

100mA, 45V Low V_F Schottky Barrier Diode

FEATURES

- Designed for mounting on small surface
- Low Capacitance
- Low forward voltage drop
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Adapters
- For switching power supply
- Low stored charge
- Inverter

MECHANICAL DATA

- Case: SOD-323F
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 4.60mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	100	mA
V_{RRM}	45	V
I_{FSM}	1	A
V_F at $I_F = 10\text{mA}$	0.45	V
$T_{J\text{MAX}}$	125	°C
Package	SOD-323F	
Configuration	Single die	



SOD-323F



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	RB500V-40	UNIT
Marking code on the device		S9	
Peak reverse voltage	V_{RM}	45	V
Reverse voltage	V_R	40	V
Forward current	I_F	100	mA
Non-repetitive peak forward surge current	I_{FSM}	1	A
	t = 8.3ms		
Junction temperature range	T_J	-40 to +125	°C
Storage temperature range	T_{STG}	-40 to +125	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	500	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Reverse Breakdown Voltage	$I_R = 100\mu\text{A}, T_J = 25^\circ\text{C}$	V_{BR}	45	-	V
Forward voltage ⁽¹⁾	$I_F = 10\text{mA}, T_J = 25^\circ\text{C}$	V_F	-	0.475	V
Reverse current @ rated V_R ⁽²⁾	$V_R = 10\text{V}, T_J = 25^\circ\text{C}$	I_R	-	1	μA
Junction capacitance	1MHz, $V_R = 10\text{V}$	C_J	-	6	pF

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION		
ORDERING CODE⁽¹⁾	PACKAGE	PACKING
RB500V-40 RR	SOD-323F	3,000 / 7" Tape & Reel
RB500V-40 RRG	SOD-323F	3,000 / 7" Tape & Reel
RB500V-40 R9	SOD-323F	10,000 / 13" Tape & Reel
RB500V-40 R9G	SOD-323F	10,000 / 13" Tape & Reel

Notes:

1. "G" means green compound (halogen-free according to IEC 61249-2-21)

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

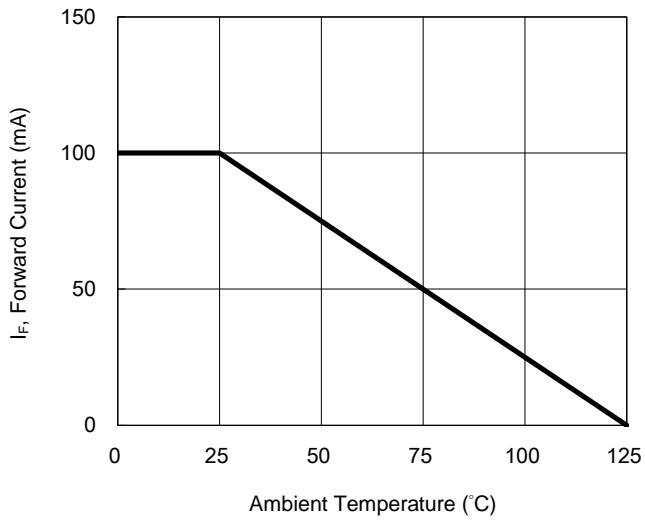


Fig.2 Typical Forward Characteristics

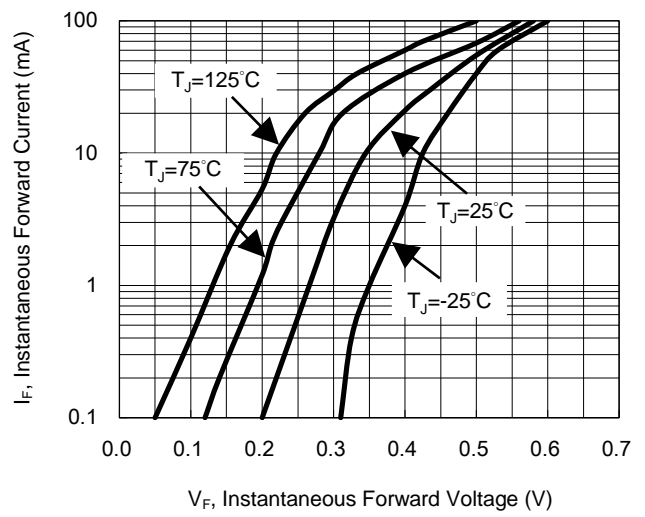


Fig.3 Typical Reverse Characteristics

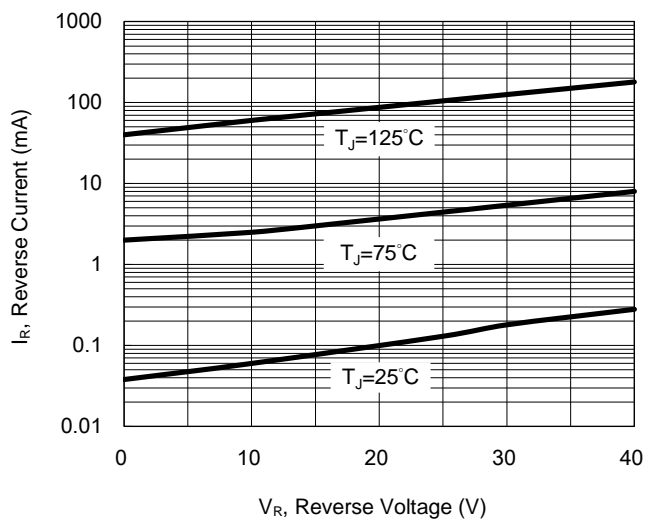
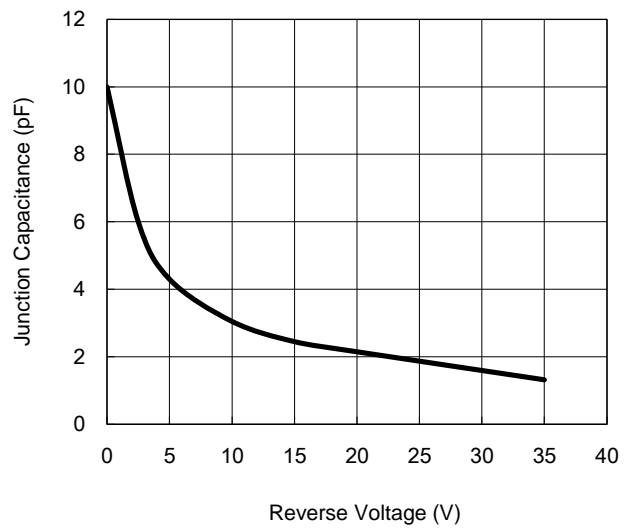
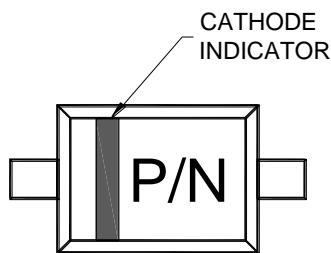
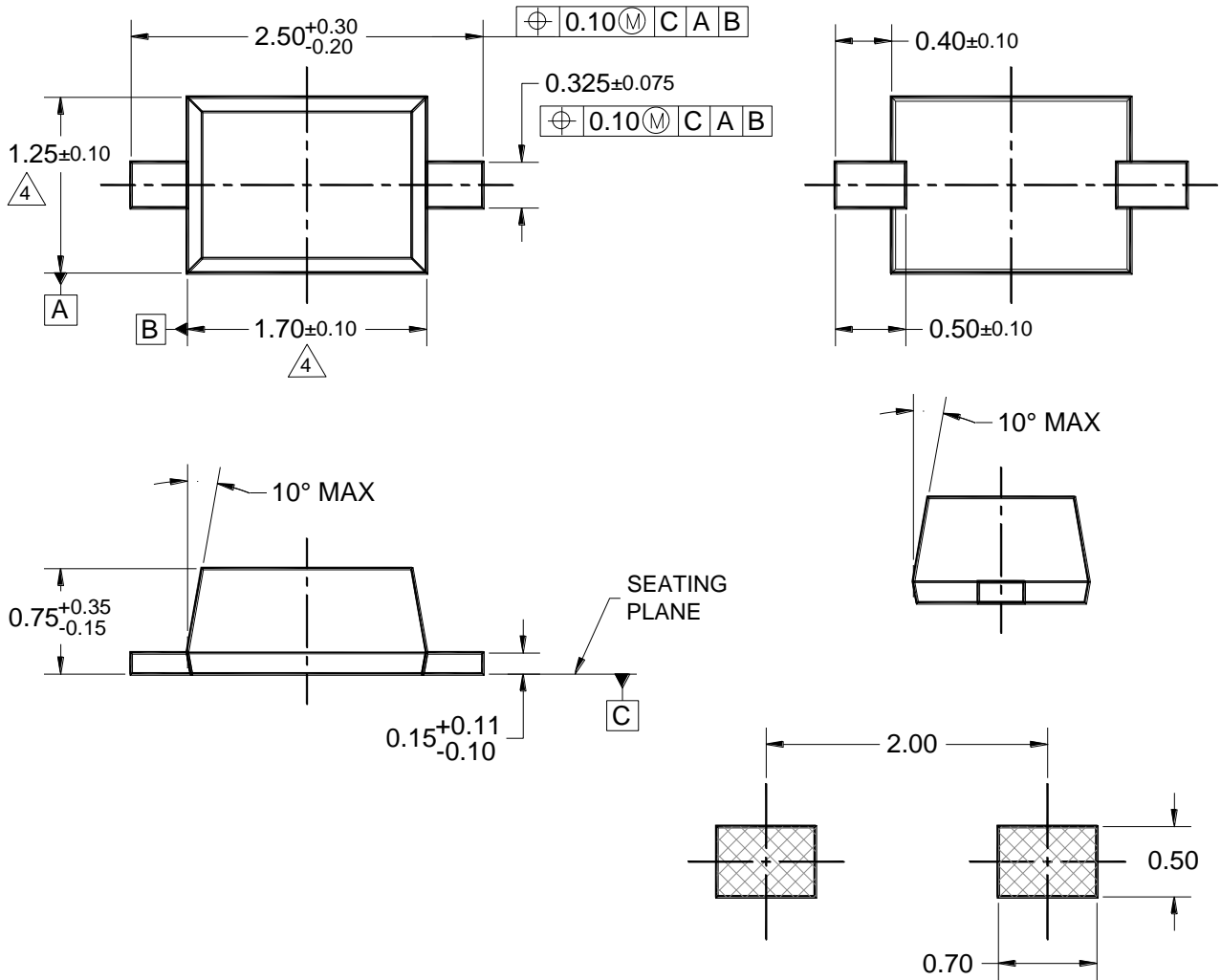


Fig.4 Typical Junction Capacitance



PACKAGE OUTLINE DIMENSIONS

SOD-323F



MARKING DIAGRAM

P/N = MARKING CODE

SUGGESTED PAD LAYOUT

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: EIAJ ED-7500A-1, SC-90.

4 MOLDED PLASTIC BODY LATERAL DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

5. DWG NO. REF: HQ2SD07-SOD323F-018 REV A.

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