5)		80	
Forward Voltage @ $I_F = 10\text{mA}$ (Note 3)	$V_F$	0.9	V
Forward Voltage @ $I_F = 100\text{mA}$ (Note 3)	$V_F$	1.0	V

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 4)	$P_D$	150	mW
Thermal Resistance, Junction-to-Ambient (Note 4)	$R_{\theta JA}$	833	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^\circ\text{C}$

## Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Type Number	Marking Code	Reverse Standoff Voltage and Leakage		Breakdown Voltage (Note 3)			Maximum Reverse Current (Note 3)		Typical Junction Capacitance
		$V_{RWM}$	$I_R @ V_{RWM}$	$V_{BR} @ I_T = 1\text{mA}$			$I_R @ V_R$		$C_T @ V_R = 0\text{V}, f = 1\text{MHz}$
				Min (V)	Nom (V)	Max (V)	$\mu\text{A}$	V	
QZX563C6V8C	CB	5	1.5	6.47	6.8	7.14	1.0	3.0	63

- Notes:
1. No purposefully added lead.
  2. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  3. Short duration pulse test used to minimize self-heating effect.
  4. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. Suggested Pad Layout Document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  5. Non-repetitive current pulse per Figure 2 & 3 and derate above  $T_A = 25^\circ\text{C}$  per Figure 1.

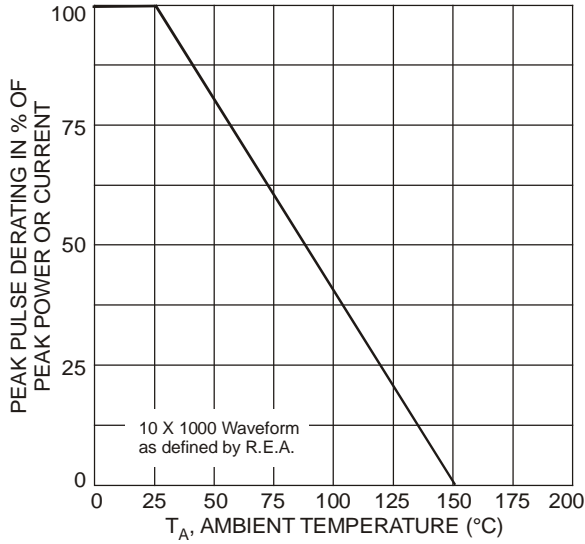


Fig. 1 Pulse Derating Curve

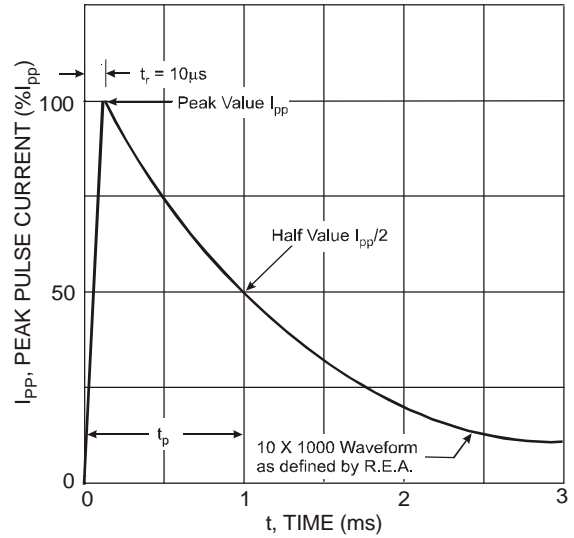


Fig. 2 Pulse Waveform

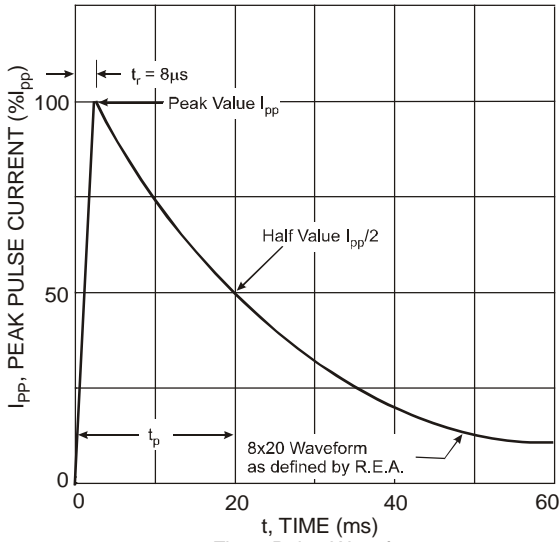


Fig. 3 Pulse Waveform

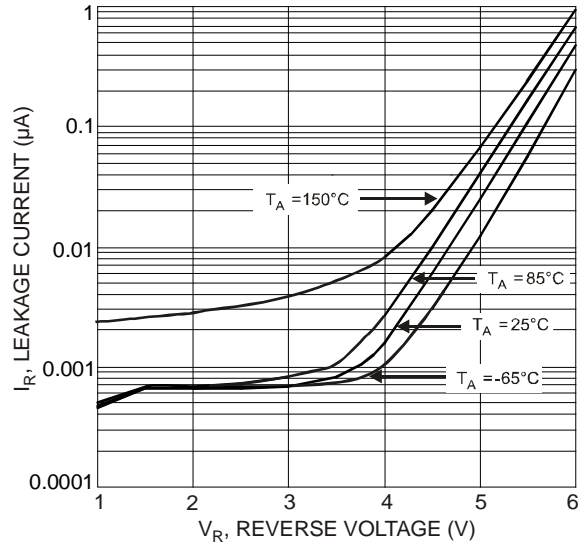


Fig. 4 Typical Leakage Current vs. Reverse Voltage

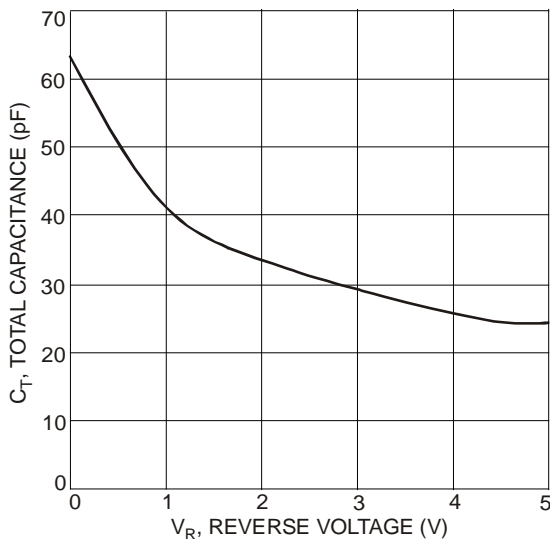


Fig. 5 Typical Total Capacitance vs. Reverse Voltage

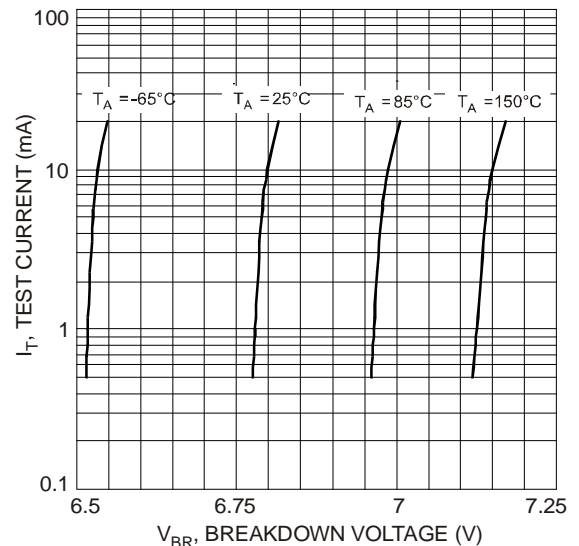
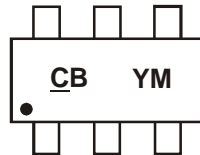


Fig. 6 Breakdown Voltage vs. Test Current

**Ordering Information** (Note 6)

Part Number	Case	Packaging
QZX563C6V8C-7	SOT-563	3000/Tape & Reel

Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**


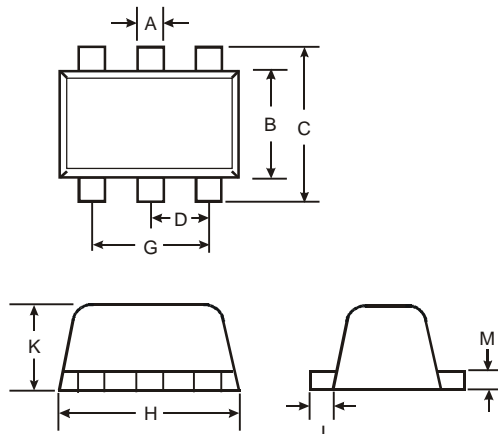
CB = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (Ex: S = 2005)  
 M = Month (ex: 9 = September)

Date Code Key

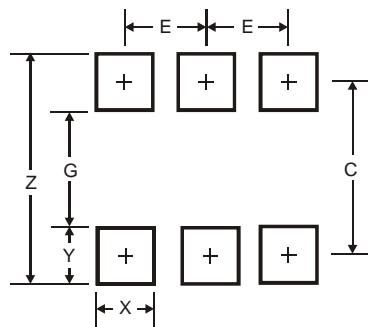
Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Code	S	T	U	V	W	X	Y	Z	A	B	C

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

**Package Outline Dimensions**


SOT-563			
Dim	Min	Max	Typ
A	0.15	0.30	0.20
B	1.10	1.25	1.20
C	1.55	1.70	1.60
D	-	-	0.50
G	0.90	1.10	1.00
H	1.50	1.70	1.60
K	0.55	0.60	0.60
L	0.10	0.30	0.20
M	0.10	0.18	0.11
All Dimensions in mm			

**Suggested Pad Layout**


Dimensions	Value (in mm)
Z	2.2
G	1.2
X	0.375
Y	0.5
C	1.7
E	0.5

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