

## Features

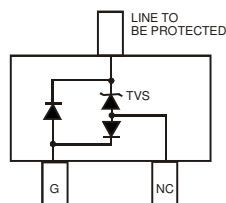
- 300 Watts Peak Pulse Power (tp = 8x20µs)
- Transient Protection for Data, Signal, and VCC Bus to IEC61000-4-2 Level 4 (ESD) and IEC 61000-4-4 (EFT)
- Low Capacitance, typ. 1.6pF
- Low Leakage Current
- Unidirectional Configuration
- Surface Mount Package Ideally Suited for Automated Insertion
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## Mechanical Data

- Case: SOT23
- Case Material: Molded Plastic. "Green" Molding Compound. UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish—Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208③
- Weight: 0.008 grams (Approximate)



Top View



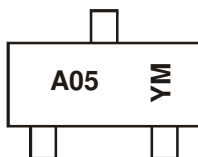
Device Schematic

## Ordering Information (Note 4)

Part Number	Case	Marking	Reel Size	Tape Width	Quantity per Reel
DLP05LC-7-F	SOT-23	A05	7"	8mm	3000

- 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. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



A05 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: G = 2019)  
 M = Month (ex: 9 = September)

### Date Code Key

Year	2010	2011	...	2019	2020	2021	2022	2023	2024	2025
Code	X	Y	...	G	H	I	J	K	L	M

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
Peak Pulse Power ( $t_p = 8 \times 20 \mu\text{s}$ )	$P_{pk}$	300	W

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	408	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

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

Reverse Standoff Voltage	Breakdown Voltage $V_{BR} @ I_T$		Test Current $I_T$ (mA)	Max. Reverse Leakage @ $V_{RWM}$ $I_R$ ( $\mu\text{A}$ )	Max. Clamping Voltage @ $I_{pp} = 1\text{A}$ (Note 8) $V_C$ (V)	Typical Peak Pulse Current (Note 7) (A)	Typical Total Capacitance (Note 6) (pF)
	$V_{RWM}$ (V)	Min (V)					
5	6.0	—	1.0	20	11.0	17	1.6

- Notes:
- Device mounted on FR-4 PCB pad layout with 2oz Cu traces and with pad dimensions  $1'' \times 1''$ .
  - $V_R = 0\text{V}$ ,  $f = 1\text{MHz}$ .
  - $t_p = 8 \times 20 \mu\text{s}$ .
  - Clamping voltage value is based on an  $8 \times 20 \mu\text{s}$  peak pulse current ( $I_{pp}$ ) waveform.
  - 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  $\text{Sb}_2\text{O}_3$  Fire Retardants.

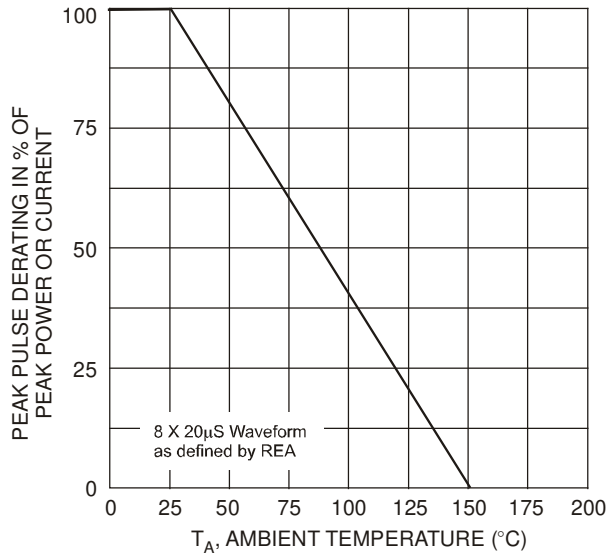


Fig. 1 Pulse Derating Curve

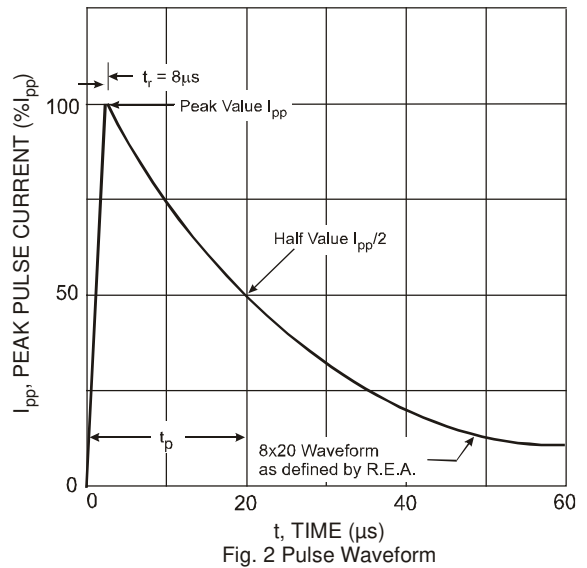


Fig. 2 Pulse Waveform

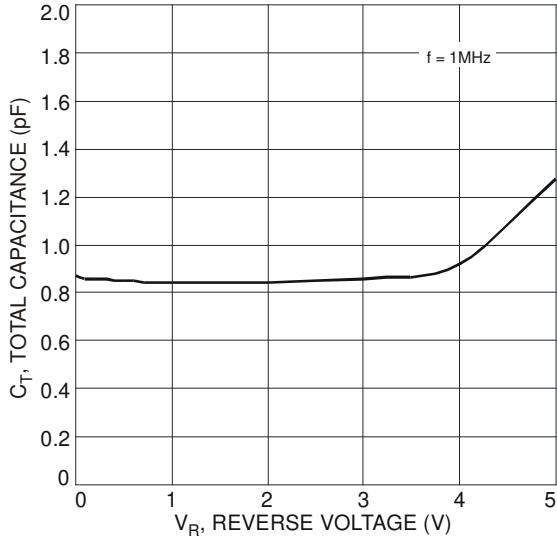


Fig. 3 Typical Total Capacitance

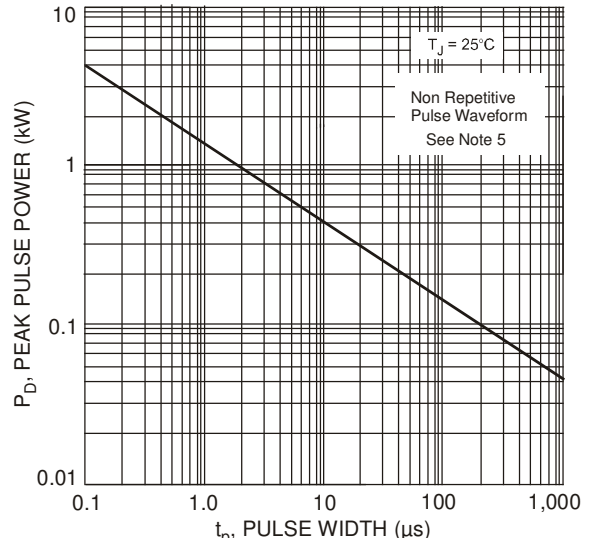
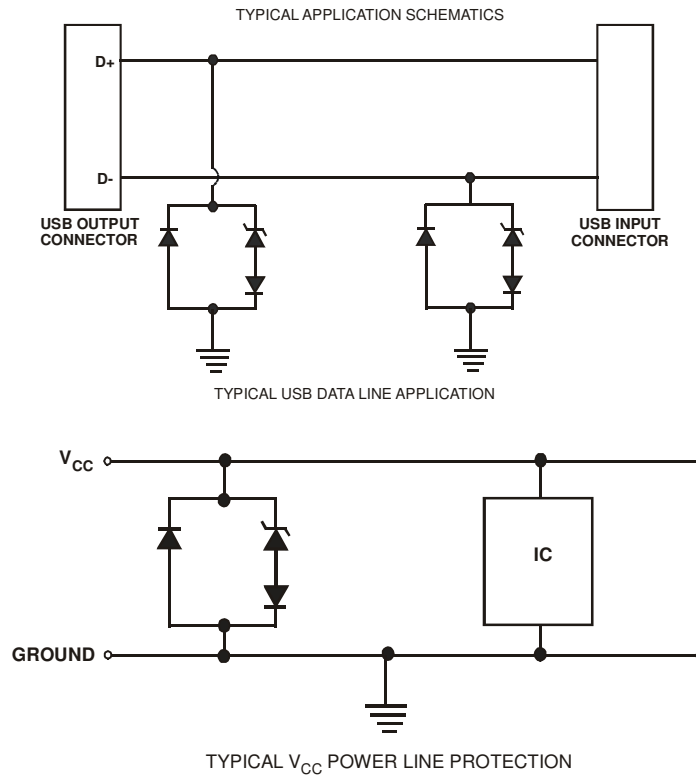


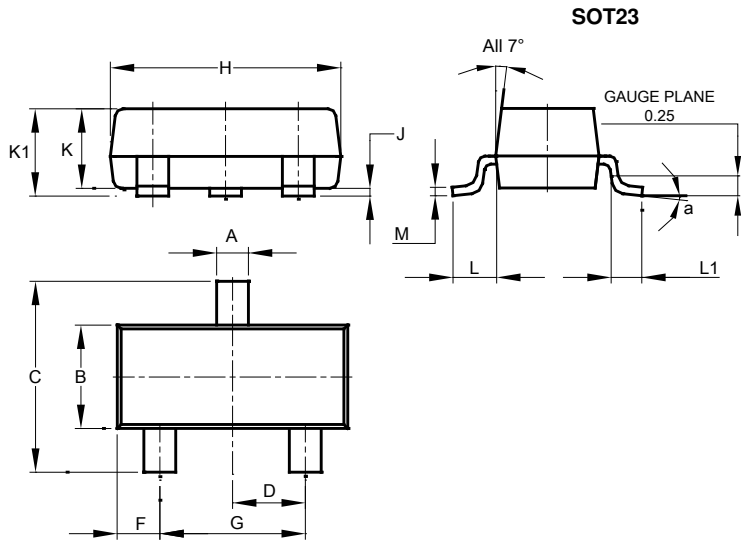
Fig. 4 Pulse Rating Curve

## Typical Application Schemes



**Package Outline Dimensions**

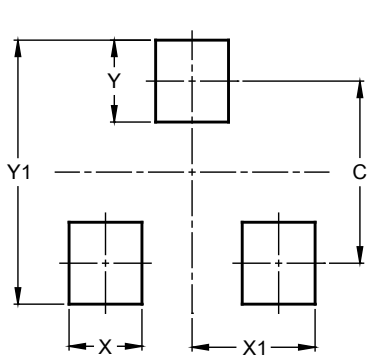
Please see <http://www.diodes.com/package-outlines.html> for the latest version.



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

**Suggested Pad Layout**

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



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

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