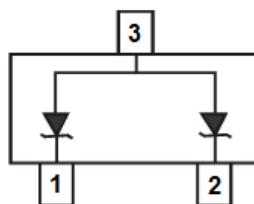


## Features

- 300 Watts Peak Pulse Power ( $t_P = 8 \times 20 \mu s$ )
- IEC 61000-4-2 (ESD): Air – 15kV, Contact – 8kV
- Dual Common Anode TVS
- SOT23 Package Allows Either Two Separate Unidirectional Configurations or a Single Bidirectional Configuration
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**



Top View



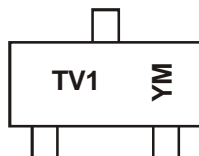
Device Schematic

## Ordering Information (Note 4)

Part Number	Qualification	Case	Packaging
SM05-7	AEC-Q101	SOT23	3,000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



TV1 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: D = 2016)  
 M = Month (ex: 9 = September)

### Date Code Key

Year	2010	.....	2015	2016	2017	2018	2019
Code	X	.....	C	D	E	F	G

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

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Peak Pulse Power ( $t_P = 8 \times 20 \mu s$ ) (Note 5) $T_A = +25^\circ C$	$P_{PK}$	300	W
Thermal Resistance, Junction to Ambient (Note 5) $T_A = +25^\circ C$	$R_{\theta JA}$	417	$^\circ C/W$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ C$

- Note:
5. Device mounted on FR-4 PC board with suggested pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>. Measured across pin 1 and pin 2.

# Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified) (Note 7)

Reverse Standoff Voltage	Breakdown Voltage V <sub>BR</sub> @ I <sub>T</sub>		Test Current	Max. Reverse Leakage @ V <sub>RWM</sub> (Note 6)	Max. Clamping Voltage @ I <sub>PP</sub> = 5A (Note 7)	Max. Clamping Voltage V <sub>C</sub> @ I <sub>PP</sub> (Note 7)		Typical Capacitance C <sub>T</sub> (Note 8)
V <sub>RWM</sub> (V)	Min (V)	Max (V)	I <sub>T</sub> (mA)	I <sub>R</sub> (μA)	V <sub>C</sub> (V)	V <sub>C</sub> (V)	I <sub>PP</sub> (A)	(pF)
5	6.2	7.3	1.0	10	9.8	20.6	17	230

- Notes:
6. Short duration pulse test used to minimize self-heating effect.
  7. Clamping voltage value is based on an 8x20 μs peak pulse current (I<sub>PP</sub>) waveform.
  8. Measured at V<sub>R</sub> = 0V, f = 1MHz.

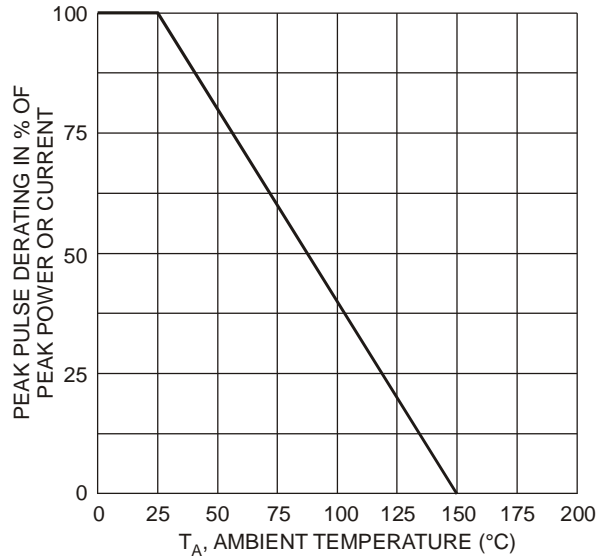


Fig. 1 Pulse Derating Curve

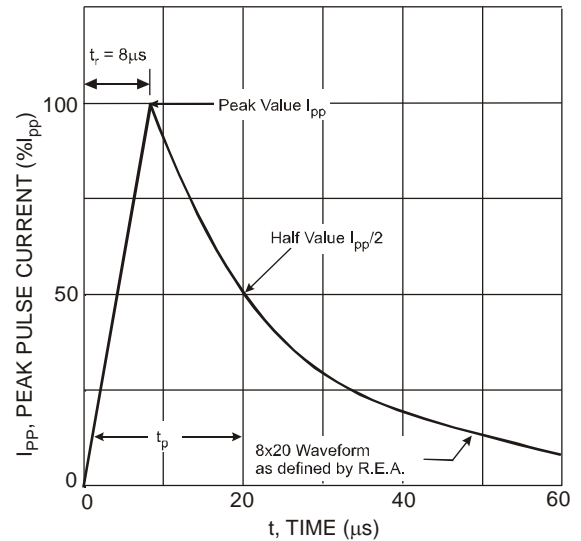


Fig. 2 Pulse Waveform

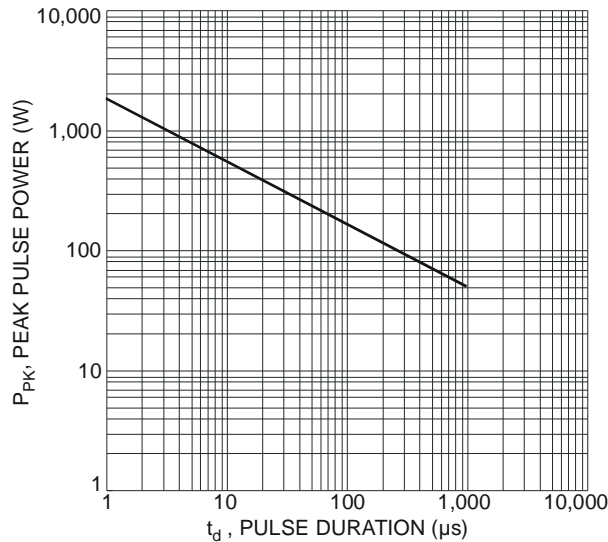


Fig. 3 Max. Peak Pulse Power vs. Pulse Duration

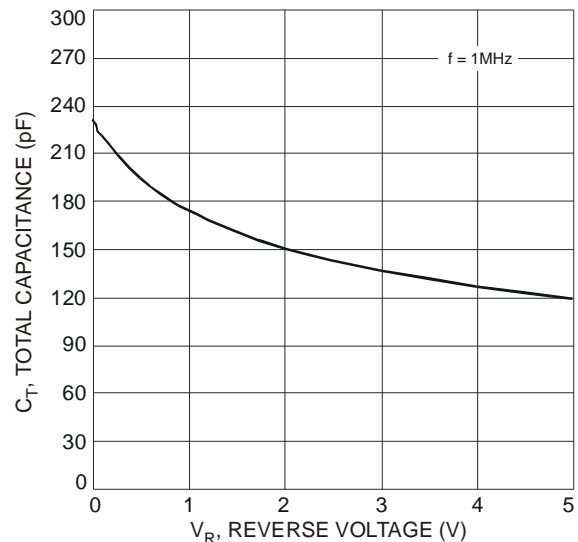
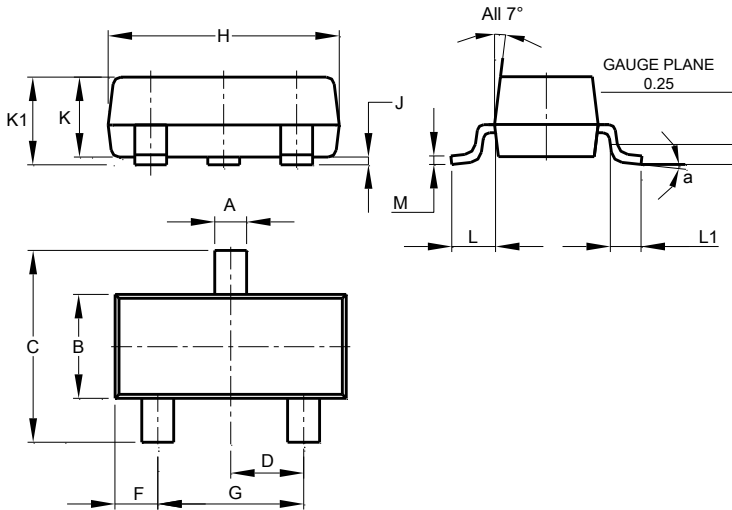


Fig. 4 Typical Total Capacitance vs. Reverse Voltage

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### SOT23

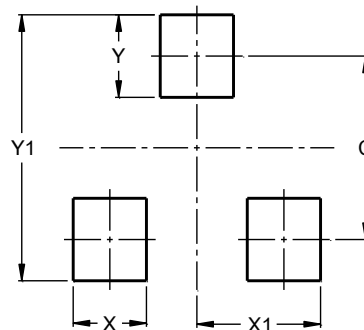


SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### SOT23



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

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