

Product Summary

| V _{BR} MIN | I _{PP} MAX | C _T TYP |
|---------------------|---------------------|--------------------|
| 4.5V | 12A | 70pF |

Description

This new generation TVS is designed to protect sensitive electronics from the damage due to ESD. The combination of small size and high-ESD surge capability makes it ideal for use in portable applications such as cellular phones, digital cameras, and MP3 players.

Applications

- Cellular Handsets
- Portable Electronics
- Computers and Peripheral

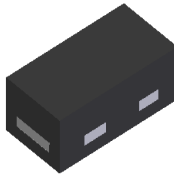
Features

- Provides ESD Protection per IEC 61000-4-2 Standard: Air ± 30 kV, Contact ± 30 kV
- 1 Channel of ESD Protection
- Low Channel Input Capacitance
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- Halogen and Antimony Free. "Green" Device (Note 3)**

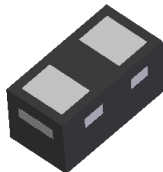
Mechanical Data

- Case: X3-DFN0603-2
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Copper Leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Weight: 0.001 grams (Approximate)

X3-DFN0603-2



Top View



Bottom View



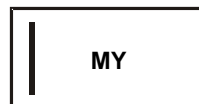
Device Schematic

Ordering Information (Note 4)

| Product | Compliance | Marking | Reel Size (inches) | Tape Width (mm) | Quantity per Reel |
|---------------|------------|---------|--------------------|-----------------|--------------------|
| D3V3M1U2LP3-7 | Standard | MY | 7 | 8 | 10,000/Tape & Reel |

- Notes:
- No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 - See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 - Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 - For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



MY = Product Type Marking Code
Line Denotes Pin 1

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit | Conditions |
|------------------------------------|--------------------------|-------|------|------------------------|
| Peak Pulse Power Dissipation | P _{PP} | 120 | W | 8/20μs, Figure 3 |
| Peak Pulse Current | I _{PP} | 12 | A | 8/20μs, Figure 3 |
| ESD Protection – Contact Discharge | V _{ESD_CONTACT} | ±30 | kV | IEC 61000-4-2 Standard |
| ESD Protection – Air Discharge | V _{ESD_AIR} | ±30 | kV | IEC 61000-4-2 Standard |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Package Power Dissipation (Note 5) | P _D | 250 | mW |
| Thermal Resistance, Junction to Ambient (Note 5) | R _{θJA} | 500 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | °C |

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Conditions |
|----------------------------------|------------------|-----|-----|-----|------|------------------------------------|
| Reverse Standoff Voltage | V _{RWM} | — | — | 3.3 | V | — |
| Channel Leakage Current (Note 6) | I _{RM} | — | — | 2.0 | μA | V _{RWM} = 3.3V |
| Clamping Voltage, IEC 61000-4-5 | V _{CL} | — | — | 8 | V | I _{PP} = 1A, tp = 8/20μs |
| | | — | — | 10 | | I _{PP} = 12A, tp = 8/20μs |
| Breakdown Voltage | V _{BR} | 4.5 | — | — | V | I _R = 1mA |
| Channel Input Capacitance | C _T | — | 70 | 85 | pF | V _R = 0V, f = 1MHz |

- Notes:
- Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes Incorporated's suggested pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.
 - Short duration pulse test used to minimize self-heating effect.

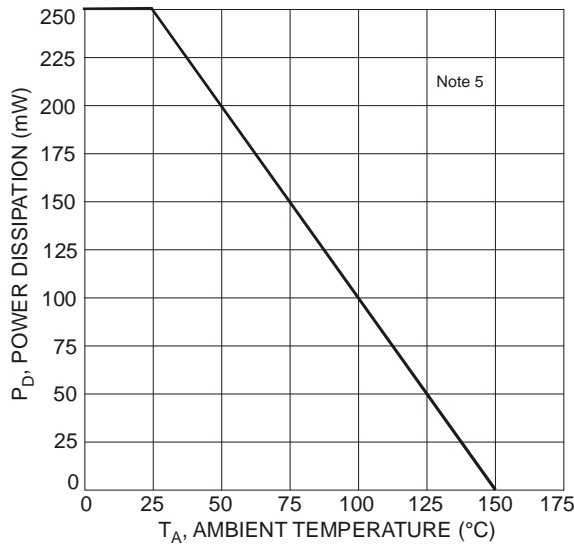


Figure 1 Power Derating Curve

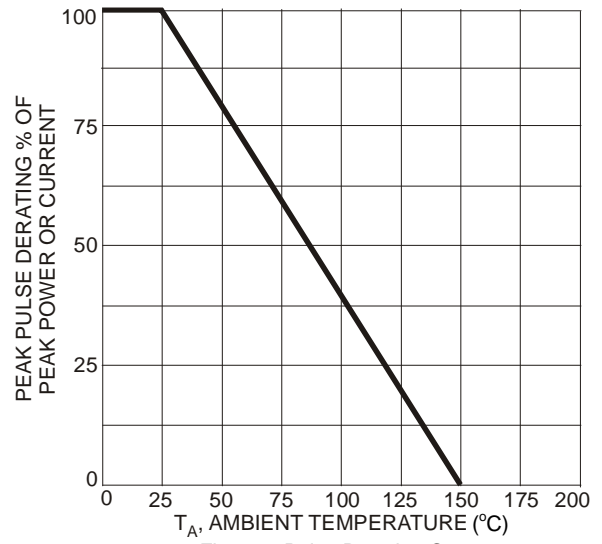
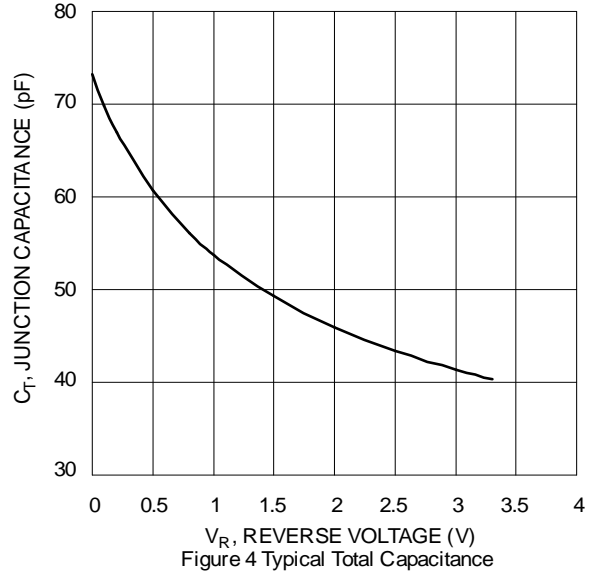
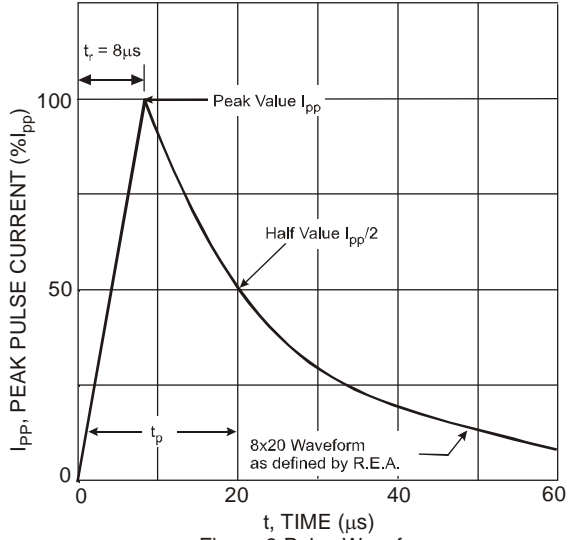


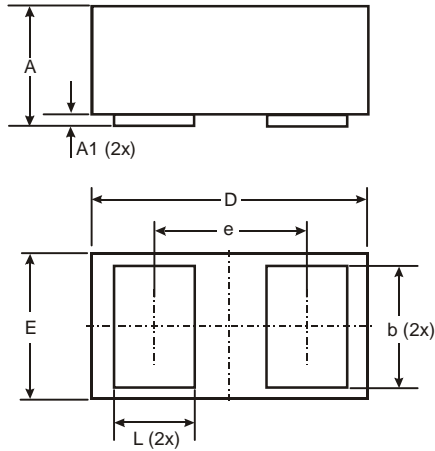
Figure 2 Pulse Derating Curve



Package Outline Dimensions

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

X3-DFN0603-2

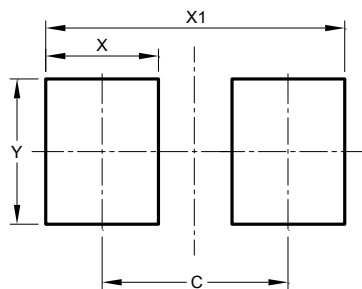


| X3-DFN0603-2 | | | |
|----------------------|-------|-------|-------|
| Dim | Min | Max | Typ |
| A | 0.27 | 0.35 | 0.30 |
| A1 | 0.00 | 0.03 | 0.02 |
| b | 0.19 | 0.29 | 0.24 |
| D | 0.595 | 0.645 | 0.62 |
| E | 0.295 | 0.345 | 0.32 |
| e | - | - | 0.355 |
| L | 0.14 | 0.24 | 0.19 |
| All Dimensions in mm | | | |

Suggested Pad Layout

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

X3-DFN0603-2



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 0.380 |
| X | 0.230 |
| X1 | 0.610 |
| Y | 0.300 |

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