




## B140W SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

### Features

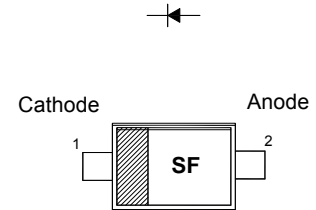
- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- Halogen and Antimony Free. "Green" Device (Note 3)**

### Mechanical Data

- Case: SOD123
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Rating Classification 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity: Cathode Band
- Terminals: Finish - Matte Tin Annealed Over Alloy 42 leadframe.
- Solderable per MIL-STD-202, Method 208 
- Weight: 0.004 grams (approximate)

### Marking Information

Marking code: SF



**SOD-123**



## 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 Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	40	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	28	V
Average Rectified Output Current	I <sub>O</sub>	1	A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	3	A

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	235	mW
Typical Thermal Resistance Junction to Ambient (Note 5)	R <sub>θJA</sub>	426	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-40 to +125	°C

## Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	40	—	—	V	I <sub>R</sub> = 1mA
Forward Voltage	V <sub>F</sub>	—	0.54	0.65	V	I <sub>F</sub> = 1A
Reverse Current (Note 6)	I <sub>R</sub>	—	2.0	50	μA	V <sub>R</sub> = 40V
Total Capacitance	C <sub>T</sub>	—	125 20	—	pF pF	V <sub>R</sub> = 0V, f = 1.0MHz V <sub>R</sub> = 10V, f = 1.0MHz

Notes: 5. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.  
6. Short duration pulse test used to minimize self-heating effect.  
7.  $d P_{TDT} / d T_J < 1/R_{\theta JA}$

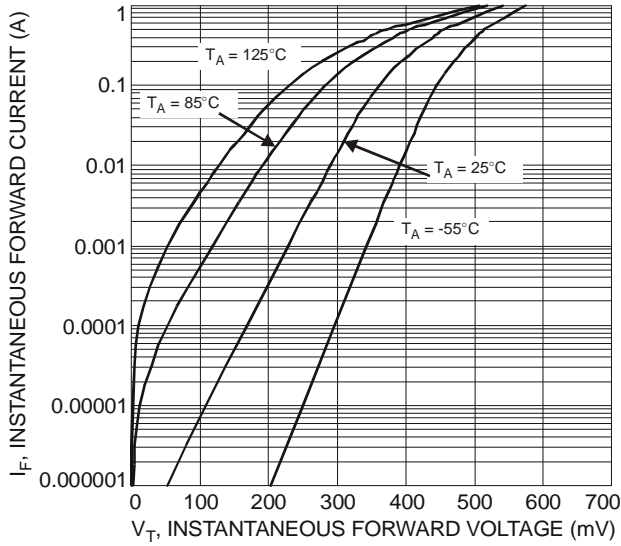


Figure 1 Typical Forward Characteristics

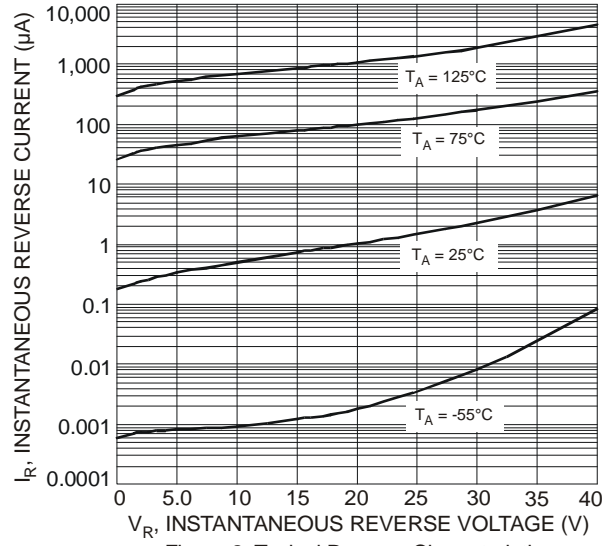


Figure 2 Typical Reverse Characteristics

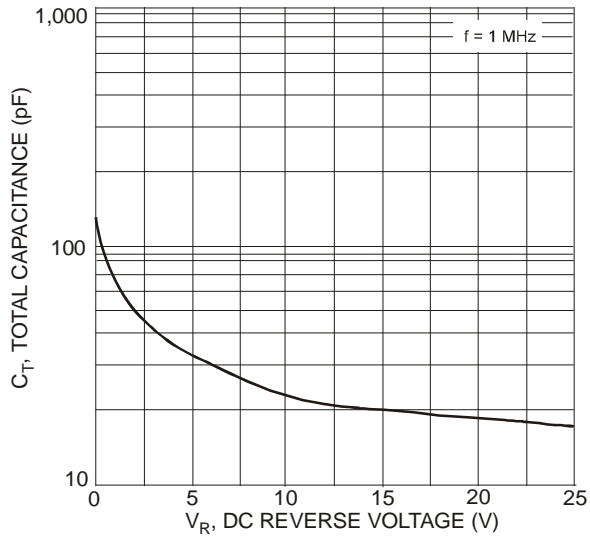


Figure 3 Total Capacitance vs. Reverse Voltage

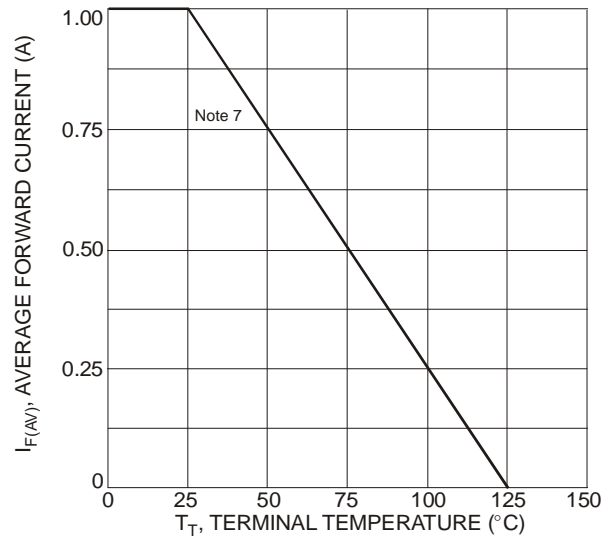


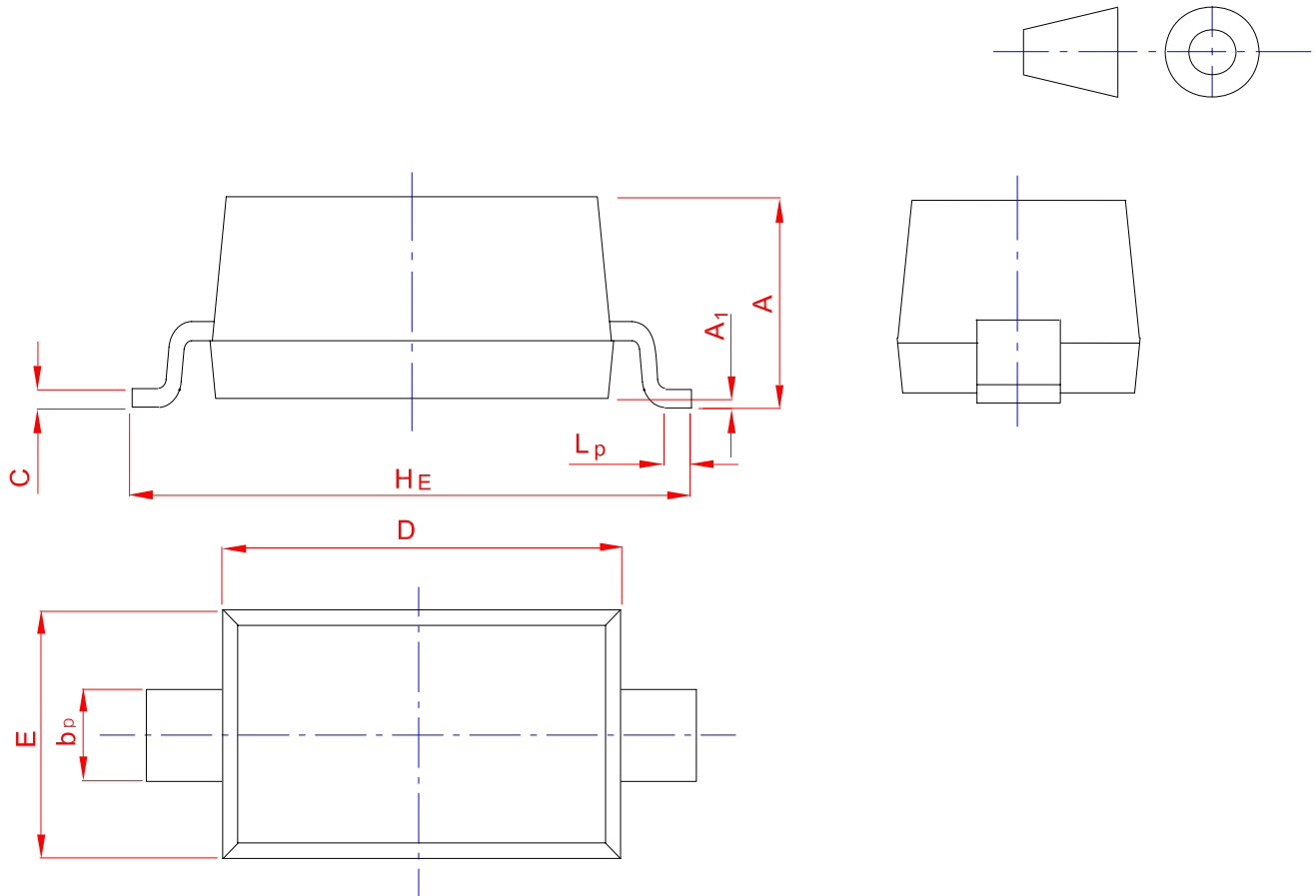
Figure 4 Forward Current Derating Curve



## PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD-123



UNIT	A	bp	C	D	E	HE	A1	Lp
mm	1.20	0.60	0.135	2.75	1.65	3.85	0.10	0.50
	0.90	0.50	0.100	2.55	1.55	3.55	0.01	0.20