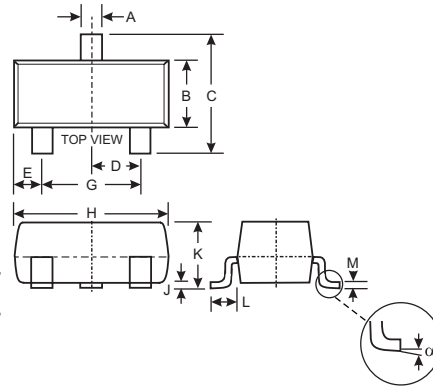


### Features

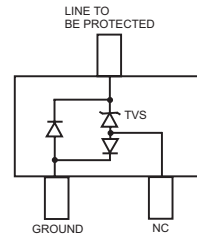
- 300 Watts Peak Pulse Power ( $t_p = 8 \times 20 \mu s$ )
- Transient Protection for data, signal, and  $V_{CC}$  bus to IEC61000-4-2 level 4 (ESD) and IEC 61000-4-4 (EFT)
- Low Capacitance, typ.  $< 2$  pF
- Low Leakage Current
- Unidirectional Configuration
- Surface Mount Package Ideally Suited for Automatic Insertion
- Lead Free/RoHS Compliant (Note 4)



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
$\alpha$	0°	8°
All Dimensions in mm		

### Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Marking: A05 + Date Code, See Sheet 3
- Weight: 0.008 grams (approximate)



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

Characteristic	Symbol	Value	Unit
Peak Pulse Power ( $t_p = 8 \times 20 \mu s$ )	$P_{pk}$	300	W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	286	$^\circ C/W$
Operating and Storage and 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 Junction Capacitance (Note 1)
	$V_{RWM}$ (V)	Min (V)					
5	6.0	—	1.0	20	11.0	17	1.6

- Notes:
1.  $V_R = 0V, f = 1MHz$ .
  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.

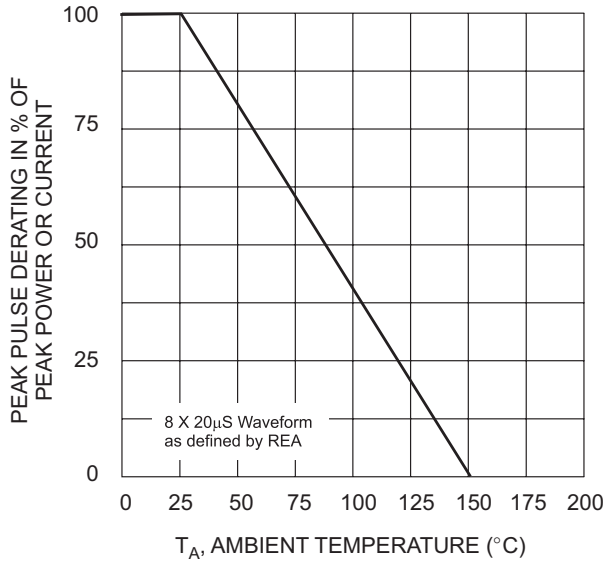


Fig. 1 Pulse Derating Curve

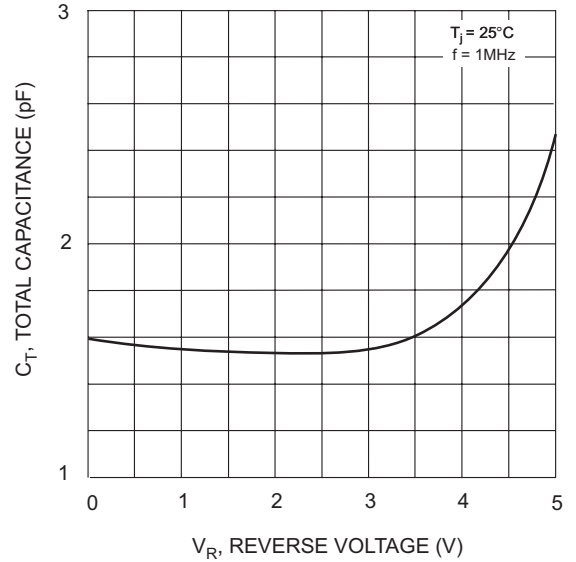


Fig. 2 Typ. Total Capacitance vs Reverse Voltage

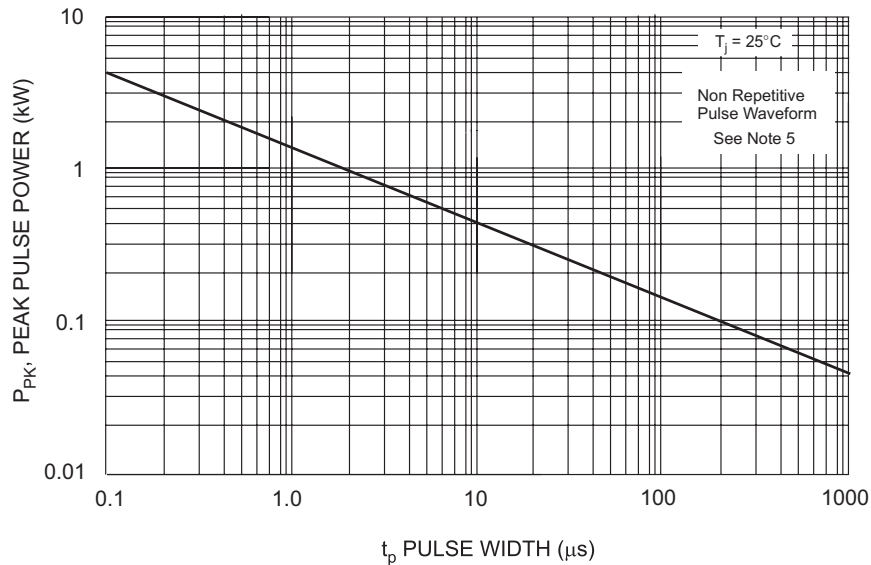


Fig. 3 Pulse Rating Curve

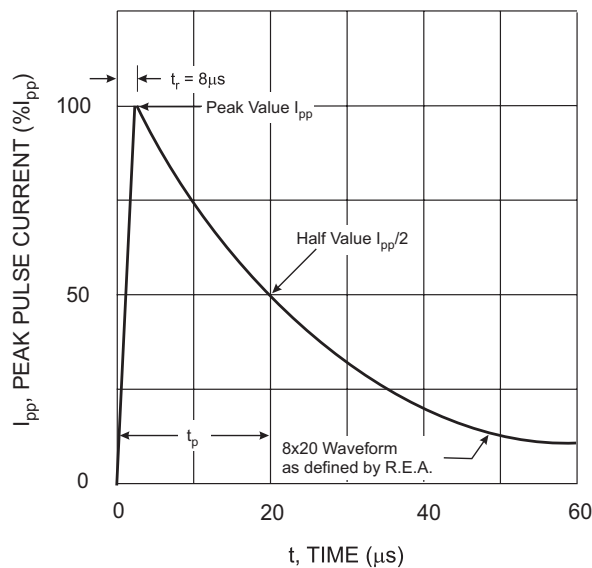


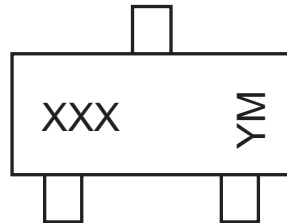
Fig. 4 Pulse Waveform

## Ordering Information (Note 5)

Device	Packaging	Shipping
DLP05LC-7-F	SOT-23	3000/Tape & Reel

Notes: 5. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



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

Date Code Key

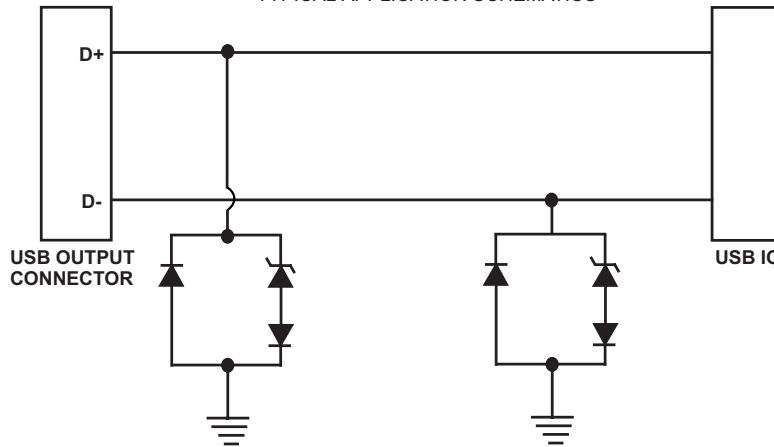
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Code	M	N	P	R	S	T	U	V	W

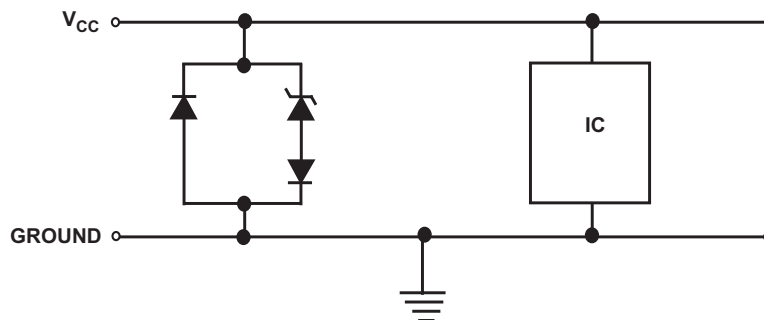
Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

## Typical Application Schematics

TYPICAL APPLICATION SCHEMATICS



TYPICAL USB DATA LINE APPLICATION



TYPICAL V<sub>CC</sub> POWER LINE PROTECTION

**IMPORTANT NOTICE**

Diodes, Inc. and its subsidiaries reserve the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. Diodes, Inc. does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

**LIFE SUPPORT**

The products located on our website at [www.diodes.com](http://www.diodes.com) are not recommended for use in life support systems where a failure or malfunction of the component may directly threaten life or cause injury without the expressed written approval of Diodes Incorporated.