

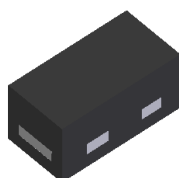
**ULTRA LOW LEAKAGE SURFACE MOUNT FAST SWITCHING DIODE**
**Features**

- Ultra-Small Leadless Surface Mount Package (0.6 x 0.3mm)
- Ultra-Low Profile Package (0.3mm)
- Fast Switching Speed, Fast Reverse Recovery Time
- Ultra-Low Reverse Leakage Current (~ 5nA @  $V_R = 5V$ )
- Very Low Capacitance (<1pF @  $V_R=0V$ )
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

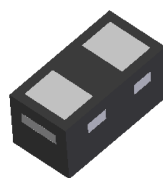
**Mechanical Data**

- 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
- Terminal Connections: Cathode Bar
- Terminals: Finish — Matte Tin Finish over Copper Leadframe (Lead-Free Plating). Solderable per MIL-STD-202, Method 208e3
- Weight: 0.0002 grams (Approximate)

X3-DFN0603-2



Top View



Bottom View

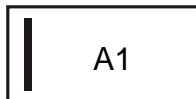
**Ordering Information** (Note 4)

Part Number	Compliance	Case	Packaging
DLLFSD01LP3-7	Standard	X3-DFN0603-2	10,000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](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.
  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**

X3-DFN0603-2



A1 = Product Type Marking Code  
 Bar Denotes Cathode Side

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	V <sub>RM</sub>	85	V
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	80	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	57	V
Forward Continuous Current	I <sub>FM</sub>	300	mA
Average Rectified Output Current	I <sub>O</sub>	100	mA
Non-Repetitive Peak Forward Surge Current @t = 1.0μs	I <sub>FSM</sub>	2.0	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	200	mW
Thermal Resistance Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	500	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	80	—	—	V	I <sub>R</sub> = 100μA
Forward Voltage	V <sub>F</sub>	—	0.62 0.74 0.94	0.7 0.82 1.20	V	I <sub>F</sub> = 1.0mA I <sub>F</sub> = 10mA I <sub>F</sub> = 100mA
Leakage Current (Note 6)	I <sub>R</sub>	—	5	10.0	nA	V <sub>R</sub> = 5V
		—	—	0.1	μA	V <sub>R</sub> = 30V
		—	—	0.2	μA	V <sub>R</sub> = 80V
Total Capacitance	C <sub>T</sub>	—	0.5	2.5	pF	V <sub>R</sub> = 0, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>	—	—	4.0	ns	I <sub>F</sub> = 10mA, V <sub>R</sub> = 6V
		—	—	4.0	ns	I <sub>F</sub> = I <sub>R</sub> = 10mA, I <sub>tr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω

Notes: 5. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.  
6. Short duration pulse test used to minimize self-heating effect.

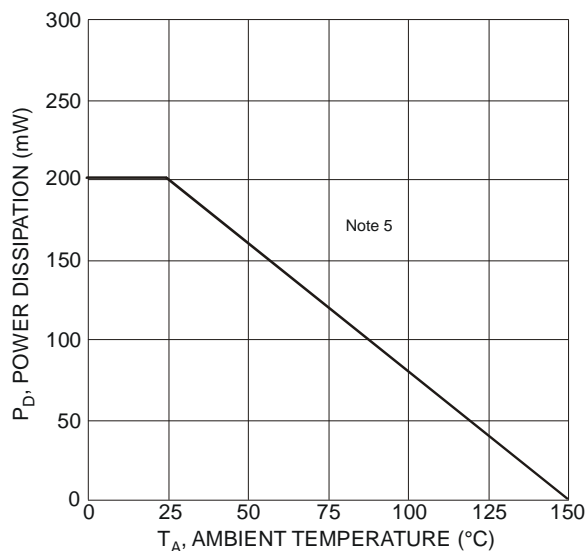


Figure 1 Power Derating Curve, Total Package

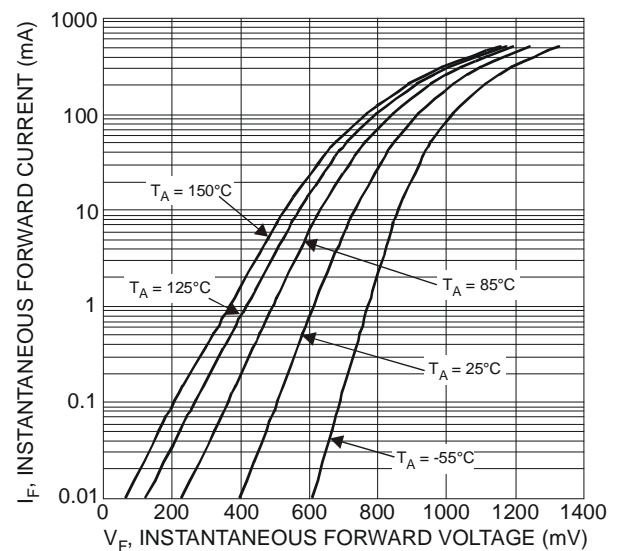
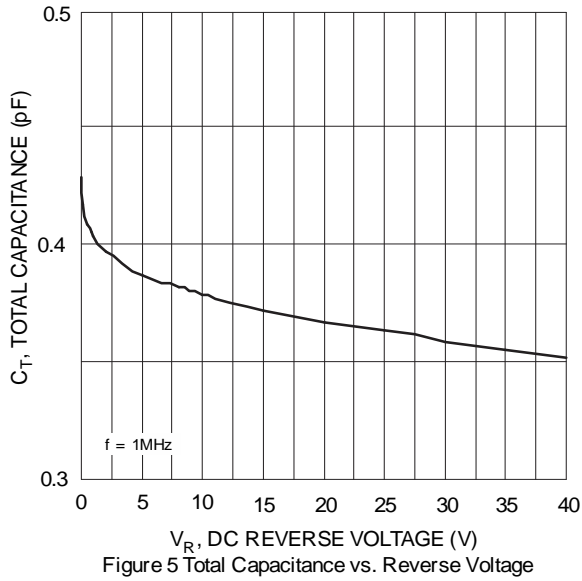
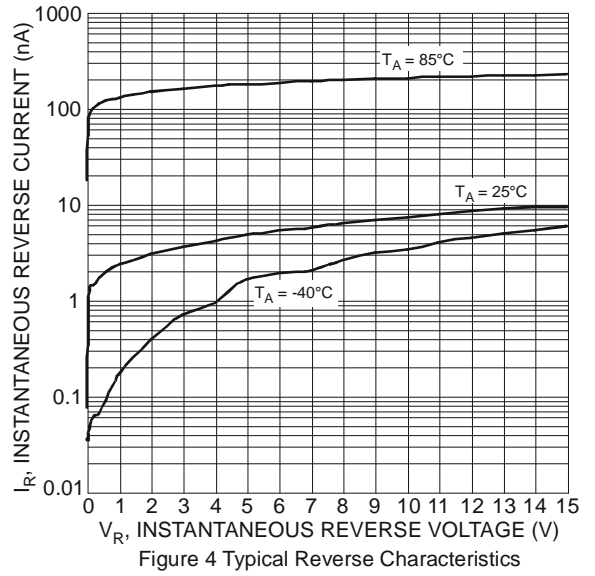
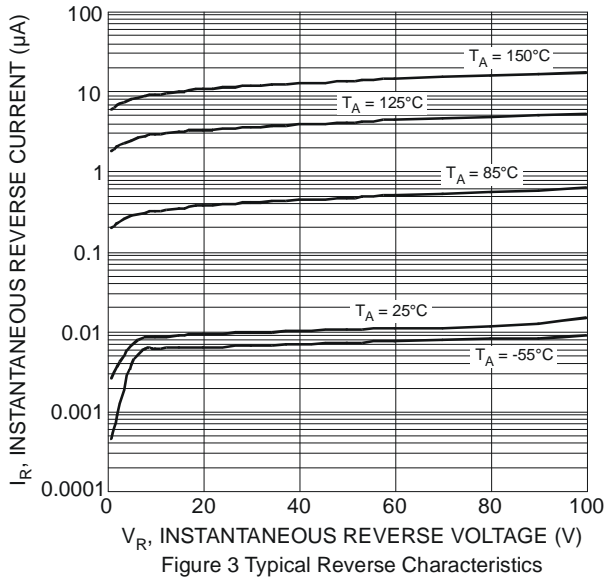
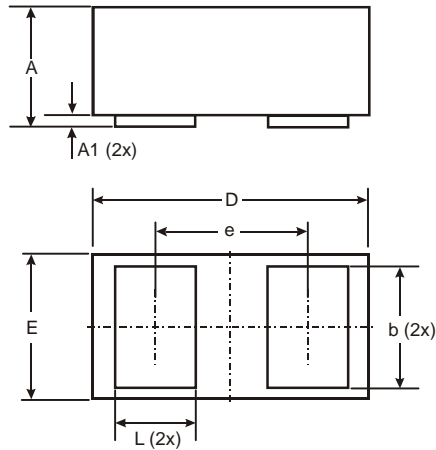


Figure 2 Typical Forward Characteristics



## Package Outline Dimensions

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.

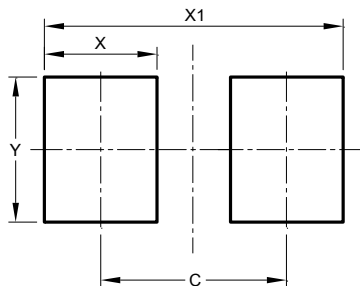


X3-DFN0603-2			
Dim	Min	Max	Typ
<b>A</b>	0.27	0.35	0.30
<b>A1</b>	0.00	0.03	0.02
<b>b</b>	0.19	0.29	0.24
<b>D</b>	0.595	0.645	0.62
<b>E</b>	0.295	0.345	0.32
<b>e</b>	-	-	0.355
<b>L</b>	0.14	0.24	0.19
<b>All Dimensions in mm</b>			

Bottom View

## Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
<b>C</b>	0.380
<b>X</b>	0.230
<b>X1</b>	0.610
<b>Y</b>	0.300

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