

Features

- IEC 61000-4-2 (ESD): Air $\pm 15\text{kV}$, Contact $\pm 8\text{kV}$
- 4 Channels of ESD Protection
- Low Channel Input Capacitance of 1.0pF Typical
- Typically Used at High Speed Ports such as USB 2.0, IEEE1394, Serial ATA, DVI, HDMI, PCI
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- Halogen and Antimony Free. "Green" Device (Note 3)

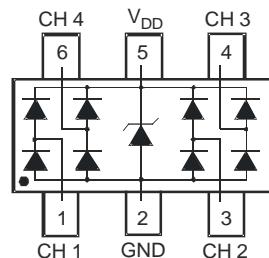
SOT363



Top View

Mechanical Data

- Case: SOT363
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 (E3)
- Weight: 0.006 grams (approximate)



Device Schematic

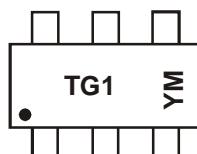
Ordering Information (Note 4)

Product	Compliance	Marking	Reel size(inches)	Tape width(mm)	Quantity per reel
DRTR5V0U4S-7	AEC-Q101	TG1	7	8	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 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



TG1 = Product Type Marking Code

YM = Date Code Marking

Y = Year (ex: A = 2013)

M = Month (ex: 9 = September)

Date Code Key

Year	2013	2014	2015	2016	2017	2018	2019					
Code	A	B	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

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified)

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Current	I_{PP}	5	A	8/20 μs , Per Figure 2
ESD Protection – Contact Discharge	$V_{ESD_Contact}$	± 8	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	V_{ESD_Air}	± 15	kV	Standard IEC 61000-4-2

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	200	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Standoff Voltage	V_{RWM}	—	—	5.5	V	-
Channel Leakage Current (Note 6, 7)	I_R	—	1	100	nA	$V_R = 3\text{V}$
Reverse breakdown voltage	V_{BR}	6.0	—	9.0	V	$I_R = 1\text{mA}$, from pin 5 to pin 2
Forward Voltage	V_F	—	0.8	—	V	$I_F = 8\text{mA}$
Dynamic Resistance	R_{DYN}	—	0.9	—	Ω	$I_{PP} = 1\text{A}$, $t_p = 8/20\mu\text{s}$
I/O to GND Capacitance	$C_{(I/O-GND)}$	—	1.0	1.5	pF	$V_{(I/O-GND)} = 0\text{V}$, $f = 1\text{MHz}$
I/O to I/O Capacitance	$C_{(I/O-I/O)}$	—	0.6	—	pF	$V_{(I/O-I/O)} = 0\text{V}$, $f = 1\text{MHz}$

Notes:

5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes, Inc. suggested pad layout AP02001, which can be found on our website at <http://www.diodes.com>.
6. Short duration pulse test used to minimize self-heating effect.
7. Measured from pin 1, 3, 4, 5 and 6 to GND.
8. For information on the impact of Diodes' USB 2.0 compatible ESD protectors on signal integrity including eye diagram plots, please refer to AN77 at the following URL: http://www.diodes.com/destools/appnote_dnote.html.

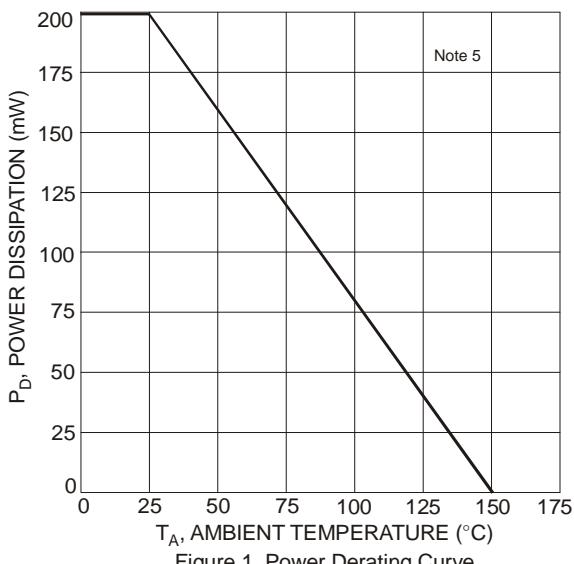


Figure 1 Power Derating Curve

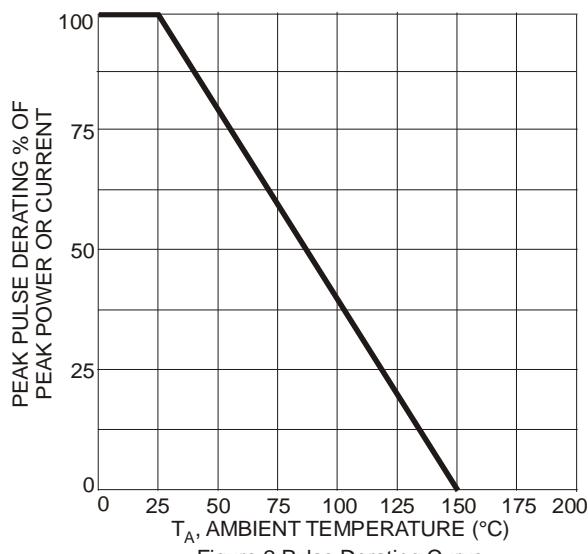
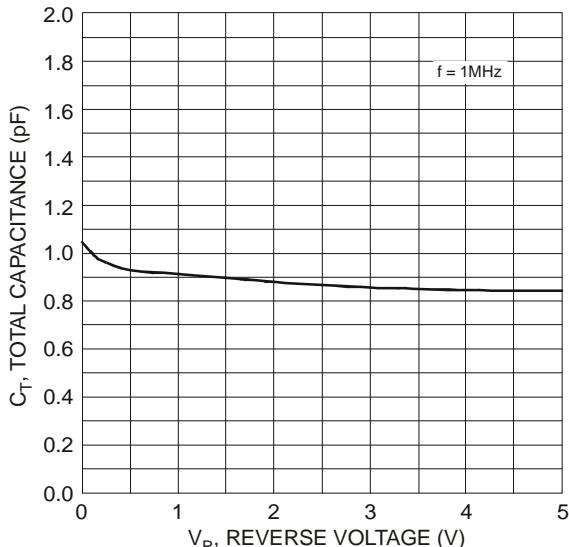
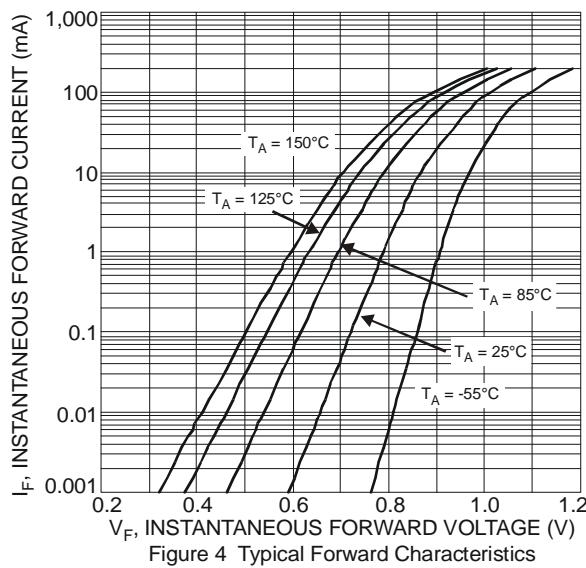
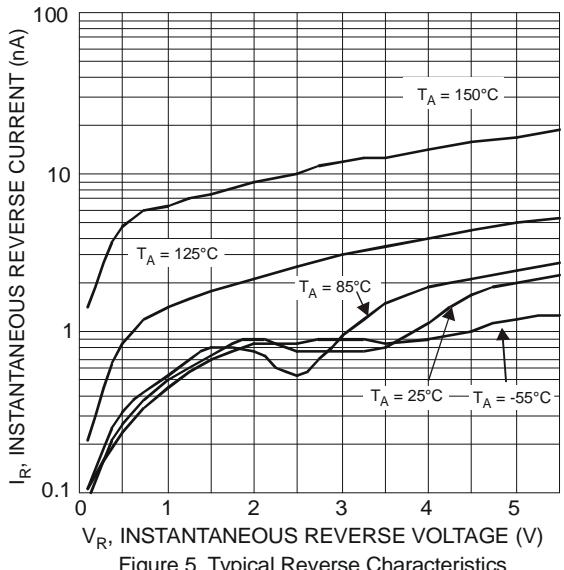
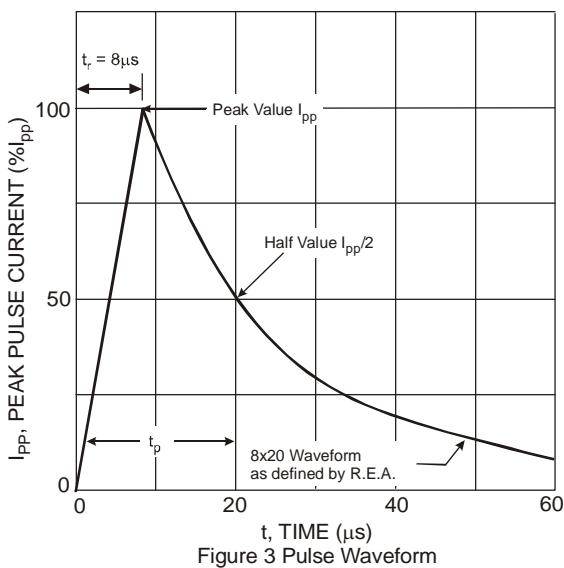
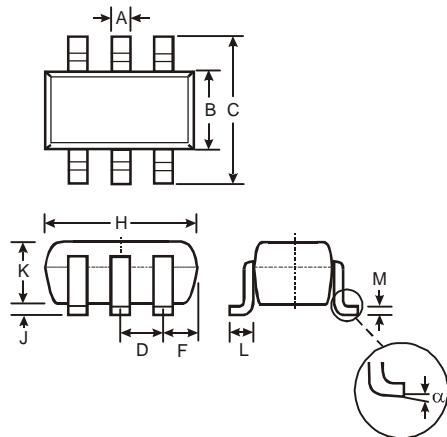


Figure 2 Pulse Derating Curve



Package Outline Dimensions

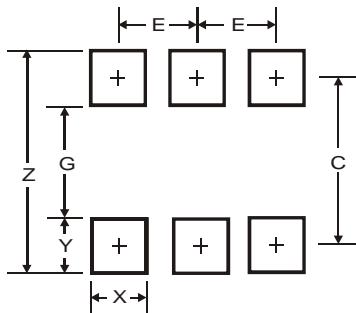
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SOT363			
Dim	Min	Max	Typ
A	0.10	0.30	0.25
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	0.65	Typ	
F	0.40	0.45	0.425
H	1.80	2.20	2.15
J	0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.22	0.11
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
Z	2.5
G	1.3
X	0.42
Y	0.6
C	1.9
E	0.65

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