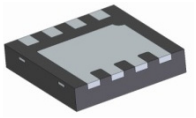
Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- High Forward Surge Current Capability
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

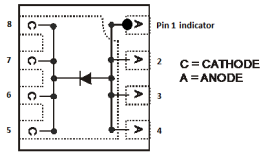
Mechanical Data

- Case: U-DFN3030-8
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - NiPdAu over Copper lead frame. Solderable per MIL-STD-202, Method 208 e4
- Polarity: See Diagram
- Weight: 0.0172 grams (approximate)

U-DFN3030-8



Bottom View



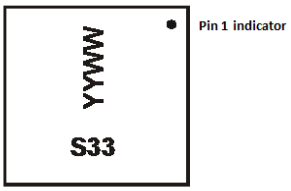
Top View
Schematic and Pin Configuration

Ordering Information (Note 4)

Part Number	Case	Packaging
B3L30LP-7	U-DFN3030-8	3000/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 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



S33 = Product marking code
YYWW = Date code marking
YY = Last digit of year (ex: 13 for 2013)
WW = Week code (01 ~ 53)

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

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	30	V
RMS Reverse Voltage	$V_{R(RMS)}$	21	V
Average Rectified Output Current	I_O	3.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load	I_{FSM}	30	A

Thermal Characteristics

Characteristic		Symbol	Typ	Max	Unit
Thermal Resistance Junction to Soldering Point		$R_{\theta JS}$	—	3	°C/W
Thermal Resistance Junction to Ambient Air	(Note 5)	$R_{\theta JA}$	130	—	°C/W
Power Dissipation	(Note 6) (Note 7) (Note 8)	P_D	— — —	2.5 4.0 4.5	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 Condition
Reverse Breakdown Voltage (Note 9)	$V_{(BR)R}$	30	—	—	V	I_R = 5.0mA
Forward Voltage	V_F	—	0.28	—	V	I_F = 0.5A, T_J = +25°C
		—	0.30	0.35		I_F = 1.0A, T_J = +25°C
		—	0.18	0.29		I_F = 1.0A, T_J = +125°C
		—	0.33	0.40		I_F = 2.0A, T_J = +25°C
		—	0.22	0.37		I_F = 2.0A, T_J = +125°C
		—	0.35	0.45		I_F = 3.0A, T_J = +25°C
		—	0.26	0.42		I_F = 3.0A, T_J = +125°C
Reverse Current (Note 9)	I_R	—	0.27	1.0	mA	T_J = +25°C, V_R = 30V
		—	55	90	mA	T_J = +100°C, V_R = 30V

Notes:
5. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com. T_A = +25°C.
6. Device mounted on FR-4 PCB, 25mm^2 pad area.
7. Device mounted on FR-4 PCB, 75mm^2 pad area.
8. Aluminum PCB with copper mounting pad area of 75mm^2.
9. Short duration pulse test used to minimize self-heating effect.

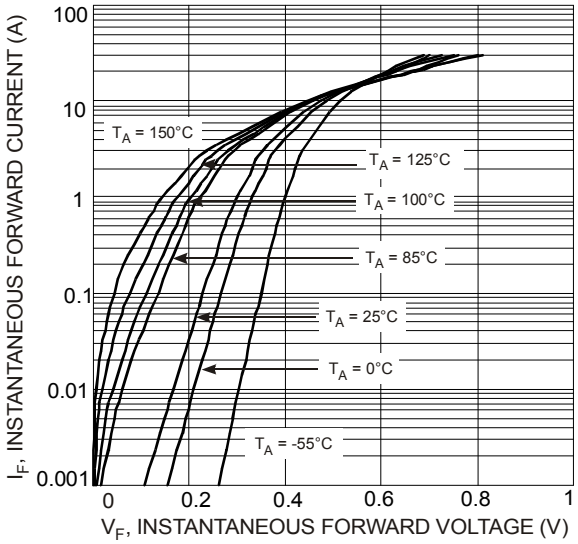


Fig. 1 Typical Forward Characteristics

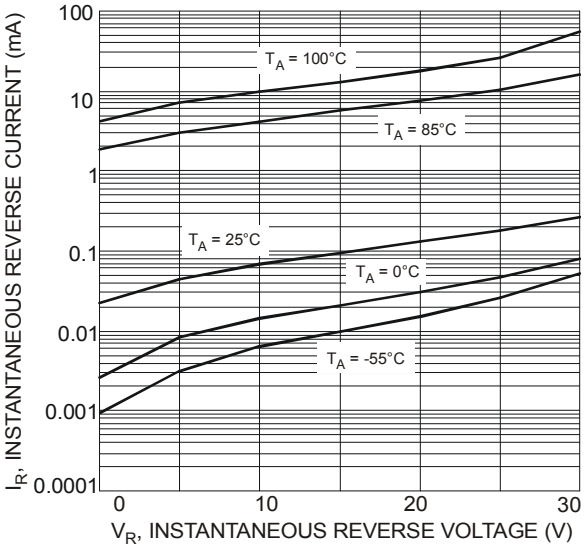


Fig. 2 Typical Reverse Characteristics

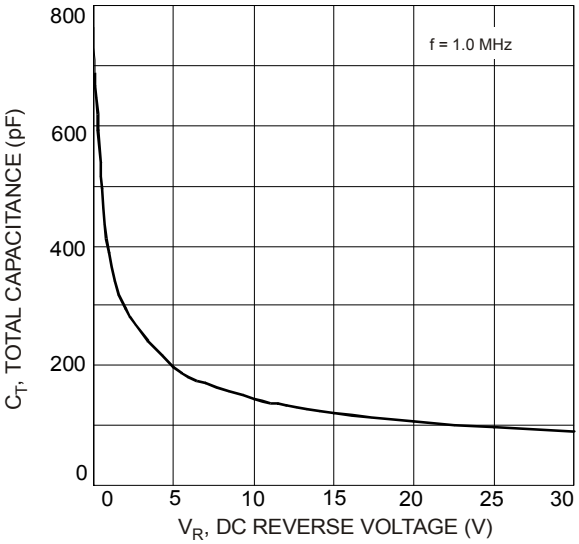


Fig. 3 Total Capacitance vs. Reverse Voltage

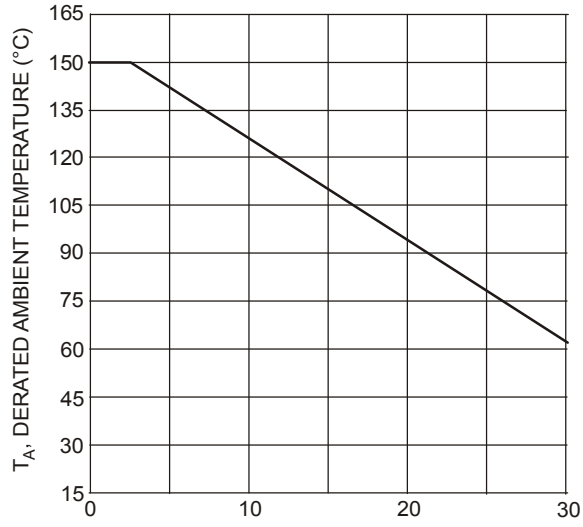
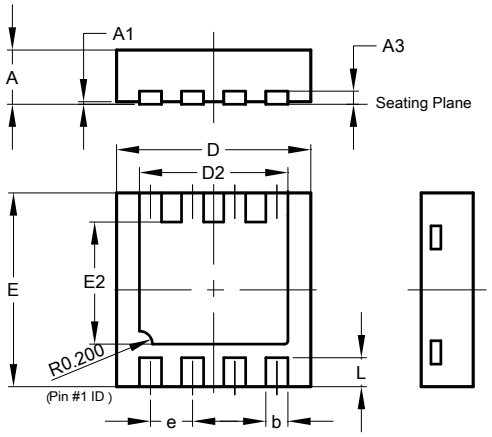


Fig. 4 Operating Temperature Derating

Package Outline Dimensions

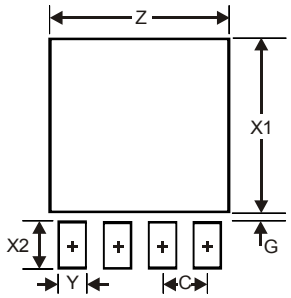
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



U-DFN3030-8			
Dim	**Min**	**Max**	**Typ**
A	0.57	0.63	0.60
A1	0	0.05	0.02
A3	-	-	0.15
b	0.29	0.39	0.34
D	2.90	3.10	3.00
D2	2.19	2.39	2.29
e	-	-	0.65
E	2.90	3.10	3.00
E2	1.64	1.84	1.74
L	0.30	0.60	0.45
All Dimensions in mm			

Suggested Pad Layout

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



Dimensions	Value (in mm)
Z	2.59
G	0.11
X1	2.49
X2	0.65
Y	0.39
C	0.65

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