SURFACE MOUNT DATALINE PROTECTION DEVICE

NEW PRODUCT

Features

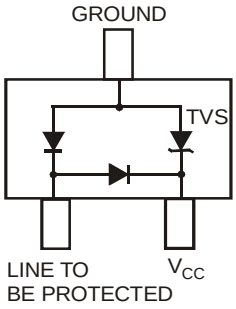
- 300 Watts Peak Pulse Power (tp = 8x20µs)
- Transient Protection for Data Line to IEC61000-4-2 level 4 (ESD), 8kV HBM
  - Contact: Discharge ±30kV
  - Air: Discharge ±30kV
- IEC 61000-4-4 (EFT)
- Low Leakage Current
- Surface Mount Package Ideally Suited for Automated Insertion
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: SOT323
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe) (e3)
- Terminal Connections: See Diagram
- Weight: 0.006 grams (approximate)

SOT323

Top View



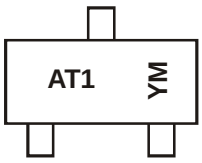
Device Schematic

Ordering Information (Note 4)

Part Number	Case	Packaging
DLPT05W-7	SOT323	3000/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 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.

Marking Information



AT1 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: Z = 2012)
M = Month (ex: 9 = September)

Date Code Key

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

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

NEW PRODUCT

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power (tp = 8x20µs, per Figure 2)	P_{PK}	300	W
Peak Forward Voltage (I_{PP} = 1A, tp = 8x20µs, per Figure 2)	V_{FP}	2.1	V
Diode Peak Repetitive Reverse Voltage	V_{RRM}	75	V

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T		Test Current	Max. Reverse Leakage @ V_{RWM} (Note 6)	Max. Clamping Voltage @ I_{pp} = 1A (Notes 7 & 8)	Max. Peak Pulse Current (Notes 7 & 8)	Typical Total Capacitance (Note 9)
V_{RWM} (V)	Min (V)	Max (V)	I_T (mA)	I_R (µA)	V_C (V)	Ipp(A)	(pF)
5	6.0	—	1.0	20	9.8	17	1.9

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. Clamping voltage value is based on an 8x20µs peak pulse current (I_{pp}) waveform.
8. Measured from line to be protected to ground pin.
9. V_R = 0V, f = 1MHz from line to be protected to ground pin.

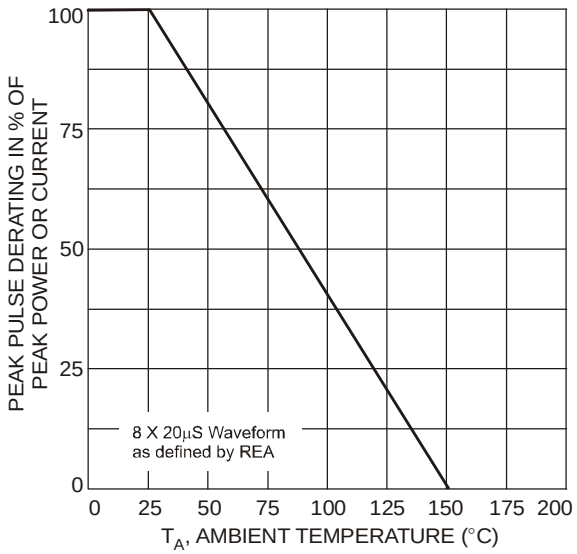


Figure 1. Pulse Derating Curve

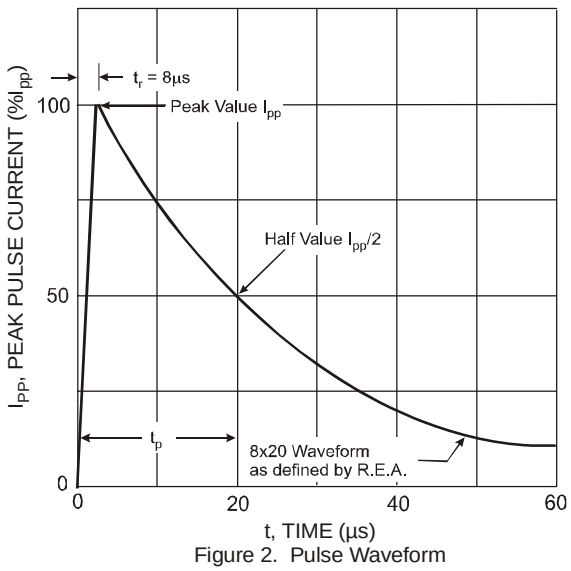


Figure 2. Pulse Waveform

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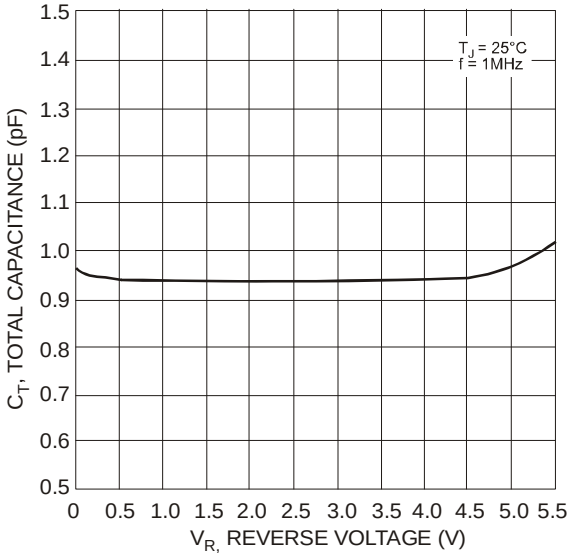

Figure 3. Typical Total Capacitance vs. Reverse Voltage

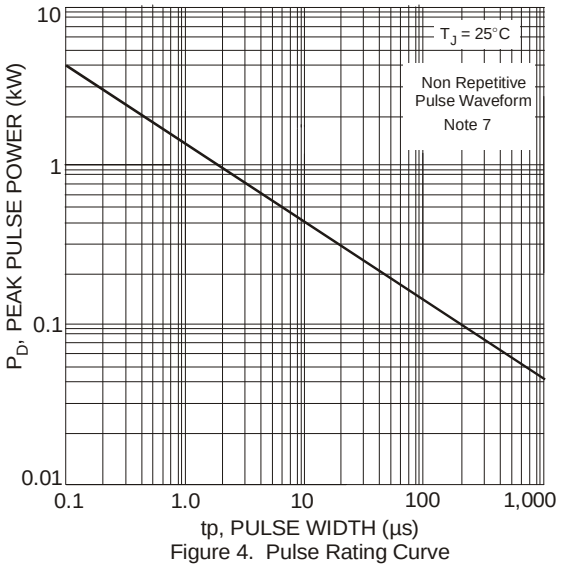

Figure 4. Pulse Rating Curve

Typical Application Schematics

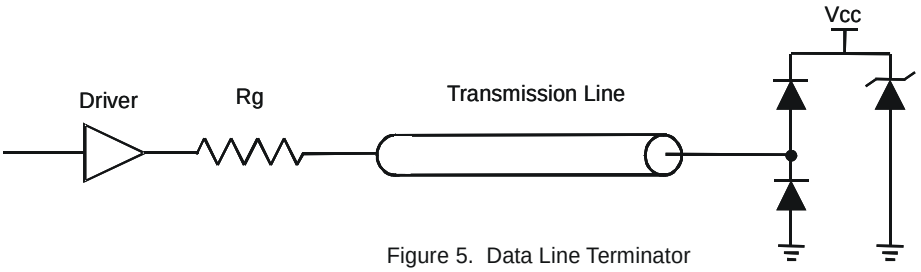

Figure 5. Data Line Terminator

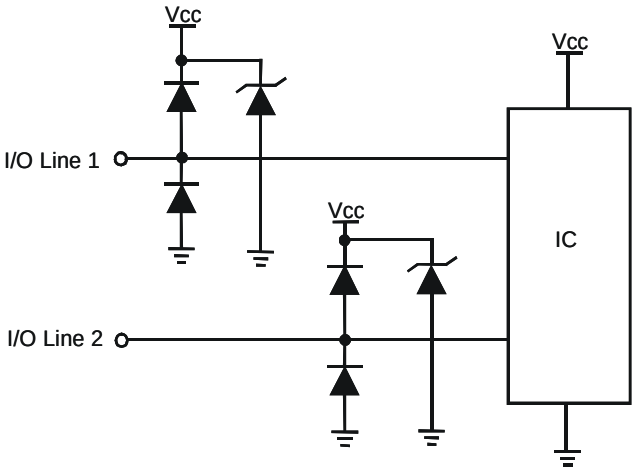

Figure 6. Data Line Protection

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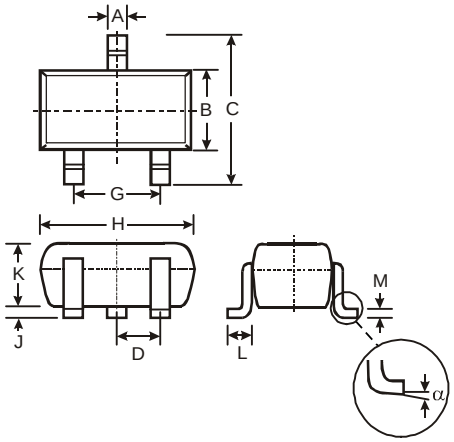
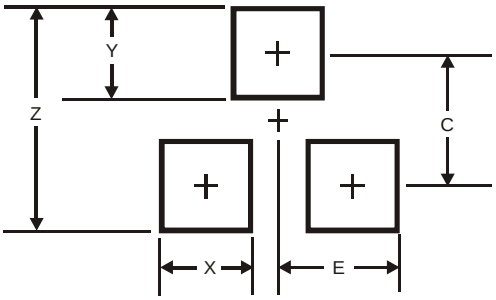
Package Outline Dimensions



SOT323			
Dim	**Min**	**Max**	**Typ**
A	0.25	0.40	0.30
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	-	-	0.65
G	1.20	1.40	1.30
H	1.80	2.20	2.15
J	0.0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.8
X	0.7
Y	0.9
C	1.9
E	1.0

NEW PRODUCT

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