PART OBSOLETE PER PCN 2271 & PCN 2272
NO ALTERNATE PART

Lead-free Green

DESD1P0RFW

LOW CAPACITANCE, ESD PROTECTION DIODE ARRAY

Features

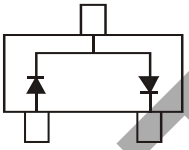
- Low Capacitance
- Small Surface Mount Package
- For ESD Protection of High-Speed Data Lines
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

Mechanical Data

- Case: SOT323
- 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)

SOT323

Top View



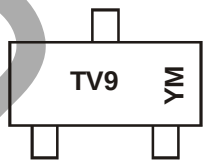
Top View
Internal Schematic

Ordering Information (Notes 5)

Part Number	Qualification	Case	Packaging
DESD1P0RFW-7	Commercial	SOT323	3000/Tape & Reel
DESD1P0RFWQ-7	Automotive	SOT323	3000/Tape & Reel

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See https://www.diodes.com/quality/lead-free/ 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. Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q101 and standard products are electrically and thermally the same, except where specified. For more information, please refer to https://www.diodes.com/quality/.
5. For packaging details, go to our website at http://www.diodes.com.

Marking Information



TV9 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: Y = 2018)
M = Month (ex: 9 = September)

Date Code Key

Year	2011	2012	2013	2014	2015	2016	2017	2018
Code	Y	Z	A	B	C	D	E	F

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°C unless otherwise specified

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Current	I_{PP}	15	A	8/20µs (Notes 6 & 7)
ESD Protection – Contact Discharge	$V_{ESD\_Contact}$	±30	kV	Standard IEC 61000-4-2(Note 7)
ESD Protection – Air Discharge	V_{ESD_Air}	±30	kV	Standard IEC 61000-4-2(Note 7)

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 8)	P_D	200	mW
Thermal Resistance Junction to Ambient Air (Note 8)	$R_{\Theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic (Note 6)	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Working Voltage	V_{RWM}	—	—	70	V	—
Reverse Current	I_{RM}	—	—	100	nA	V_{RM} = 70V
Forward Clamping Voltage (Note 7)	V_{FC}	—	2	6	V	I_{PP} = 3A; per IEC 61000-4-5 (Note 9)
		—	4	8		I_{PP} = 10A; per IEC 61000-4-5 (Note 9)
Capacitance	C_T	— —	1 1.7	1.5 2.5	pF	V_R = 0V, f = 1MHz (Note 10) V_R = 0V, f = 1MHz (Note 11)

Notes:
6. Diodes Short duration pulse test used to minimize self-heating effect.
7. Anti-parallel connection.
8. Device mounted on FR-4 PCB with minimum recommended pad layout.
9. Clamping voltage value is based on an 8 × 20µs peak pulse current (I_{pp}) waveform.
10. Total capacitance line to ground (per diode).
11. Total capacitance line to ground (anti-parallel connection).

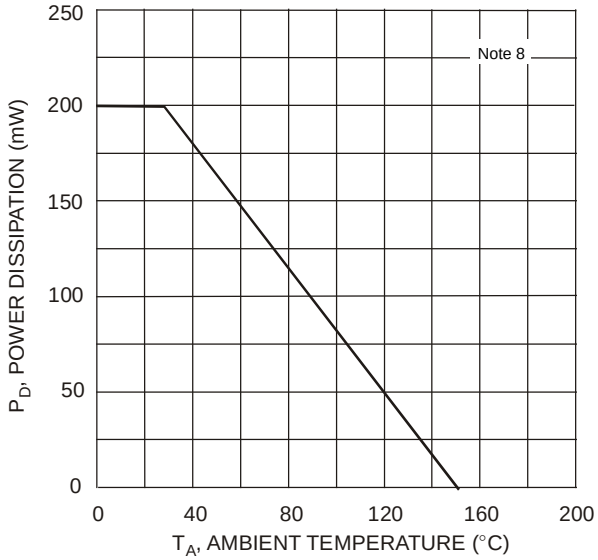


Fig. 1 Power Derating Curve, Total Package

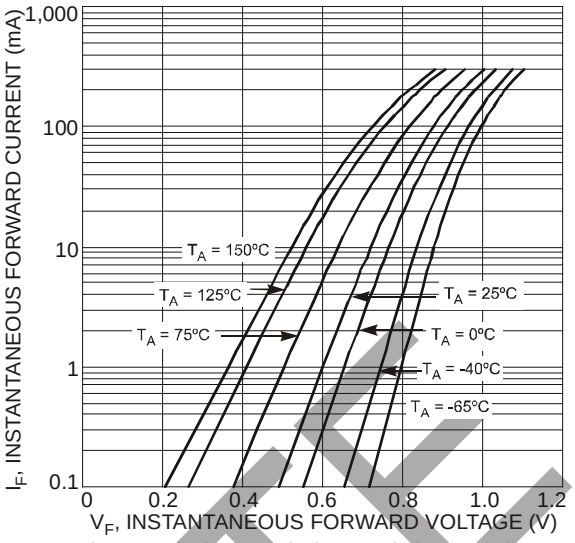


Fig. 2 Typical Forward Characteristics, Per Element

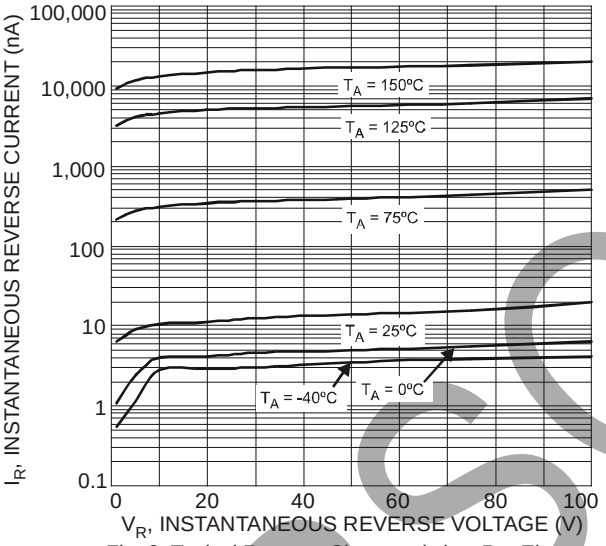


Fig. 3 Typical Reverse Characteristics, Per Element

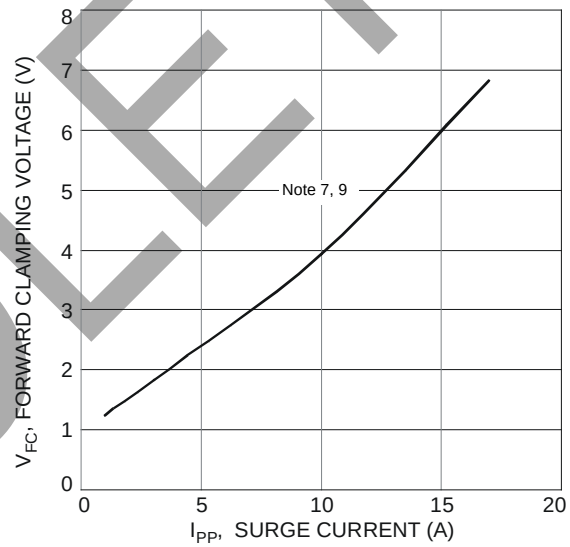
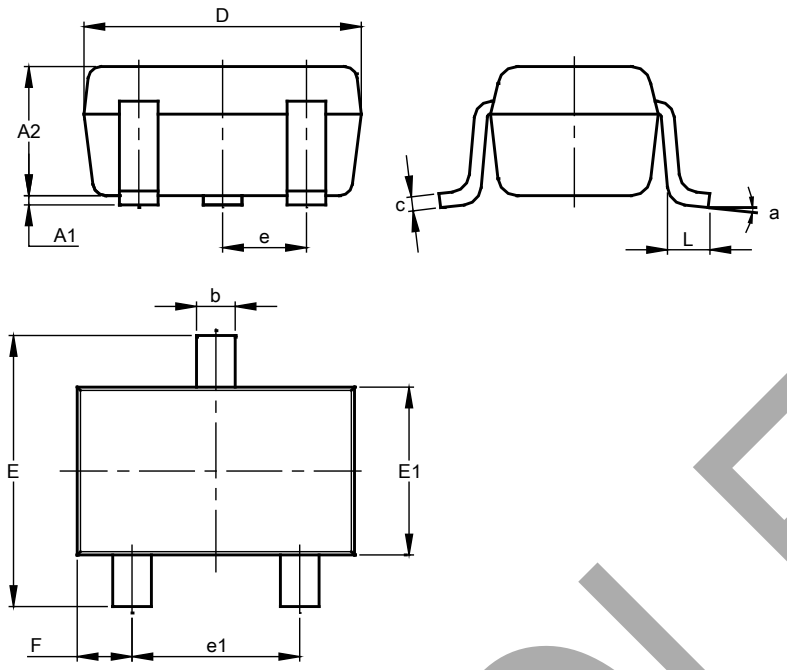


Fig. 4 Typical Forward Clamping Characteristics

Package Outline Dimensions

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

SOT323

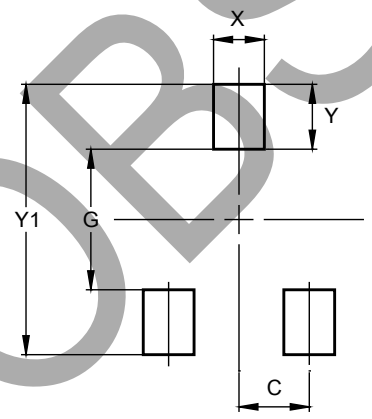


SOT323			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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

SOT323



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500

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