

Features

- Ultra-Small, Low Profile Leadless Surface Mount Package (0.6 x 0.3 x 0.3mm)
- IEC 61000-4-2 (ESD): Air – ±20kV, Contact – ±15kV
- 1 Channel of ESD Protection
- Low Channel Input Capacitance of 0.5pF Typical
- Typically Used at High Speed Ports such as USB 3.0, IEEE1394, Serial ATA, DVI, HDMI, PCI
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**
- **The DIODES™ D5V0F1U2LP3Q is suitable for automotive applications requiring specific change control; this part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**

<https://www.diodes.com/quality/product-definitions/>

Mechanical Data

- Package: X3-DFN0603-2
- Package Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin over Copper Leadframe, Solderable per MIL-STD-202, Method 208 (E3)
- Weight: 0.0002 grams (Approximate)



Ordering Information (Note 4)

Part Number	Package	Marking	Reel Size (inches)	Tape Width (mm)	Packing	
					Qty.	Carrier
D5V0F1U2LP3Q-7	X3-DFN0603-2	TK	7	8	10,000	Tape & Reel

- 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



TK = Product Type Marking Code
 ─ = Assembled in Chengdu
 Bar Denotes Pin 1 or Cathode Side

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

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Current	I _{PP}	1.5	A	8/20μs, Per Figure 3
ESD Protection – Contact Discharge	V _{ESD_Contact}	±15	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	V _{ESD_Air}	±20	kV	Standard IEC 61000-4-2

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 Working Voltage	V _{RWM}	—	—	5.5	V	—
Reverse Current (Note 6)	I _R	—	—	100	nA	V _R = 5.0V
Reverse Breakdown Voltage	V _{BR}	6.0	—	—	V	I _R = 1mA
Reverse Clamping Voltage, Positive Transients (Note 7)	V _{CL}	—	10	12	V	I _{PP} = 1A, t _p = 8/20μs
Dynamic Resistance	R _{DYN}	—	1.4	—	Ω	I _R = 1A, t _p = 8/20μs
Capacitance (Note 8)	C _T	—	0.4	0.65	pF	V _R = 2.5V, f = 1MHz
		—	0.5	—	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.
 - Clamping voltage value is based on an 8 x 20μs peak pulse current (I_{pp}) waveform.
 - Measured from any I/O to GND.

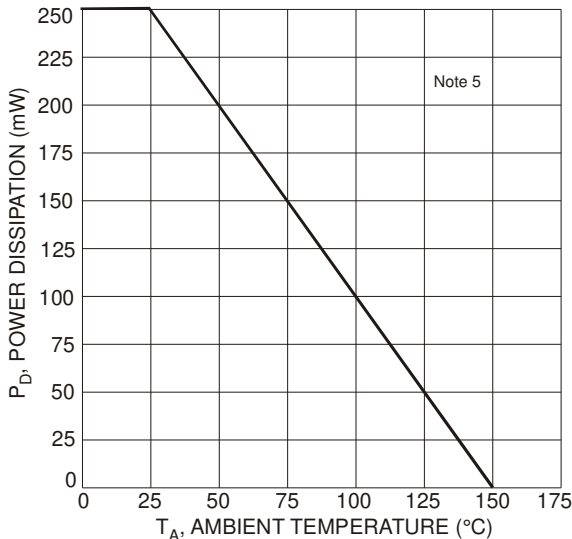


Figure 1 Power Derating Curve

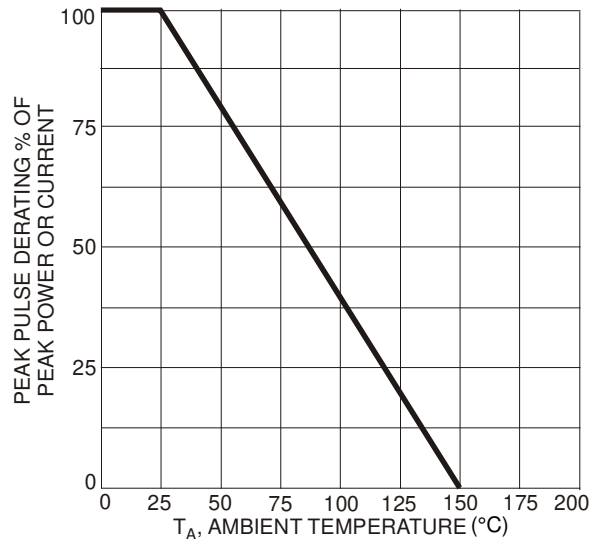
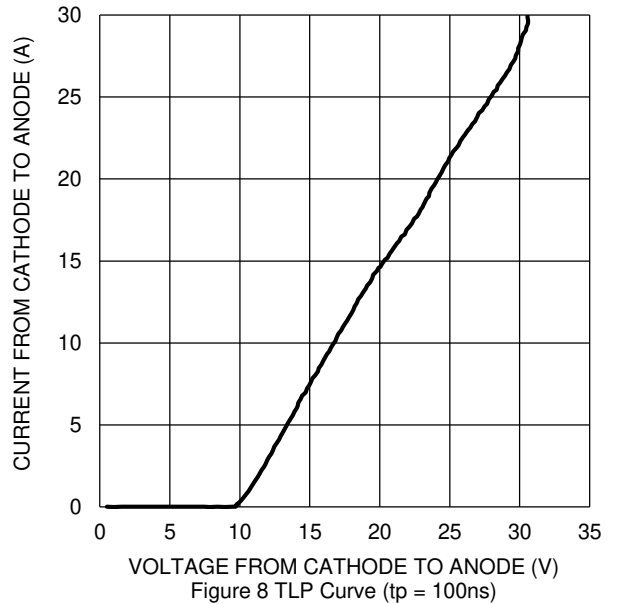
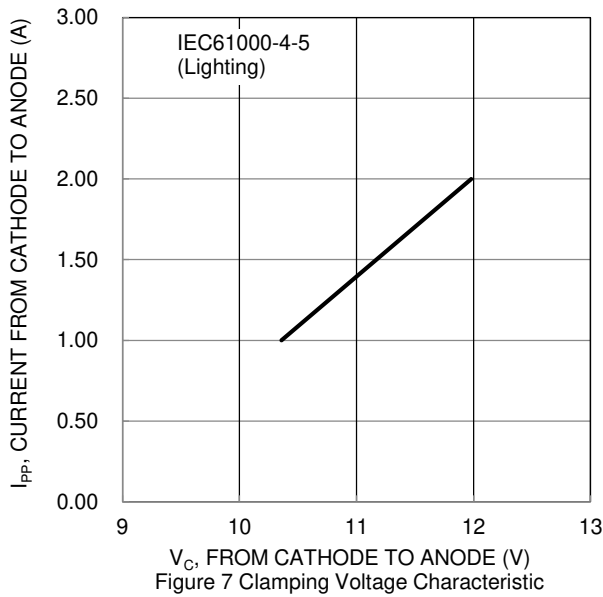
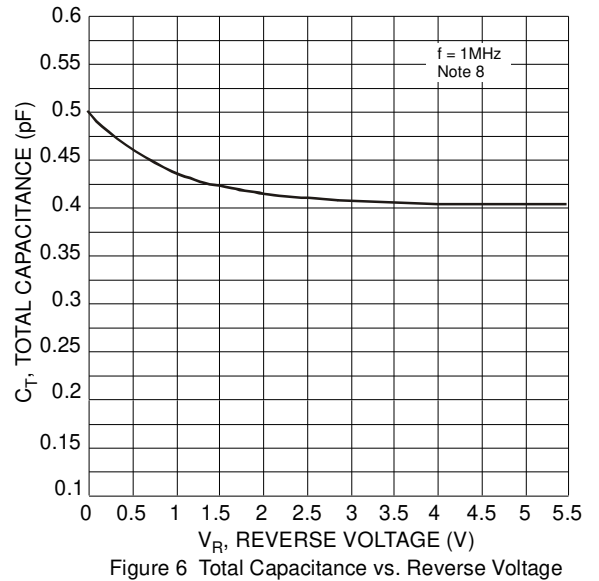
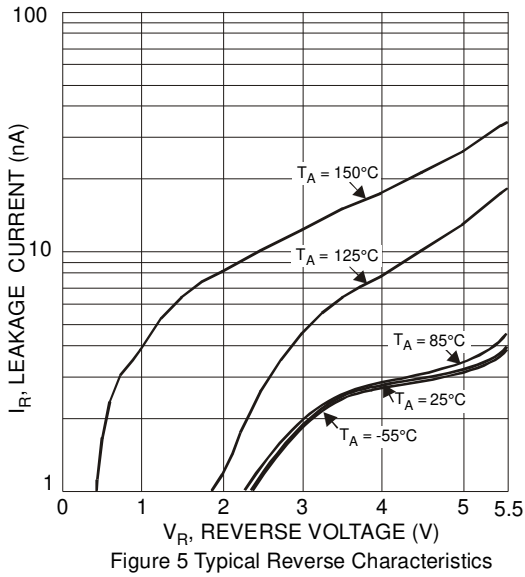
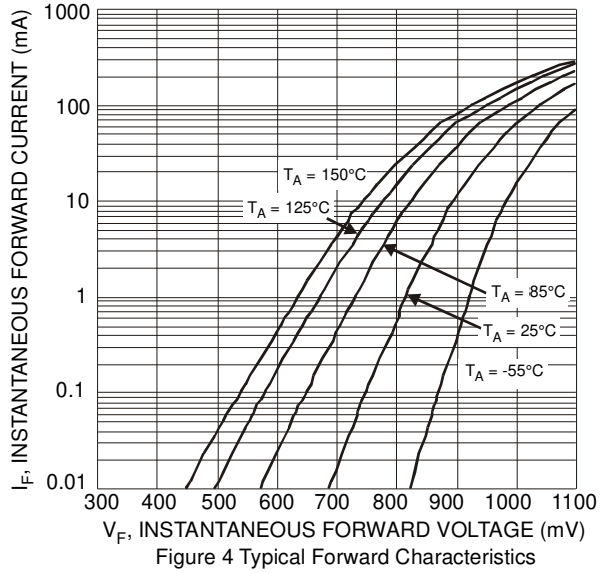
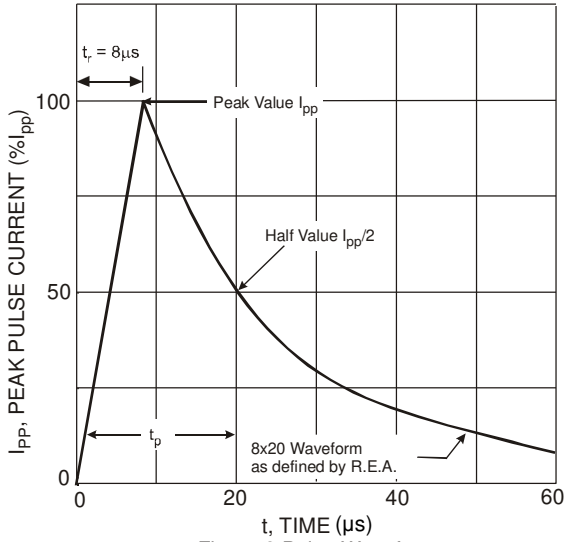


Figure 2 Pulse Derating Curve

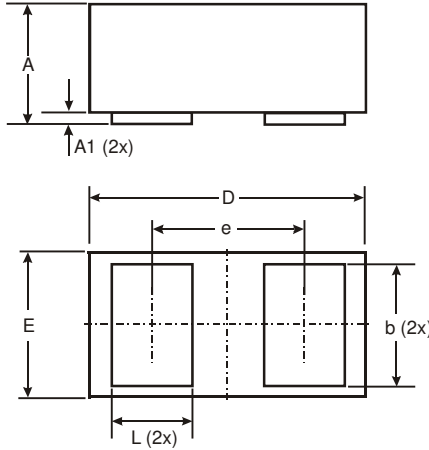


Note: 8. Measured from any I/O to GND.

Package Outline Dimensions

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

X3-DFN0603-2

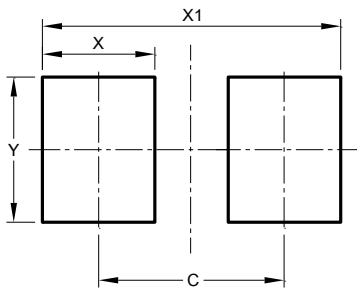


X3-DFN0603-2			
Dim	Min	Max	Typ
A	0.27	0.35	0.30
A1	0.00	0.03	0.02
b	0.19	0.29	0.24
D	0.595	0.645	0.62
E	0.295	0.345	0.32
e	-	-	0.355
L	0.14	0.24	0.19
All Dimensions in mm			

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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