B3L30LP

3A SCHOTTKY BARRIER RECTIFIER

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Features

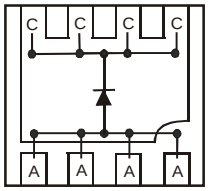
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- High Forward Surge Current Capability
- **Lead Free by Design, RoHS Compliant (Note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

Mechanical Data

- Case: DFN3030-8
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Finish - NiPdAu over Copper lead frame. Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.0172 grams (approximate)



Bottom View



BOTTOM VIEW
Schematic and Pin Configuration

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 2)	$R_{\theta JA}$	130	—	°C/W
Power Dissipation (Note 5) (Note 6) (Note 7)	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 4)	$V_{(BR)R}$	30	—	—	V	I_R = 5.0mA
Forward Voltage	V_F	— — — — — — —	0.28 0.30 0.18 0.33 0.22 0.35 0.26	— 0.35 0.29 0.40 0.37 0.45 0.42	V	I_F = 0.5A, T_J = 25°C I_F = 1.0A, T_J = 25°C I_F = 1.0A, T_J = 125°C I_F = 2.0A, T_J = 25°C I_F = 2.0A, T_J = 125°C I_F = 3.0A, T_J = 25°C I_F = 3.0A, T_J = 125°C
Reverse Current (Note 4)	I_R	— —	0.27 55	1.0 90	mA mA	T_J = 25°C, V_R = 30V T_J = 100°C, V_R = 30V

Notes:
1. No purposefully added lead.
2. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com/datasheets/ap02001.pdf. T_A = 25°C.
3. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
4. Short duration pulse test used to minimize self-heating effect.
5. Device mounted on FR-4 PCB, 25mm^2 pad area.
6. Device mounted on FR-4 PCB, 75mm^2 pad area.
7. Aluminum PCB with copper mounting pad area of 75mm^2.

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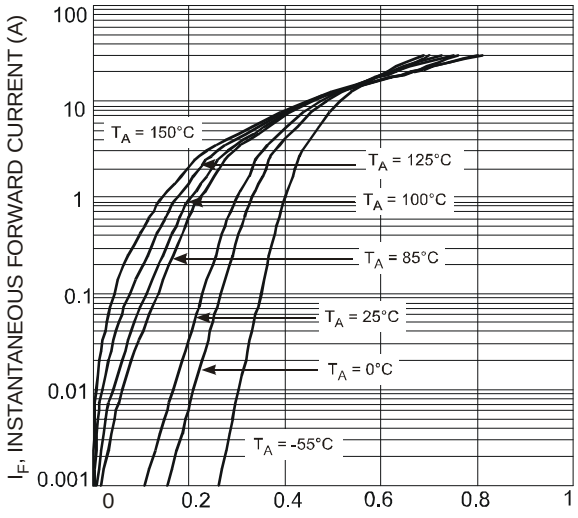


Fig. 1 Typical Forward Characteristics

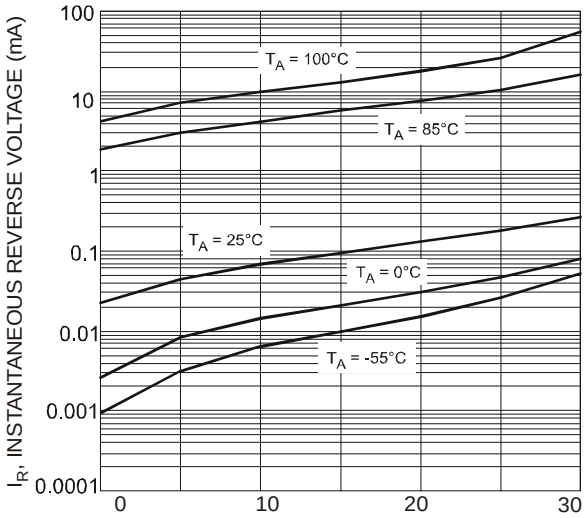


Fig. 2 Typical Reverse Characteristics

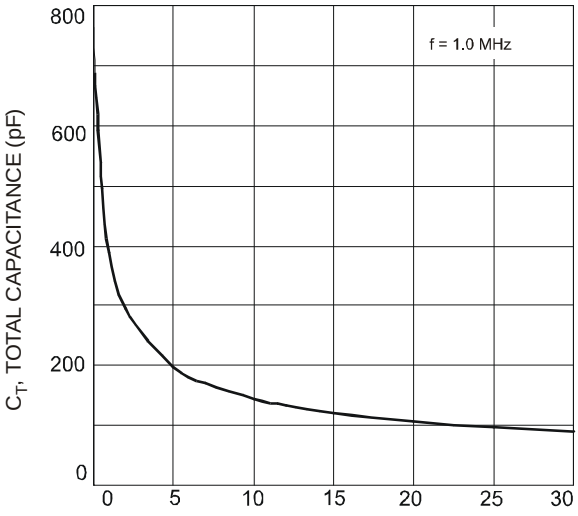


Fig. 3 Total Capacitance vs. Reverse Voltage

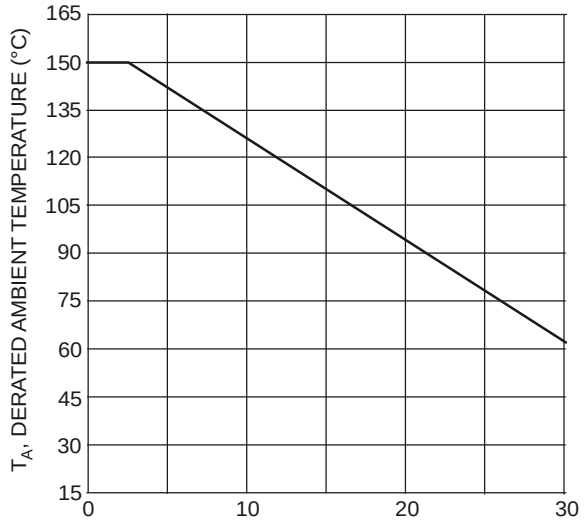


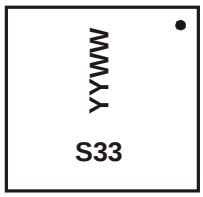
Fig. 4 Operating Temperature Derating

Ordering Information (Note 6)

Part Number	Case	Packaging
B3L30LP-7	DFN3030-8	3000/Tape & Reel

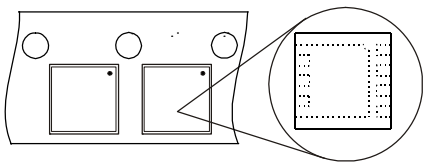
Notes: 6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



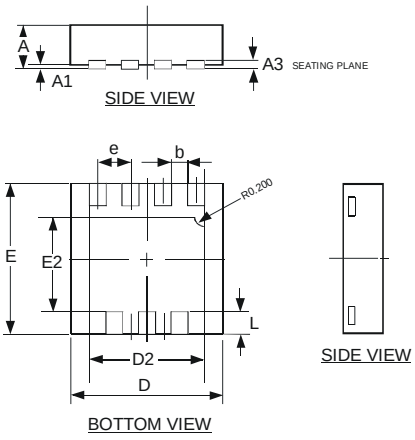
S33 = Product marking code
YYWW = Date code marking
YY = Last digit of year ex: 06 for 2006
WW = Week code 01 to 52

DFN3030-8



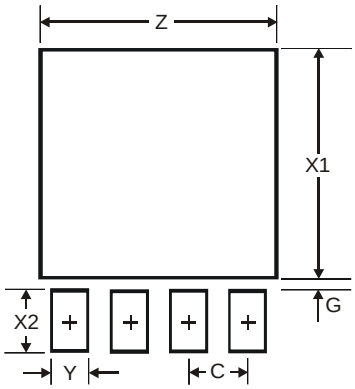
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Package Outline Dimensions



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



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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