



### **SDM10U45**

#### 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	$V_{R}$	40	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	28	V
Average Forward Current	I <sub>O</sub>	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	A

#### 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	$T_{J_i}T_{STG}$	-40 to +125	°C

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

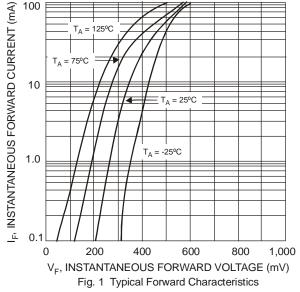
Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 3)	$V_{(BR)R}$	30	_	_	V	$I_R = 100 \mu A$
Forward Voltage Drop	V <sub>F</sub>		280 360 470 580	  550 800	mV	I <sub>F</sub> = 1.0mA I <sub>F</sub> = 15mA I <sub>F</sub> = 50mA I <sub>F</sub> = 100mA
Reverse Current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

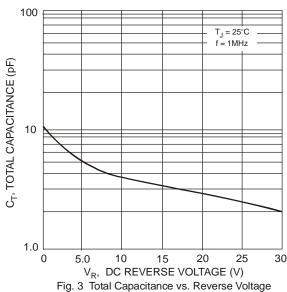
Notes:

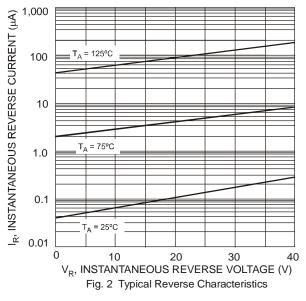
- 1. No purposefully added lead.
- Part mounted on FR-4 board with recommended pad layout, which can be found on our website at
- http://www.diodes.com/datasheets/ap02001.pdf. @  $T_A = 25^{\circ}C$ . Short duration pulse test used so as to minimize self-heating effect.
- Diodes Inc.'s "Green" Policy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

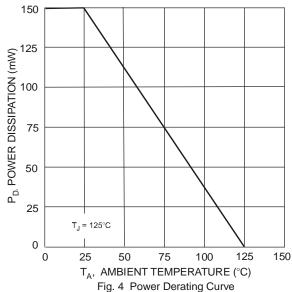
  Product manufactured with date code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to date code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.











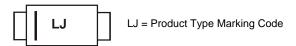
## Ordering Information (Note 5 & 6)

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.

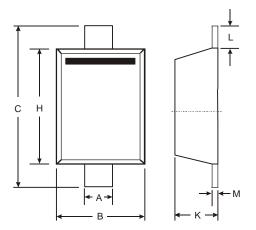
7. Dispensed in every other cavity of the tape.

# **Marking Information**



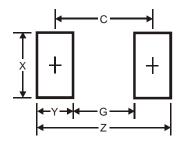


## **Package Outline Dimensions**



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

#### IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

#### LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.