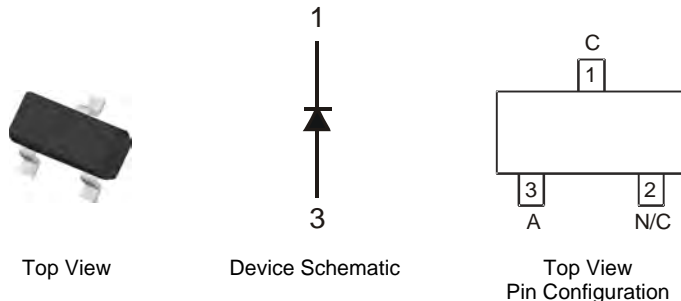


## Features

- 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)

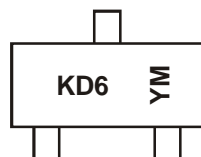


## Ordering Information (Note 2)

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<sub>A</sub> = 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	V <sub>RRM</sub>	60	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current	I <sub>O</sub>	900	mA
Average Peak Forward Current; D.C. = 50%	I <sub>FAV</sub>	1600	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	15	A

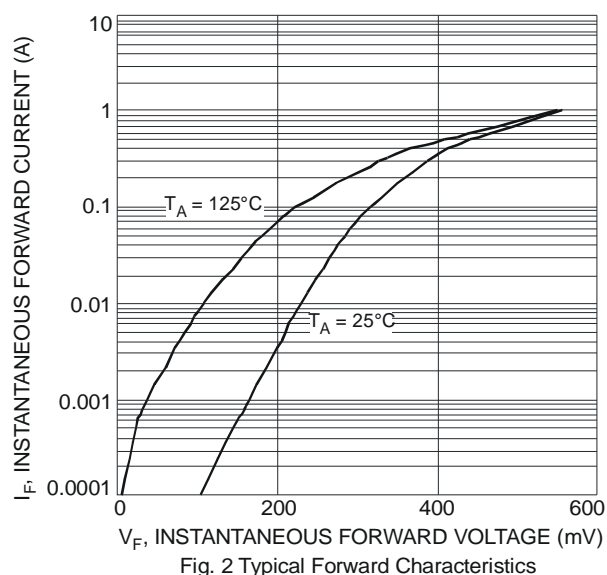
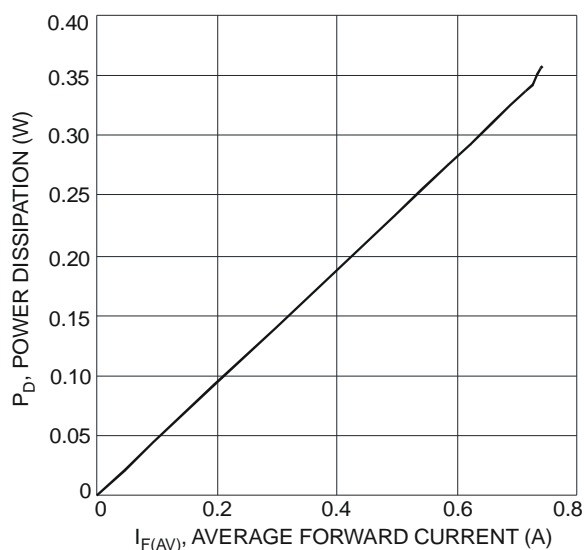
**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation	P <sub>D</sub>	500	mW
Typical Thermal Resistance	R <sub>θJA</sub>	305	°C/W
Thermal Resistance Junction to Ambient Air (Note 3)			
Thermal Resistance Junction to Ambient Air (Note 4)			
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	V <sub>R</sub>	60	-	-	V	I <sub>R</sub> = 300μA
Forward Voltage (Per Diode)	V <sub>F</sub>	-	-	470 530 600 740	mV	I <sub>F</sub> = 500mA I <sub>F</sub> = 750mA I <sub>F</sub> = 1000mA I <sub>F</sub> = 1500mA
Leakage Current (Note 5)	I <sub>R</sub>	-	-	100	μA	V <sub>R</sub> = 45V, T <sub>J</sub> = 25°C
Total Capacitance	C <sub>T</sub>	-	19	-	pF	V <sub>R</sub> = 25V, f = 1MHz
Reverse Recovery Time	t <sub>rr</sub>	-	16	-	ns	I <sub>F</sub> = I <sub>R</sub> = 10mA, IRR = 0.1*I <sub>R</sub> R <sub>L</sub> = 100Ω

Notes: 3. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.  
4. Part mounted on Polyimide board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.  
5. Short duration pulse test used to minimize self-heating effect.



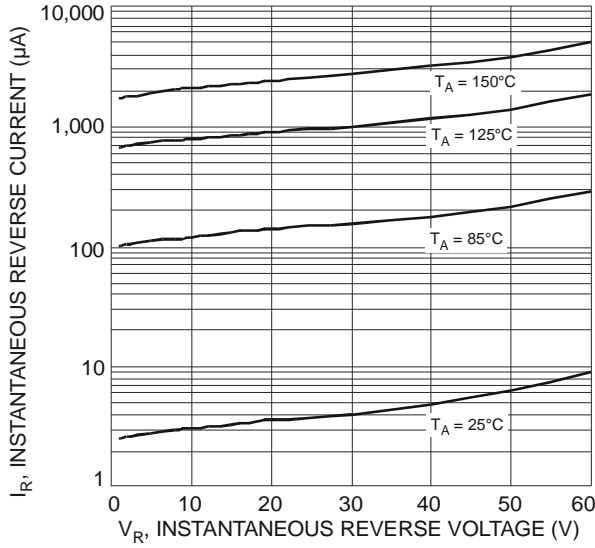


Fig. 3 Typical Reverse Characteristics

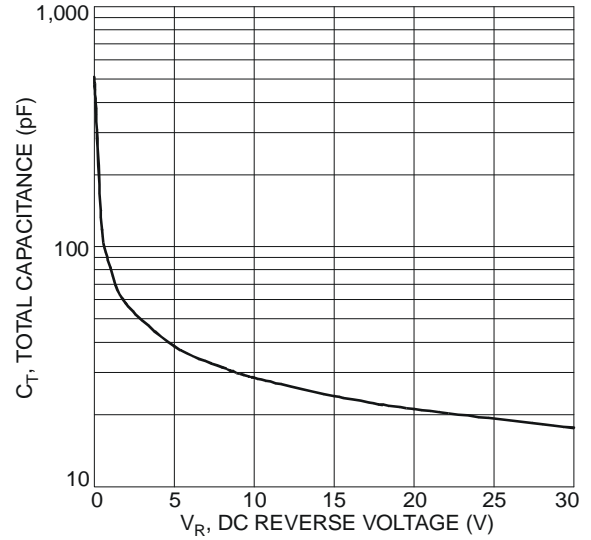


Fig. 4 Total Capacitance vs. Reverse Voltage

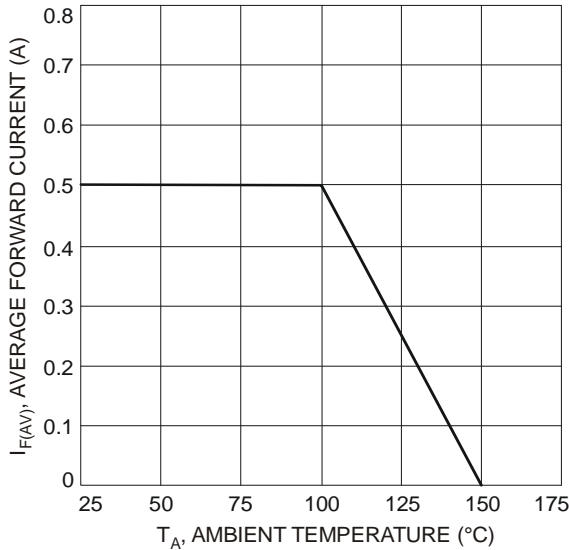


Fig. 5 Forward Current Derating Curve

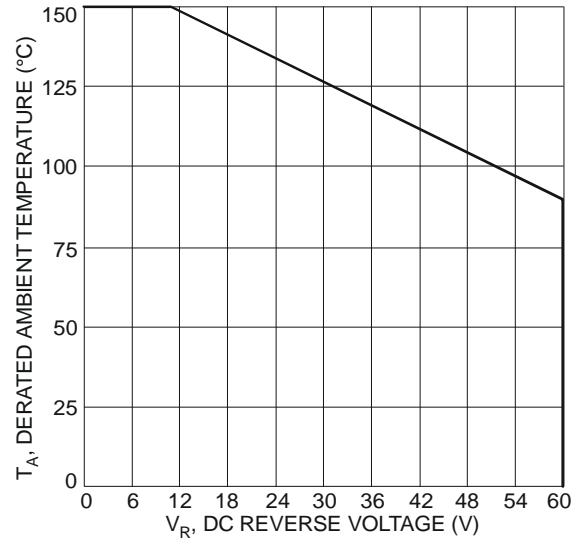
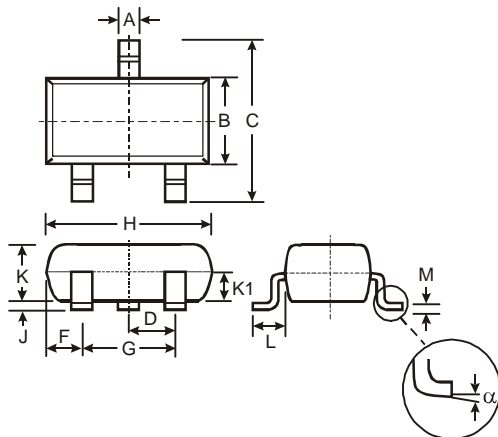


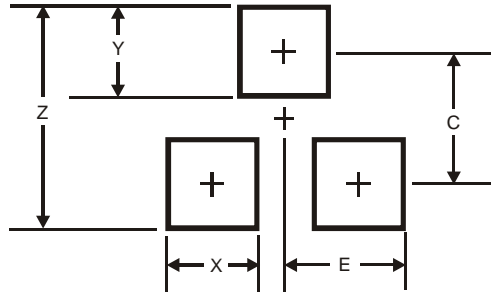
Fig. 6 Operating Temperature Derating

## 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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