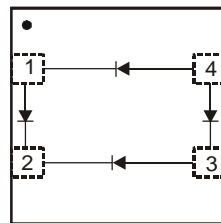


## Features

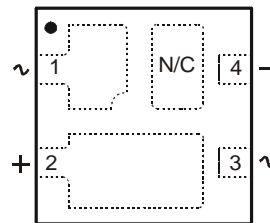
- Ultra Low Leakage Current
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **“Green” Device (Note 3)**

## Mechanical Data

- Case: DFN3030-4
- 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 **(e3)**
- Polarity: See Diagram
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.02 grams (approximate)



Top View  
Device Schematic



Top View  
Pin Configuration

## Maximum Ratings @ $T_A = 25^\circ\text{C}$ 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	$V_{RRM}$	60	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_{RM}$		
Average Rectified Output Current	$I_O$	500	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Per Diode)	$I_{FSM}$	8	A

## Thermal Characteristics

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance Junction to Ambient Air (Note 2)	$R_{\theta JA}$	215	-	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150		$^\circ\text{C}$

## Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage (Per Diode)	$V_F$	-	-	0.42	V	$I_F = 0.25\text{A}, T_J = 25^\circ\text{C}$
			0.43	0.49		$I_F = 0.5\text{A}, T_J = 25^\circ\text{C}$
			0.40	0.46		$I_F = 0.5\text{A}, T_J = 125^\circ\text{C}$
Reverse Current (Note 4) (Per Diode)	$I_R$	-	17	100	$\mu\text{A}$ mA	$V_R = 60\text{V}, T_J = 25^\circ\text{C}$
			2.8	20		$V_R = 60\text{V}, T_J = 125^\circ\text{C}$

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.
  2. Polyimide PCB, 2 oz. copper; minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
  3. Diodes Inc.'s “Green” policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php)
  4. Short duration pulse test used to minimize self-heating effect.

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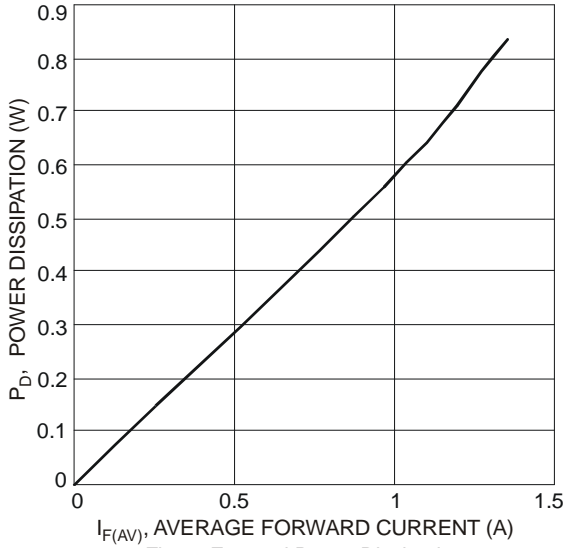


Fig. 1 Forward Power Dissipation

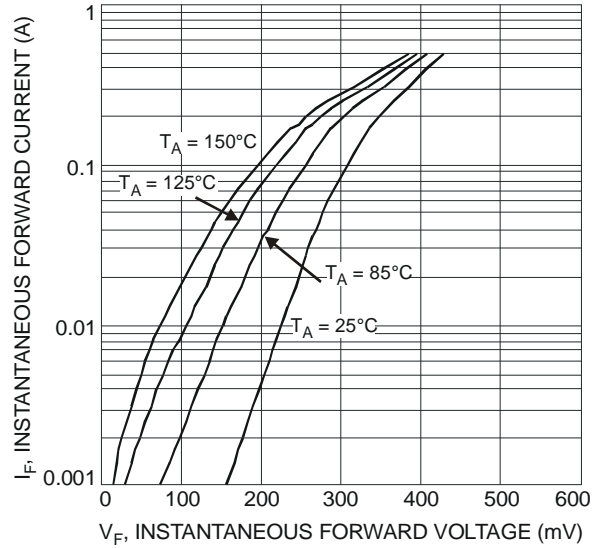


Fig. 2 Typical Forward Characteristics

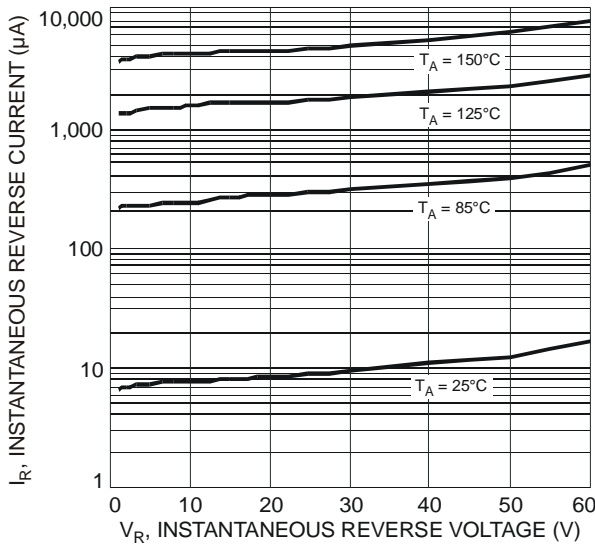


Fig. 3 Typical Reverse Characteristics

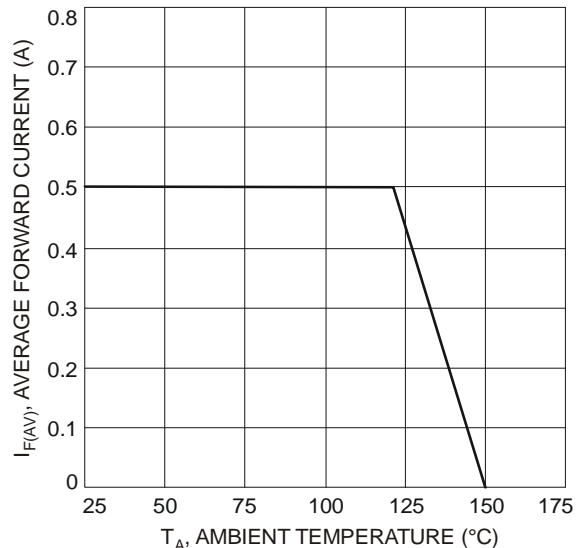


Fig. 4 Forward Current Derating Curve

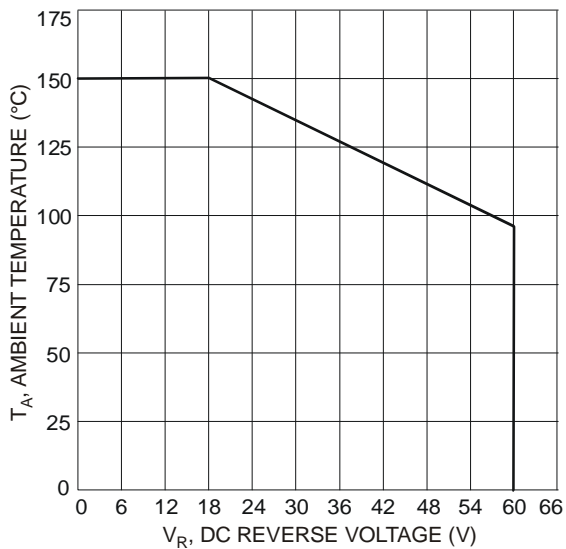


Fig. 5 Operating Temperature Derating

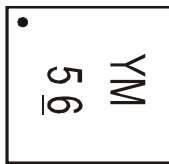
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**Ordering Information** (Note 5)

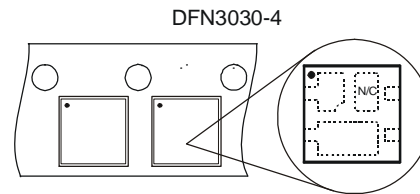
Part Number	Case	Packaging
SBR05M60BLP-7	DFN3030-4	3000/Tape & Reel

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



56 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: W = 2009)  
 M = Month (ex: 9 = September)



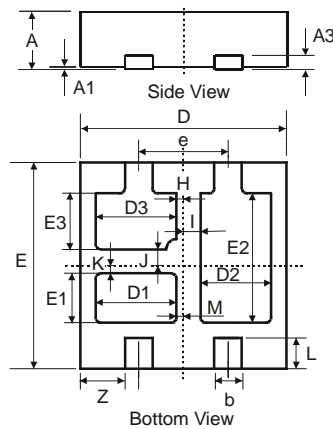
Date Code Key

Year	2009	2010	2011	2012	2013	2014	2015
Code	W	X	Y	Z	A	B	C

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

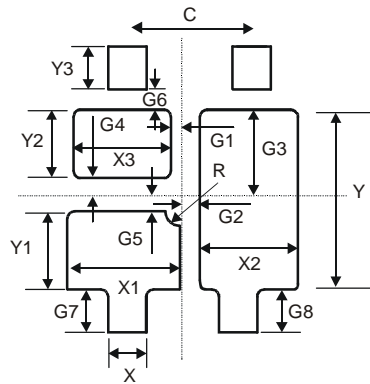
**Package Outline Dimensions**



DFN3030-4			
Dim	Min	Max	Typ
A	0.57	0.63	0.60
A1	0	0.05	0.02
A3	-	-	0.15
b	0.35	0.45	0.40
D	2.90	3.10	3.00
D1	1.075	1.275	1.175
D2	0.925	1.125	1.025
D3	1.075	1.275	1.175
E	2.90	3.10	3.00
e	-	-	1.30
E1	0.615	0.815	0.715
E2	1.78	1.98	1.88
E3	0.715	0.915	0.815
H	0.05	0.15	0.10
I	0.20	0.30	0.25
J	0.185	0.285	0.235
K	0.065	0.165	0.115
L	0.30	0.60	0.45
M	0.05	0.15	0.10
Z	-	-	0.65
<b>All Dimensions in mm</b>			

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## Suggested Pad Layout



Dimensions	Value (in mm)
C	1.300
G1	0.100
G2	0.150
G3	0.830
G4	0.115
G5	0.135
G6	0.170
G7	0.500
G8	0.500
R	0.150
X	0.500
X1	1.375
X2	1.225
X3	1.175
Y	1.980
Y1	1.015
Y2	0.715
Y3	0.650

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Document number: DS31771 Rev. 2 - 2

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June 2010  
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