

DUAL SURFACE MOUNT SCHOTTKY BARRIER DIODE

Product Summary

V_{RRM} (V)	I_{FM} (A)	V_F Max (V)	I_R Max (μ A) @ 25V
40	0.4	0.50	70

Description and Applications

This Schottky Barrier Diode is designed for low forward voltage drop and very low reverse leakage current. It is ideally suited to use as:

- Polarity Protection Diode
- Re-Circulating Diode
- Switching Diode

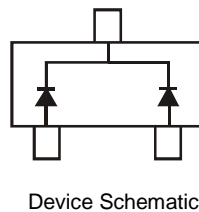


Features

- Very Low Forward Voltage Drop
- Common Cathode Configuration
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: SC59
- 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 Copper Leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 [Ⓔ]
- Polarity: See Diagram
- Weight: 0.008 grams (Approximate)

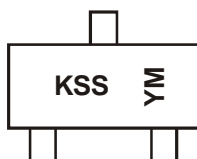


Ordering Information (Note 4)

Part Number	Case	Packaging
SDM20E40C-7-F	SC59	3,000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



KSS = Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: E = 2017)
 M = Month (ex: 9 = September)

Date Code Key

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023
Code	C	D	E	F	G	H	I	J	K

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_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	40	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
RMS Reverse Voltage	V _{R(RMS)}	28	V
Forward Continuous Current (Note 6)	I _{FM}	0.4	A
Non-Repetitive Peak Forward Surge Current @ t = 8.3ms	I _{FSM}	2	A
Repetitive peak Forward Current	I _{FRM}	500	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P _D	400	mW
Typical Thermal Resistance Junction to Ambient Air (Note 6)	R _{θJA}	180	°C/W
Typical Thermal Resistance Junction to Case (Note 6)	R _{θJC}	41	°C/W
Operating Temperature Range	T _{OP}	-30 to +85	°C
Junction Temperature Range	T _J	-30 to +125	°C
Storage Temperature Range	T _{STG}	-40 to +125	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 5)	V _{(BR)R}	40	—	—	V	I _R = 500μA
Forward Voltage	V _F	—	—	300 500	mV	I _F = 10mA I _F = 200mA
Leakage Current (Note 5)	I _R	—	—	70	μA	V _R = 25V
Total Capacitance	C _T	—	—	100	pF	V _R = 0V, f = 1.0MHz

Notes: 5. Short duration pulse test used to minimize self-heating effect.

6. Mounted on FR4 PC Board with minimum recommended pad layout which can be found on our website at <http://www.diodes.com/package-outlines.html>.

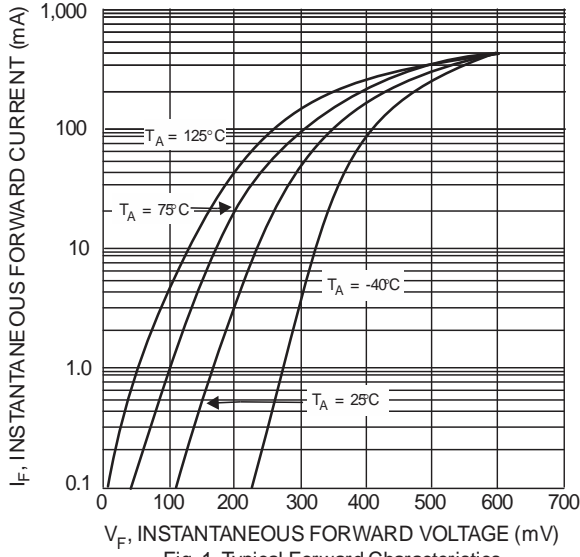


Fig. 1 Typical Forward Characteristics

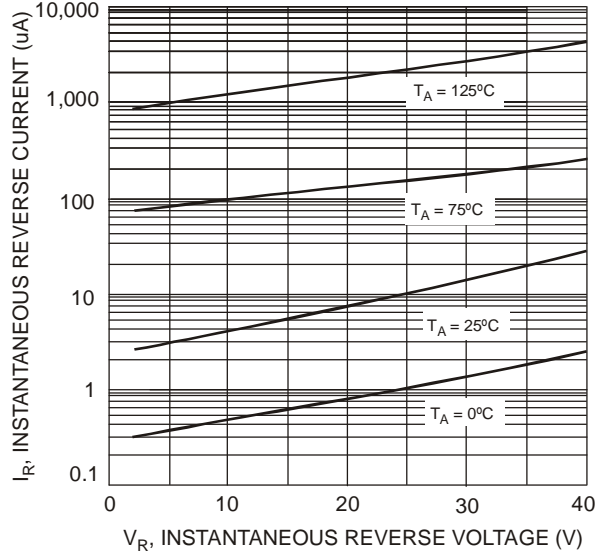


Fig. 2 Typical Reverse Characteristics

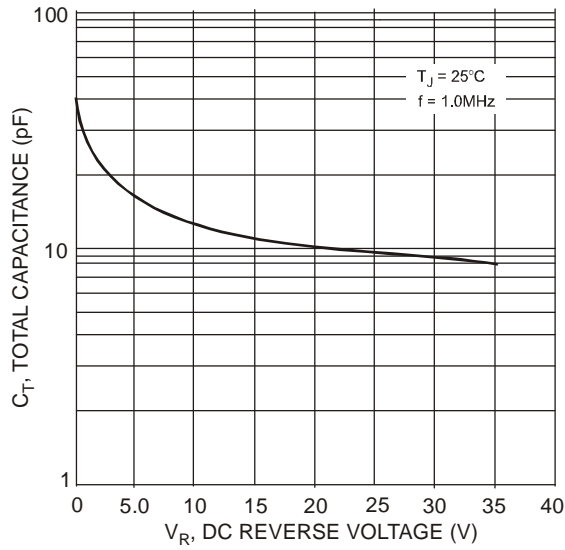


Fig. 3 Total Capacitance vs. Reverse Voltage

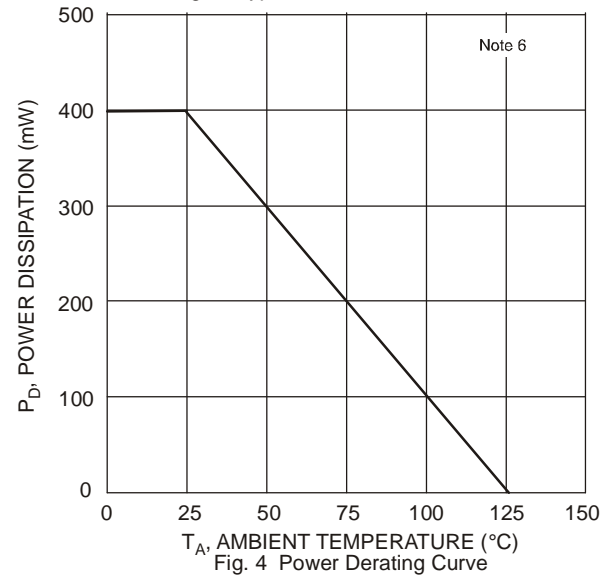
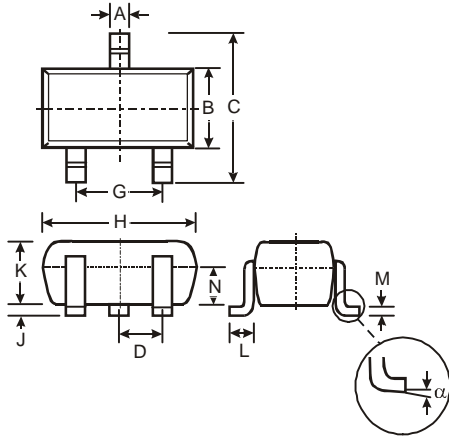


Fig. 4 Power Derating Curve

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SC59

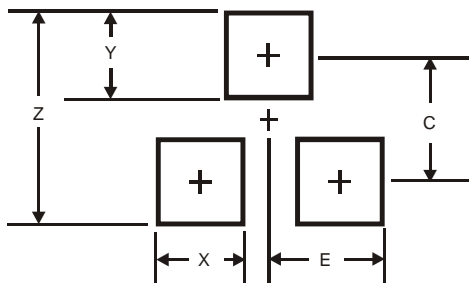


SC59			
Dim	Min	Max	Typ
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	-	-	0.95
G	-	-	1.90
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
N	0.70	0.80	0.75
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SC59



Dimensions	Value (in mm)
Z	3.4
X	0.8
Y	1.0
C	2.4
E	1.35

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