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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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## Features

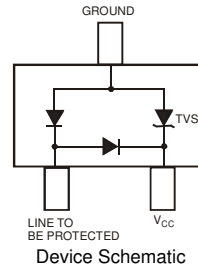
- 300 Watts Peak Pulse Power ( $t_p = 8 \times 20 \mu s$ )
- Transient Protection for data line to IEC61000-4-2 level 4 (ESD), 8kV HBM
  - Contact: Discharge  $\pm 30kV$
  - Air: Discharge  $\pm 30kV$
- IEC 61000-4-4 (EFT)
- Low Leakage Current
- Surface Mount Package Ideally Suited for Automated Insertion
- **Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 4 and 5)**



Top View

## Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Terminal Connections: See Diagram
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.008 grams (approximate)



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

Characteristic	Symbol	Value	Unit
Peak Pulse Power ( $t_p = 8 \times 20 \mu s$ )	$P_{PK}$	300	W
Peak Forward Voltage ( $I_{PP} = 1A$ , $t_p = 8 \times 20 \mu s$ )	$V_{FP}$	2.1	V
Diode Peak Repetitive Reverse Voltage	$V_{RRM}$	75	V

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ C/W$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ C$

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

Reverse Standoff Voltage	Breakdown Voltage $V_{BR} @ I_T$		Test Current	Max. Reverse Leakage @ $V_{RWM}$	Max. Clamping Voltage @ $I_{PP} = 1A$ (Note 3)	Max. Peak Pulse Current (Note 2)	Typical Total Capacitance
	$V_{RWM}$ (V)	Min (V)	Max (V)	$I_T$ (mA)	$I_R$ ( $\mu A$ )	$V_C$ (V)	(A)
5	6.0	—	1.0	20	9.8	17	1.9

- Notes:
1.  $V_R = 0V$ ,  $f = 1MHz$  from line to be protected to ground pin.
  2.  $t_p = 8 \times 20 \mu s$ .
  3. Clamping voltage value is based on an  $8 \times 20 \mu s$  peak pulse current ( $I_{pp}$ ) waveform.
  4. No purposefully added lead. Halogen and Antimony Free.
  5. Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or  $Sb_2O_3$  Fire Retardants.

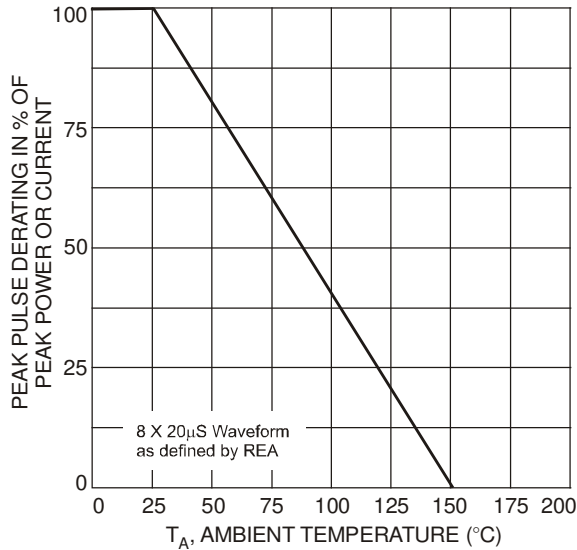


Fig. 1 Pulse Derating Curve

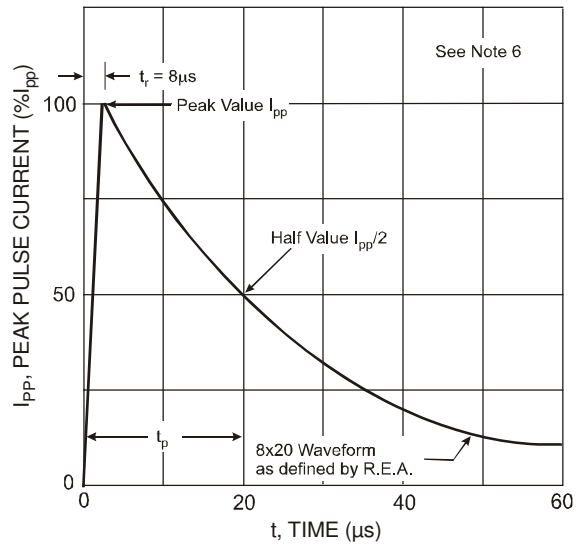


Fig. 2 Pulse Waveform

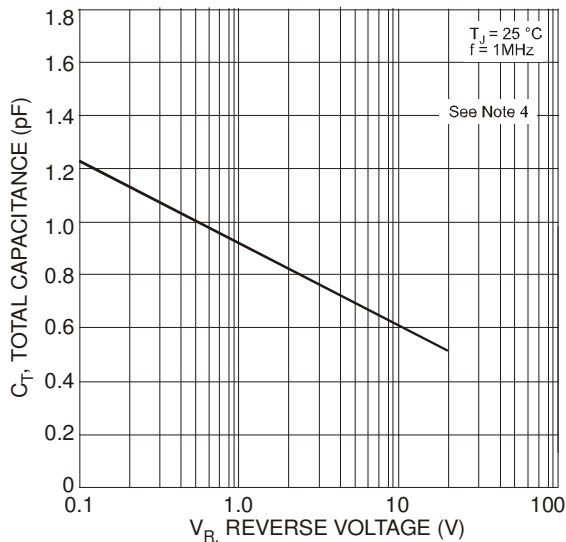


Fig. 3 Typical Total Capacitance vs. Reverse Voltage

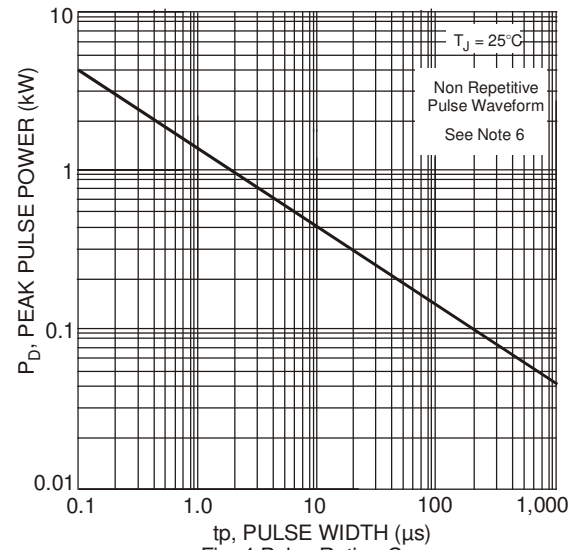


Fig. 4 Pulse Rating Curve

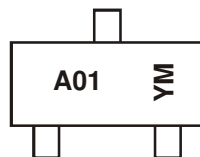
- Notes: 6. Measured from line to be protected to ground pin.  
7. Curves apply to TVS element of device.

**Ordering Information** (Note 8)

Part Number	Case	Packaging
DLPT05-7-F	SOT-23	3000/Tape & Reel

Notes: 8. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



A01 = Product Type Marking Code  
YM = Date Code Marking  
Y = Year (ex: N = 2002)  
M = Month (ex: 9 = September)

Date Code Key

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Code	J	K	L	M	N	P	R	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

**Typical Application Schematics**

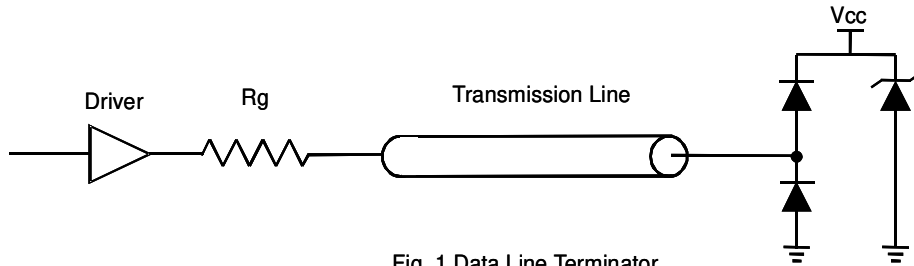


Fig. 1 Data Line Terminator

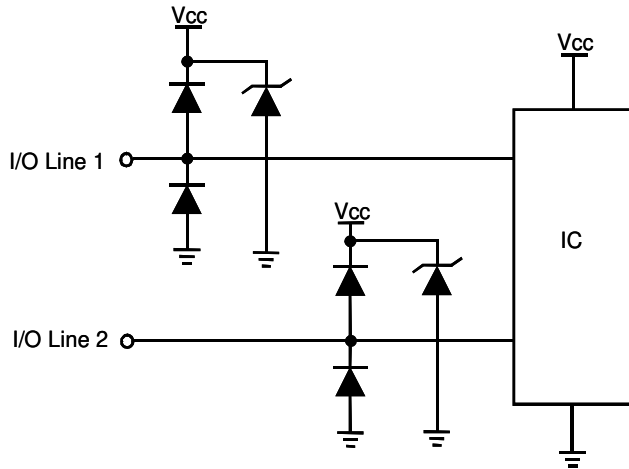
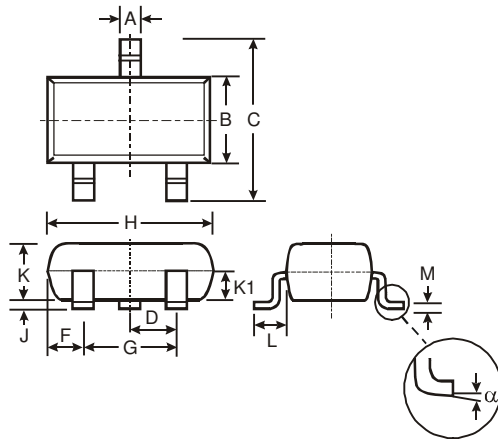


Fig. 2 Data Line Protection

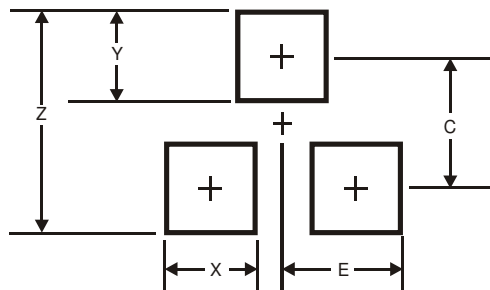
**Package Outline Dimensions**



SOT-23			
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	0.903	1.10	1.00
K1	-	-	0.400
L	0.45	0.61	0.55
M	0.085	0.18	0.11
$\alpha$	0°	8°	-

All Dimensions in mm

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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