



DUAL SURFACE MOUNT SCHOTTKY BARRIER DIODE

Features

- Very Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance
- Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 4, 5 and 6)

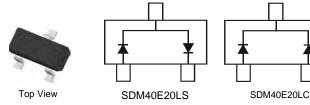
Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0

SDM40E20LA

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- Moisture Sensitivity: Level 1 per J-STD-020D
- Polarity: See Diagram
- Leads: Solderable per MIL-STD-202, Method 208
- Terminals: SDM40E20L/S/A Finish Matte Tin Finish annealed over Alloy 42 leadframe. SDM40E20LC Finish — Matte Tin Finish annealed over CDA194 leadframe.
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.008 grams (approximate)



Maximum Ratings @T_A = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load. For capacitance load, derate current by 20%

8.3ms single half sine-wave superimposed on rated load

Characteristic Value Unit **Symbol** Peak Repetitive Reverse Voltage V_{RRM} Working Peak Reverse Voltage 20 V_{RWM} DC Blocking Voltage V_{R} RMS Reverse Voltage 14 V_{R(RMS)} Forward Continuous Current (Note 1) 0.4 Α I_{FM} Non-Repetitive Peak Forward Surge Current

 I_{FSM}

Thermal Characteristics

Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 1)	D	225	mW
	(Note 2)	P_{D}	300	IIIVV
Typical Thermal Resistance Junction to Ambient	(Note 1)	6	444	°C/W
	(Note 2)	$R_{ heta JA}$	333	-C/VV
Operating and Storage Temperature Range		T _J , T _{STG}	-65 to +125	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

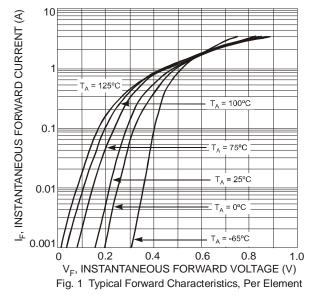
Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 3)	$V_{(BR)R}$	20	_	_	V	$I_R = 0.5 \text{mA}$
Forward Voltage Drop	VF	_	_	0.310	· · · · · · · · · · · · · · · · · · ·	$I_F = 0.1A$
Polward Voltage Drop		_	_	0.430		$I_F = 0.5A$
Leakage Current (Note 3)	1-	_	_	100		$V_R = 10V$
Leakage Current (Note 3)	IR	_	_	250		$V_R = 20V$
Total Capacitance	C _T	_	120	_	pF	$f = 1MHz, V_R = 0VDC$

Notes:

- 1. Device mounted on FR-5 1.0 x 0.75 x 0.062 inch PCB pad layout.
- Device mounted on Alumina PCB, 0.4 inch x 0.3 inch x 0.024 inch pad layout.
- Short duration pulse test used to minimize self-heating effect.
- No purposefully added lead. Halogen and Antimony Free.
- 5. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
- 6. Product manufactured with Green Molding Compound and does not contain Halogens or Sb₂O₃ Fire Retardants.

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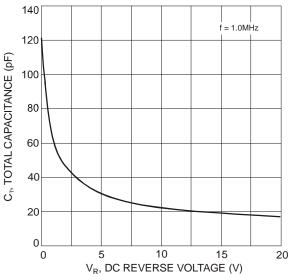


Fig. 3 Total Capacitance vs. Reverse Voltage, Per Element

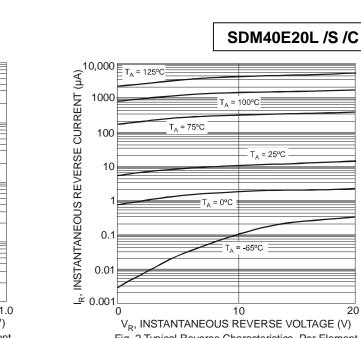


Fig. 2 Typical Reverse Characteristics, Per Element

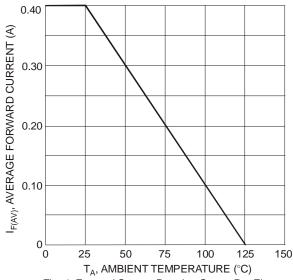


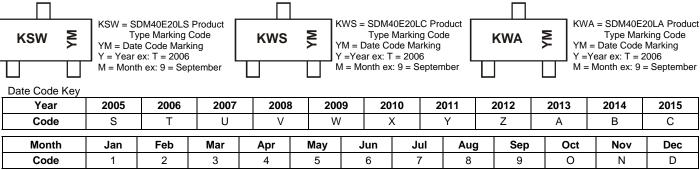
Fig. 4 Forward Current Derating Curve, Per Element

Ordering Information (Note 7)

Part Number	Case	Packaging
SDM40E20LS-7-F	SOT-23	3000/Tape & Reel
SDM40E20LC-7	SOT-23	3000/Tape & Reel
SDM40E20LA-7	SOT-23	3000/Tape & Reel

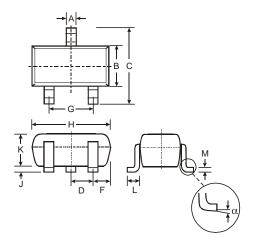
Notes: 7. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



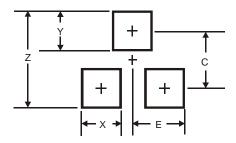


Package Outline Dimensions



SOT-23				
Dim	Min	Max		
Α	0.37	0.51		
В	1.20	1.40		
С	2.30	2.50		
D	0.89	1.03		
F	0.45	0.60		
G	1.78	2.05		
Н	2.80	3.00		
J	0.013	0.10		
K	0.903	1.10		
L	0.45	0.61		
M	0.085	0.180		
α	0°	8°		
All Dimensions in mm				

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
Х	0.8
Y	0.9
С	2.0
E	1.35

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