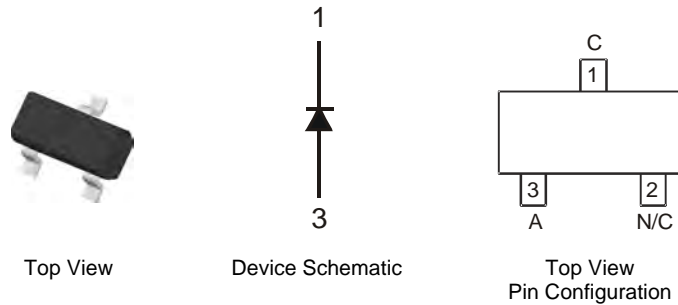


Features

- Low Forward Voltage Drop
- Low Reverse Leakage
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, fast switching capability
- 150°C Operating Junction Temperature
- **Lead, Halogen and Antimony Free, RoHS Compliant**
- **"Green" Device (Note 1)**

Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 0.008 grams (approximate)

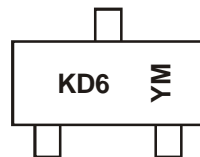


Ordering Information (Note 2)

Part Number	Case	Packaging
SBR160S23-7	SOT-23	3000/Tape & Reel

Notes: 1. Diodes Inc.'s "Green" Policy can be found on our website at <http://www.diodes.com>
 2. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



KD6 = Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: X = 2010)
 M = Month (ex: 9 = September)

Date Code Key

Year	2010	2011	2012	2013	2014	2015	2016
Code	X	Y	Z	A	B	C	D

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

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	900	mA
Average Peak Forward Current; D.C. = 50%	I_{FAV}	1600	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	15	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation	P_D	500	mW
Typical Thermal Resistance	$R_{\theta JA}$	305	$^\circ\text{C}/\text{W}$
Thermal Resistance Junction to Ambient Air (Note 3)			
Thermal Resistance Junction to Ambient Air (Note 4)			
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	V_R	60	-	-	V	$I_R = 300\mu\text{A}$
Forward Voltage (Per Diode)	V_F	-	-	470 530 600 740	mV	$I_F = 500\text{mA}$ $I_F = 750\text{mA}$ $I_F = 1000\text{mA}$ $I_F = 1500\text{mA}$
Leakage Current (Note 5)	I_R	-	-	100	μA	$V_R = 45\text{V}, T_J = 25^\circ\text{C}$
Total Capacitance	C_T	-	19	-	pF	$V_R = 25\text{V}, f = 1\text{MHz}$
Reverse Recovery Time	t_{rr}	-	16	-	ns	$I_F = I_R = 10\text{mA}, I_{RR} = 0.1 \cdot I_R$ $R_L = 100\Omega$

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

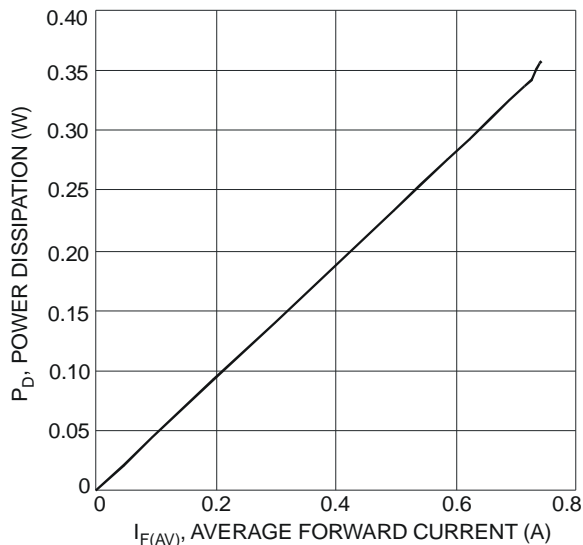


Fig. 1 Forward Power Dissipation

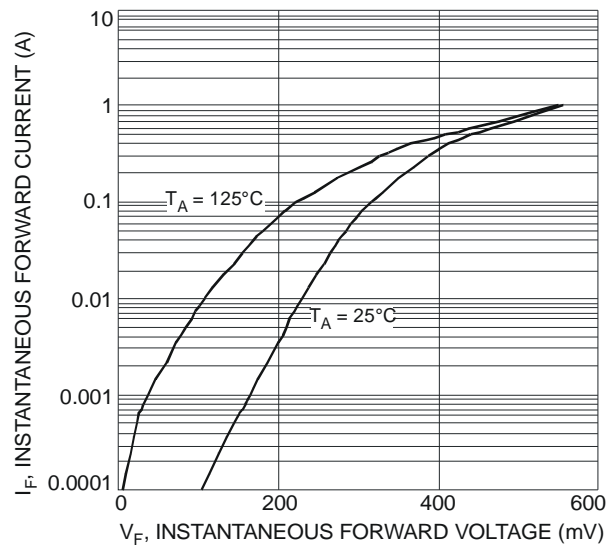


Fig. 2 Typical Forward Characteristics

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SBR160S23

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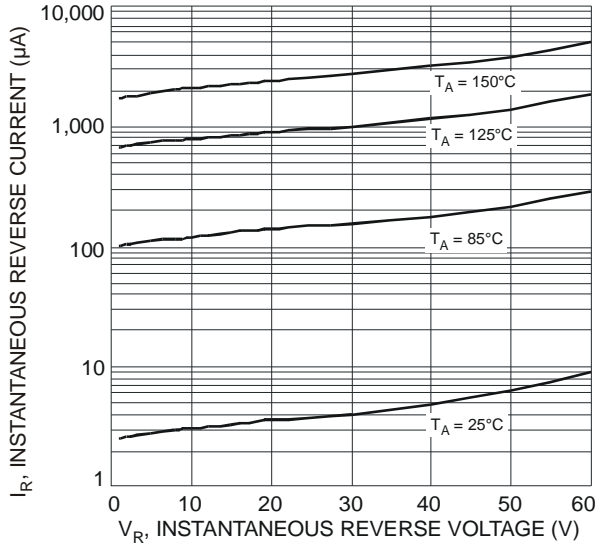


Fig. 3 Typical Reverse Characteristics

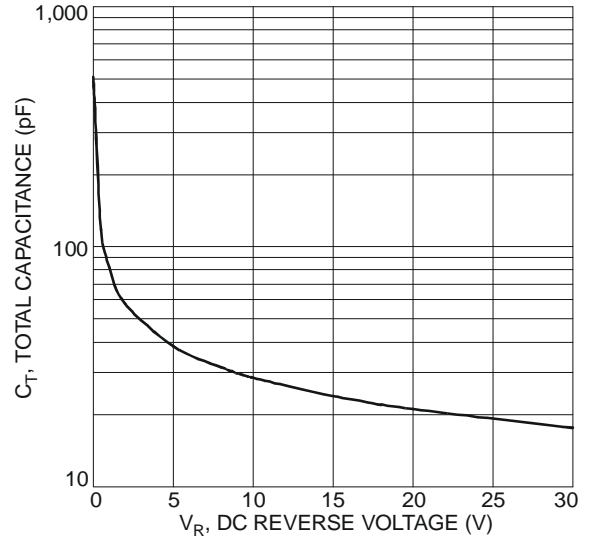


Fig. 4 Total Capacitance vs. Reverse Voltage

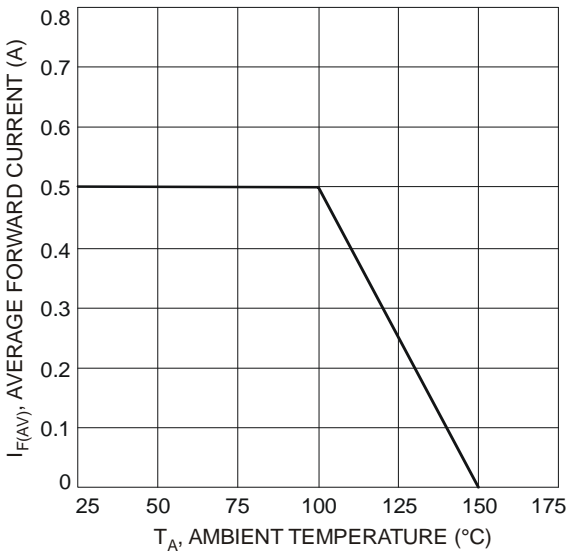


Fig. 5 Forward Current Derating Curve

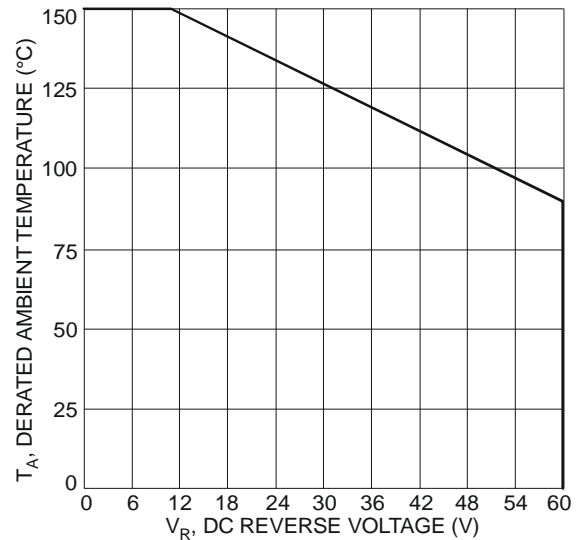
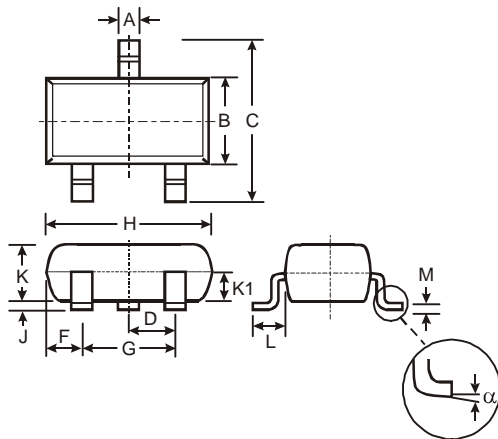


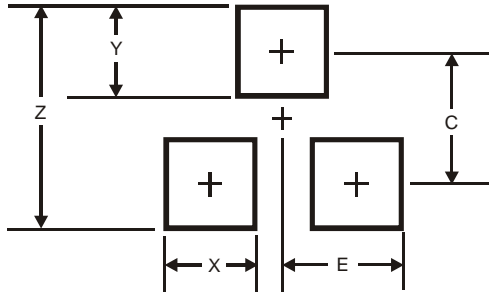
Fig. 6 Operating Temperature Derating

Package Outline Dimensions



SOT-23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.903	1.10	1.00
K1	-	-	0.400
L	0.45	0.61	0.55
M	0.085	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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