

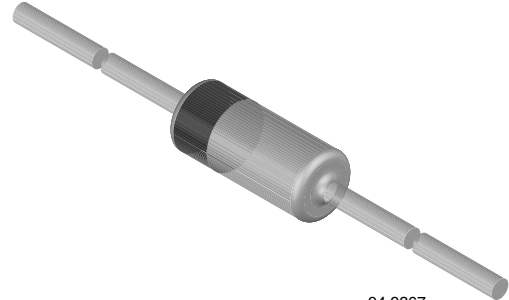
Small Signal Schottky Diodes

Features

- The SD103 series is a Metal-on-silicon Schottky barrier device which is protected by a PN junction guard ring.
- The low forward voltage drop and fast switching make it ideal for protection of MOS devices, steering, biasing and coupling diodes for fast switching and low logic level applications.
- Other applications are click suppression, efficient full wave bridges in telephone subsets, and blocking diodes in rechargeable low voltage battery systems.
- These diodes are also available in the SOD-123 and SOD-323 case with type designations SD103AW(S)-V...SD103CW(S)-V, and in the MiniMELF case with type designations LL103A thru LL103C.
- For general purpose applications
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



RoHS
COMPLIANT
HALOGEN
FREE



94 9367

Applications

- HF-Detector
- Protection circuit
- Small battery charger
- AC-DC/DC-DC converters

Mechanical Data

Case: DO-35

Weight: approx. 125 mg

Cathode band color: black

Packaging codes/options:

TR/10 k per 13" reel (52 mm tape), 50 k/box

TAP/10 k per Ammopack (52 mm tape), 50 k/box

Parts Table

Part	Type differentiation	Ordering code	Type Marking	Remarks
SD103A	$V_R = 40\text{ V}$	SD103A-TR or SD103A-TAP	SD103A	Tape and Reel/Ammopack
SD103B	$V_R = 30\text{ V}$	SD103B-TR or SD103B-TAP	SD103B	Tape and Reel/Ammopack
SD103C	$V_R = 20\text{ V}$	SD103C-TR or SD103C-TAP	SD103C	Tape and Reel/Ammopack

Absolute Maximum Ratings

$T_{amb} = 25\text{ }^\circ\text{C}$, unless otherwise specified

Parameter	Test condition	Part	Symbol	Value	Unit
Peak inverse voltage		SD103A	V_R	40	V
		SD103B	V_R	30	V
		SD103C	V_R	20	V
Power dissipation (infinite heatsink)			P_{tot}	400 ¹⁾	mW
Single cycle surge 60 Hz sine wave			I_{FSM}	15	A

¹⁾ Valid provided that leads at a distance of 4 mm from case are kept at ambient temperature

Thermal Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air		R_{thJA}	310 ¹⁾	K/W
Junction temperature		T_j	125	$^{\circ}\text{C}$
Storage temperature range		T_{stg}	- 55 to + 150	$^{\circ}\text{C}$

¹⁾ Valid provided that leads at a distance of 4 mm from case are kept at ambient temperature

Electrical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

Parameter	Test condition	Part	Symbol	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	$I_R = 50\text{ }\mu\text{A}$	SD103A	$V_{(BR)}$	40			V
		SD103B	$V_{(BR)}$	30			V
		SD103C	$V_{(BR)}$	20			V
Leakage current	$V_R = 30\text{ V}$	SD103A	I_R			5	μA
	$V_R = 20\text{ V}$	SD103B	I_R			5	μA
	$V_R = 10\text{ V}$	SD103C	I_R			5	μA
Forward voltage drop	$I_F = 20\text{ mA}$		V_F			370	mV
	$I_F = 200\text{ mA}$		V_F			600	mV
Diode capacitance	$V_R = 0\text{ V}$, $f = 1\text{ MHz}$		C_D		50		pF
Reverse recovery time	$I_F = I_R = 50\text{ to }200\text{ mA}$, recover to $0.1\text{ }I_R$		t_{rr}		10		ns

Typical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

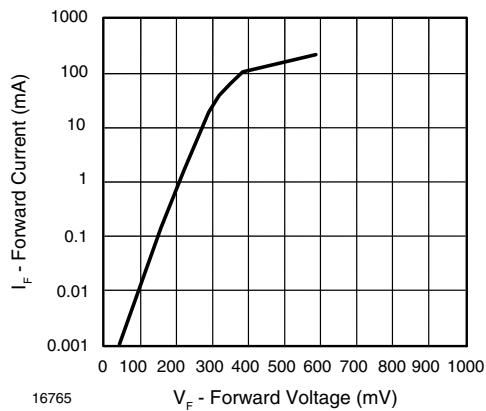


Figure 1. Forward Current vs. Forward Voltage

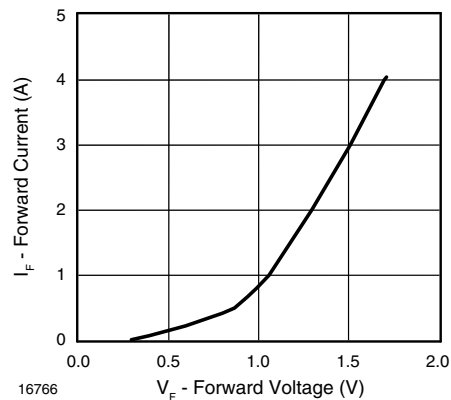


Figure 2. Forward Current vs. Forward Voltage

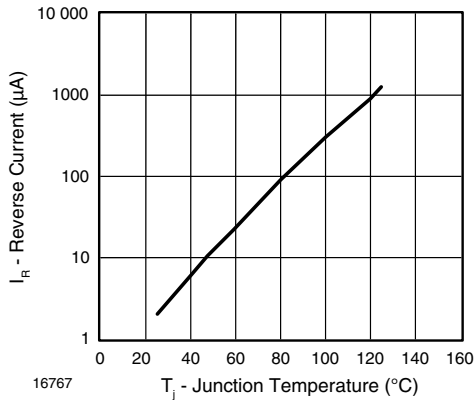


Figure 3. Reverse Current vs. Junction Temperature

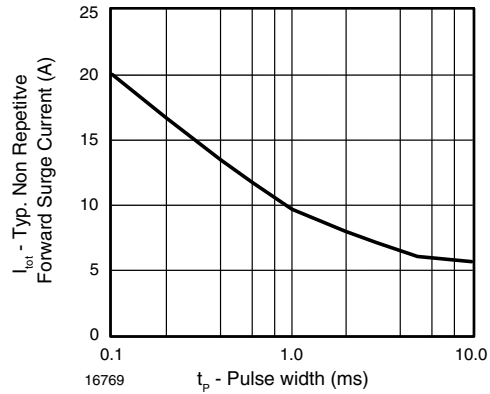


Figure 5. Typ. Non Repetitive Forward Surge Current vs. Pulse Width

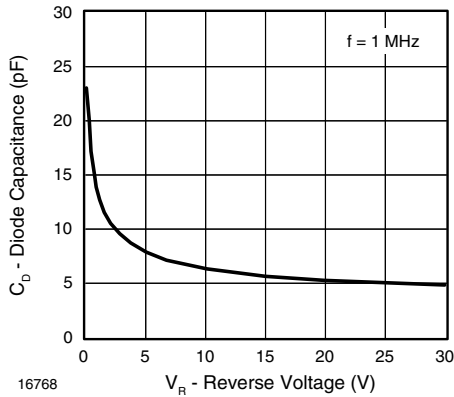
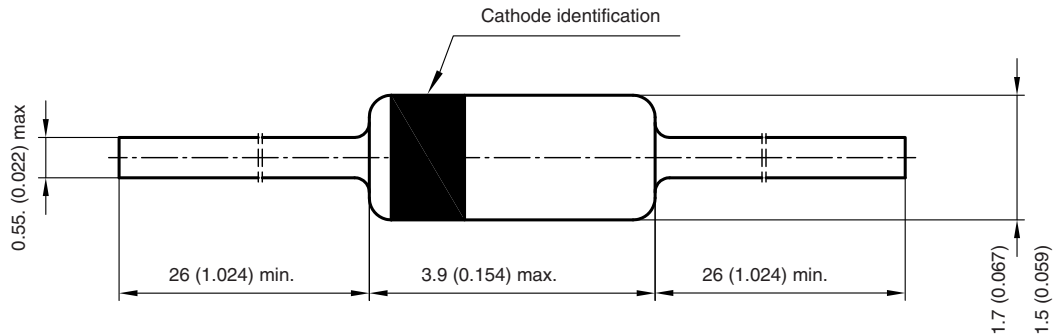


Figure 4. Diode Capacitance vs. Reverse Voltage

Package Dimensions in millimeters (inches): DO-35



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