



THE DATASHEET OF DLP05LC-7



Features

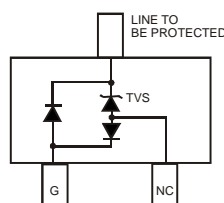
- 300 Watts Peak Pulse Power (tp = 8x20μs)
- Transient Protection for Data, Signal, and VCC Bus to IEC61000-4-2 Level 4 (ESD) and IEC 61000-4-4 (EFT)
- Low Capacitance, typ. 1.6pF
- Low Leakage Current
- Unidirectional Configuration
- Surface Mount Package Ideally Suited for Automated Insertion
- **Totally 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



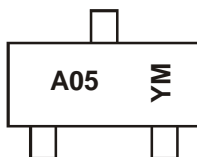
Device Schematic

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 (μA)	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)
	Min (V)	Max (V)					
V_{RWM} (V)	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" x 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 Sb_2O_3 Fire Retardants.

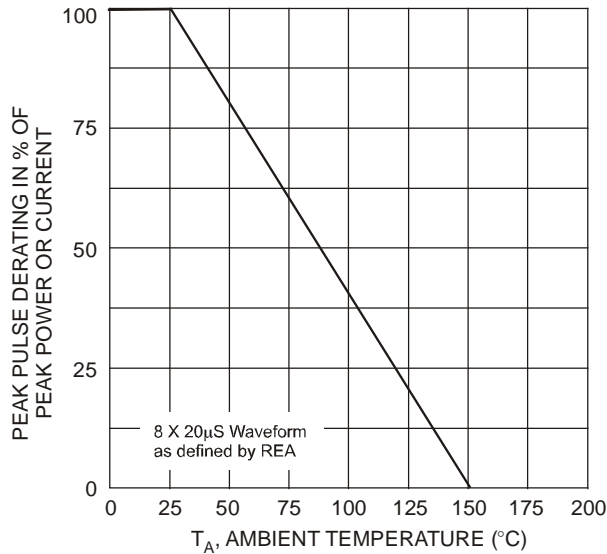


Fig. 1 Pulse Derating Curve

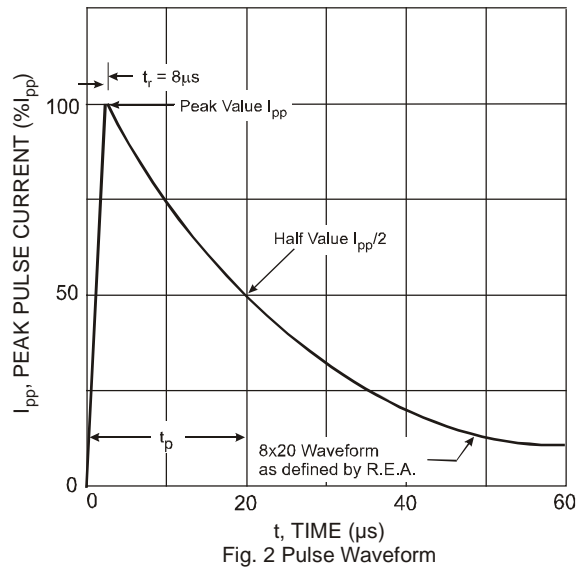


Fig. 2 Pulse Waveform

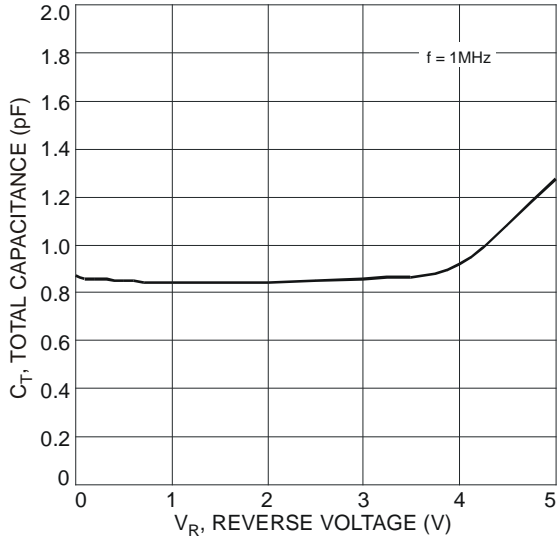


Fig. 3 Typical Total Capacitance

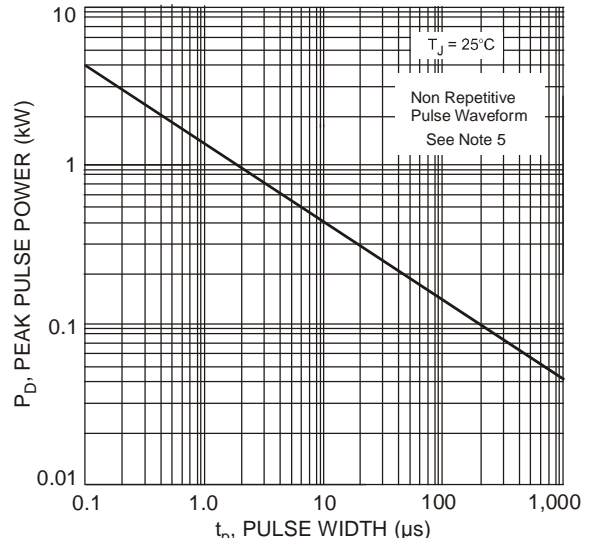
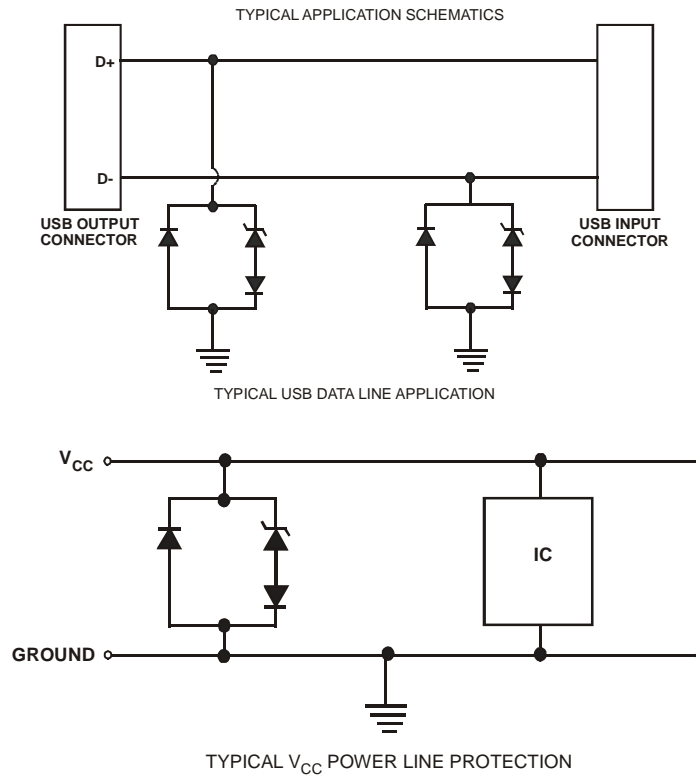


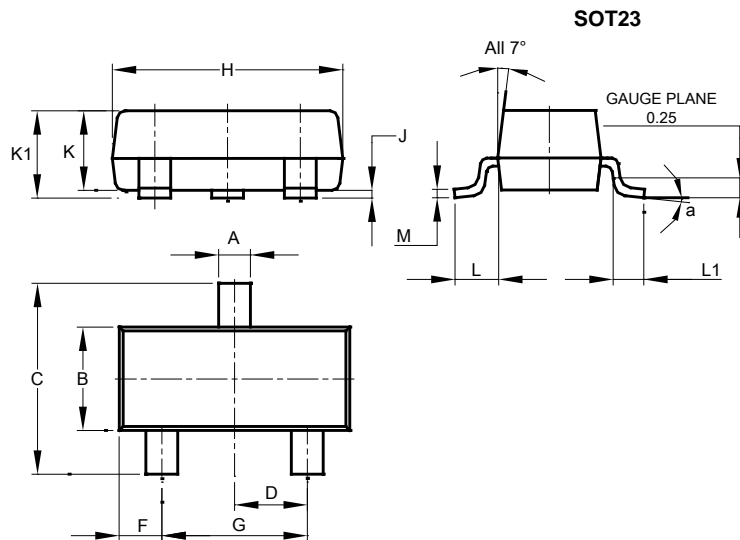
Fig. 4 Pulse Rating Curve

Typical Application Schemes



Package Outline Dimensions

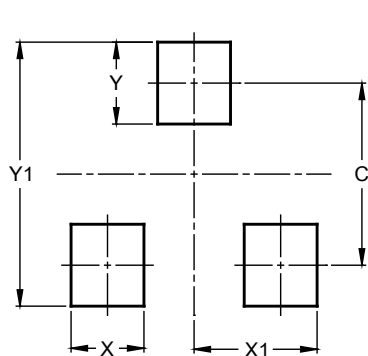
Please see <http://www.diodes.com/package-outlines.html> for the latest version.



SOT23			
Dim	Min	Max	Typ
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	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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



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

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