



#### SURFACE MOUNT SCHOTTKY BARRIER DIODE

### **Features**

- Low Forward Voltage Drop
- **Guard Ring Construction for Transient Protection**
- Ideal for Low Logic Level Applications
- Low Capacitance
- Lead Free By Design/RoHS Compliant (Note 1)
- Qualified to AEC-Q101 Standards for High Reliability
- "Green" Device, Notes 4 and 5

### **Mechanical Data**

Case: SOD-523

Case Material: Molded Plastic, "Green" Molding Compound, Note 5. UL Flammability Classification Rating 94V-0

Moisture Sensitivity: Level 1 per J-STD-020D

Terminal Connections: Cathode Band

Terminals: Finish - Matte Tin annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208

Marking Information: See Page 2 Ordering Information: See Page 2 Weight: 0.002 grams (approximate)



Top View

## **Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Maximum Peak Reverse Voltage	$V_{RM}$	45	V
Reverse Voltage	V <sub>R</sub>	40	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	28	V
Average Forward Current	Io	100	mA
Maximum (Peak) Forward Current	I <sub>FM</sub>	300	mA
Non-Repetitive Peak Forward Surge Current @ t ≤ 10ms	I <sub>FSM</sub>	1	Α

### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 2)	P <sub>D</sub>	150	mW
Thermal Resistance, Ambient Air (Note 2)	$R_{ hetaJA}$	667	°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

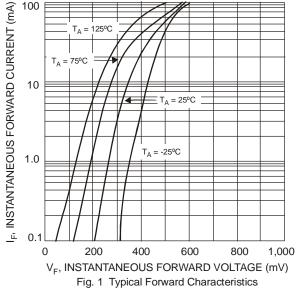
Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 3)	$V_{(BR)R}$	30	_	_	V	$I_R = 100 \mu A$
Forward Voltage Drop	VF		280 360 470 580	— — 550 800	mV	I <sub>F</sub> = 1.0mA I <sub>F</sub> = 15mA I <sub>F</sub> = 50mA I <sub>F</sub> = 100mA
Reverse Current (Note 3)	I <sub>R</sub>		_	1.0	μΑ	V <sub>R</sub> = 25V
Total Capacitance	C <sub>T</sub>	_	4	15	pF	$V_R = 10V, f = 1.0 MHz$

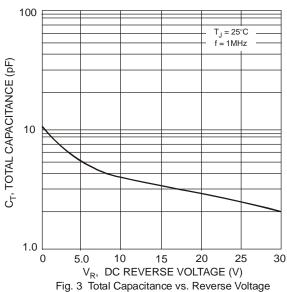
Notes:

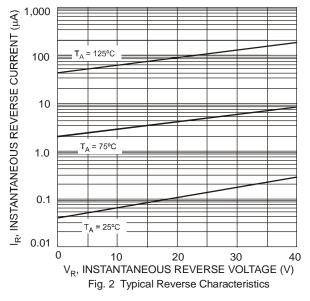
- 1. No purposefully added lead.
- Part mounted on FR-4 board with recommended pad layout, which can be found on our website at
- http://www.diodes.com/datasheets/ap02001.pdf. @  $T_A = 25^{\circ}C$ . Short duration pulse test used so as to minimize self-heating effect.
- Diodes Inc.'s "Green" Policy can be found on our website at http://www.diodes.com/products/lead\_free/index.php.

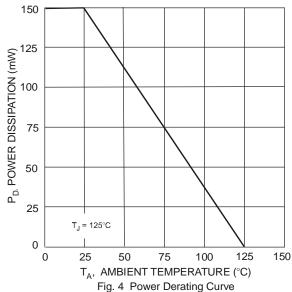
  Product manufactured with date code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to date code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.











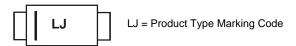
# Ordering Information (Note 5 & 6)

Part Number	Case	Packaging
SDM10U45-7 (Note 7)	SOD-523	3000/Tape & Reel

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

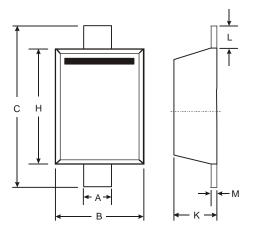
#### Dispensed in every other cavity of the tape.

# **Marking Information**



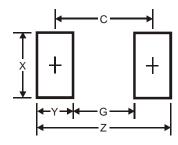


## **Package Outline Dimensions**



SOD-523				
Dim	Min	Max		
Α	0.25	0.35		
В	0.70	0.90		
С	1.50	1.70		
Н	1.10	1.30		
K	0.55	0.70		
٦	0.10	0.30		
М	0.10	0.20		
All Dimensions in mm				

# **Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.3
G	1.1
Х	0.8
Y	0.6
С	1.7

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