



## Features

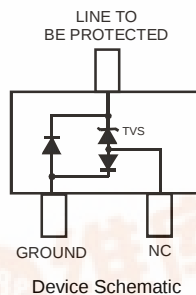
- 350 Watts Peak Pulse Power ( $t_p = 8 \times 20 \mu s$ )
- Transient Protection for data, signal, and  $V_{CC}$  bus to IEC61000-4-2 level 4 (ESD)
- Low Capacitance, typ. = 4pF
- Unidirectional Configuration
- **Lead Free/RoHS Compliant (Note 4)**
- **"Green" Device (Note 5)**
- **Qualified to AEC-Q101 Standards for High Reliability**

## Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic, "Green" Molding Compound, Note 4. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.0083 grams (approximate)



Top View



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

| Characteristic                                 | Symbol   | Value | Unit |
|------------------------------------------------|----------|-------|------|
| Peak Pulse Power ( $t_p = 8 \times 20 \mu s$ ) | $P_{pk}$ | 350   | W    |

## Thermal Characteristics

| Characteristic                                   | Symbol          | Value       | Unit         |
|--------------------------------------------------|-----------------|-------------|--------------|
| Thermal Resistance, Junction to Ambient (Note 6) | $R_{\theta JA}$ | 460         | $^\circ C/W$ |
| 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 @ $I_P = 1A$ (Note 3) | Max. Clamping Voltage $V_C @ I_{PP}$ | Max. Peak Pulse Current (Note 2) | Typical Total Capacitance (Note 1) |
|--------------------------|----------------------------------|---------|--------------|----------------------------------|---------------------------------------------|--------------------------------------|----------------------------------|------------------------------------|
| $V_{RWM} (V)$            | Min (V)                          | Max (V) | $I_T (mA)$   | $I_R (\mu A)$                    | $V_C (V)$                                   | (V)                                  | (A)                              | (pF)                               |
| 3.3                      | 4.0                              | —       | 1.0          | 110                              | 8                                           | 18                                   | 20                               | 4                                  |

- 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.
  5. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  6. Device mounted on FR-4 PCB with pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.

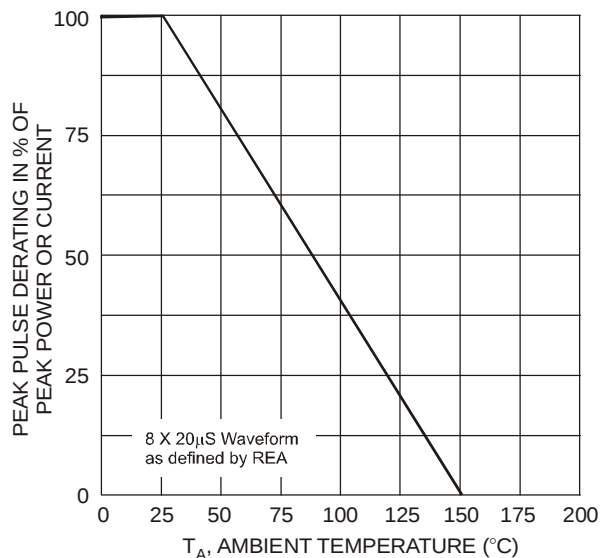


Fig. 1 Pulse Derating Curve

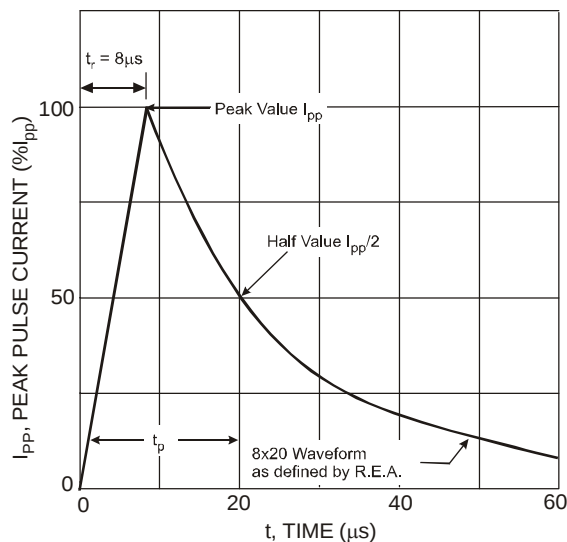


Fig. 2 Pulse Waveform

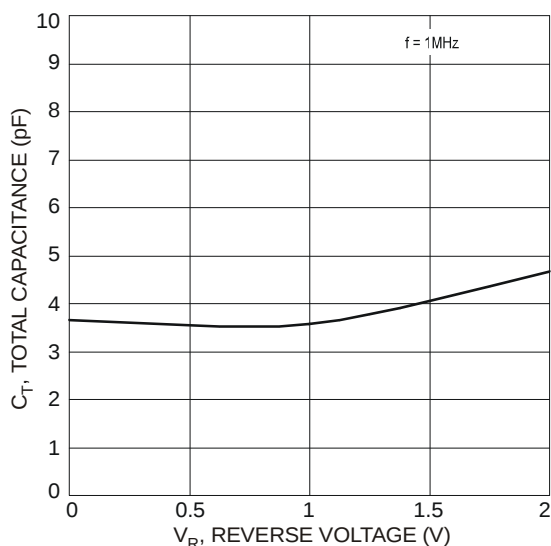


Fig. 3 Typical Total Capacitance vs. Reverse Voltage

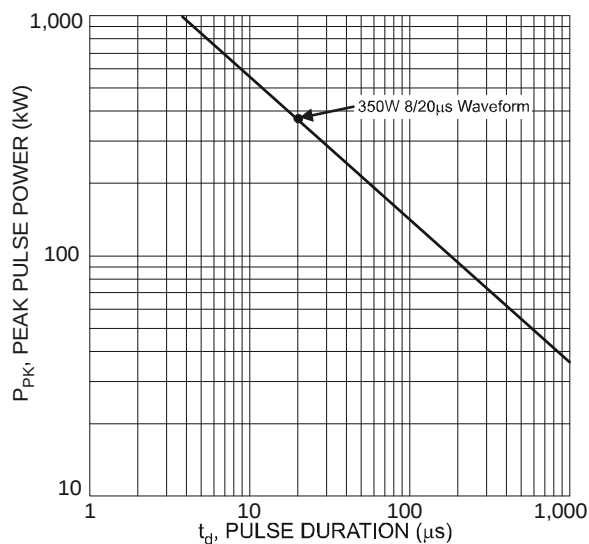


Fig. 4 Max. Peak Pulse Power vs. Pulse Duration

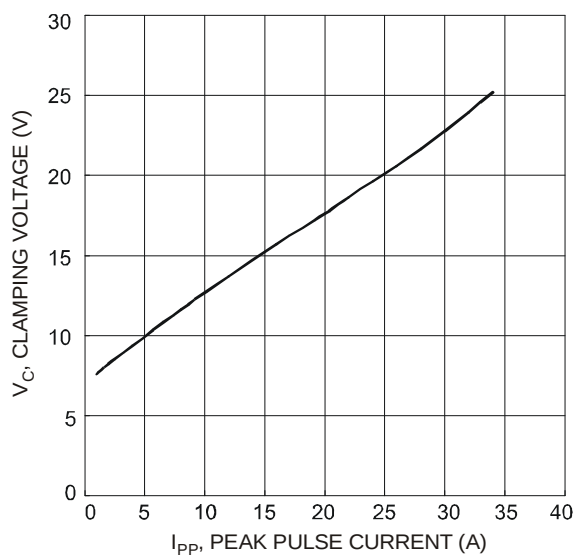


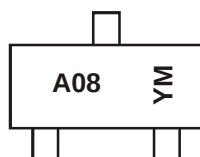
Fig. 5 Typical Clamping Voltage vs. Peak Pulse Current (Note 2)

## Ordering Information (Note 7)

| Part Number | Case   | Packaging        |
|-------------|--------|------------------|
| DLP03LC-7   | SOT-23 | 3000/Tape & Reel |

Notes: 7. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



A08 = Product Type Marking Code  
YM = Date Code Marking  
Y = Year (ex: U = 2007)  
M = Month (ex: 9 = September)

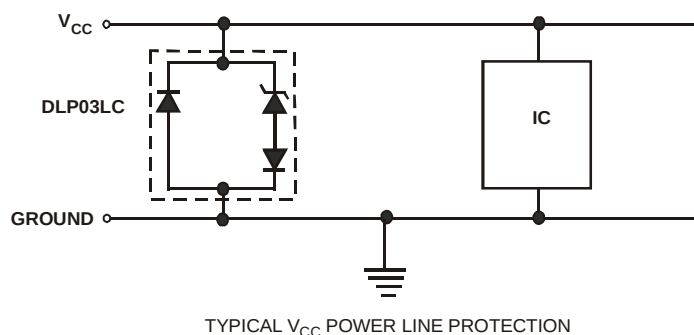
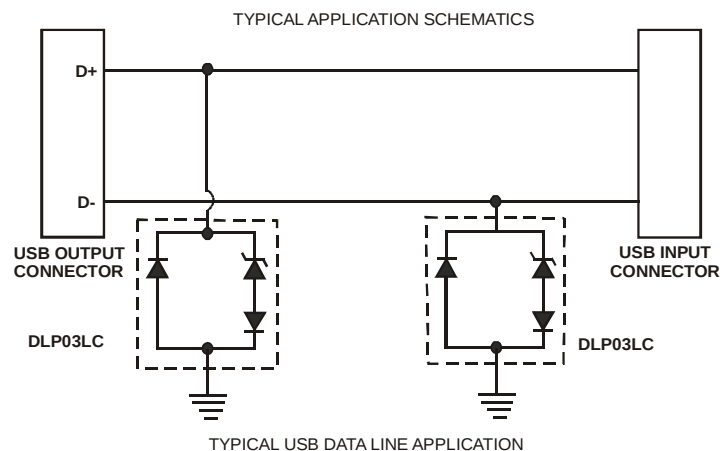
### Date Code Key

| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|------|------|------|------|------|------|------|------|------|------|
| Code | U    | V    | W    | X    | Y    | Z    | A    | B    | C    |

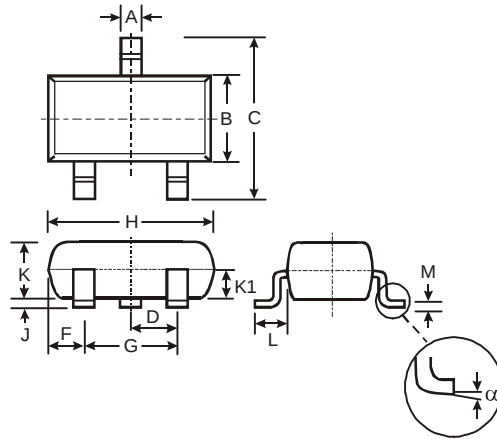
  

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | O   | N   | D   |

## Typical Application Schematics

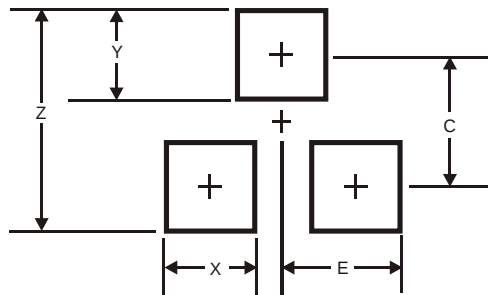


## Package Outline Dimensions



| 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  |
| α                    | 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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