

150mA, 85V Switching Diode

FEATURES

- Fast switching device ($t_{rr} < 4\text{ns}$)
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- For switching power supply

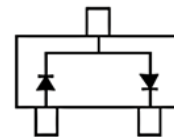
MECHANICAL DATA

- Case: SOT-323
- 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
- Weight: 5.00mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	150	mA
V_{RRM}	85	V
I_{FSM}	4	A
$T_{J\text{MAX}}$	150	°C
Package	SOT-323	



SOT-323



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage	V_{RRM}	85	V
Reverse voltage	V_R	75	V
Forward current	Single diode	150	mA
	Dual diodes	130	mA
Power dissipation	P_D	200	mW
Non-Repetitive peak forward surge current	$t = 1\mu\text{s}$	4	A
	$t = 1\text{ms}$	1	A
	$t = 1\text{s}$	0.5	A
Repetitive peak forward current	I_{FRM}	500	mA
Junction temperature range	T_J	-55 to +150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	625	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 1\text{mA}, T_J = 25^\circ\text{C}$	V_F	-	0.715	V
	$I_F = 10\text{mA}, T_J = 25^\circ\text{C}$		-	0.855	V
	$I_F = 50\text{mA}, T_J = 25^\circ\text{C}$		-	1.000	V
	$I_F = 150\text{mA}, T_J = 25^\circ\text{C}$		-	1.250	V
Reverse current per diode ⁽²⁾	$V_R = 25\text{V}, T_J = 25^\circ\text{C}$	I_R	-	30	nA
	$V_R = 75\text{V}, T_J = 25^\circ\text{C}$		-	1	μA
	$V_R = 25\text{V}, T_J = 150^\circ\text{C}$		-	30	μA
	$V_R = 75\text{V}, T_J = 150^\circ\text{C}$		-	50	μA
Junction capacitance	$V_R = 0\text{V}, f = 1.0\text{MHz}$	C_J	-	1.5	pF
Reverse Recovery Time	$I_F = I_R = 10\text{mA}, R_L = 100\Omega,$ $I_{rr} = 1\text{mA}$	t_{rr}	-	4	ns

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING AND MARKING INFORMATION			
ORDERING CODE ⁽¹⁾	MARKING	PACKAGE	PACKING
BAV99W RF	A7	SOT-323	3K / 7" Reel
BAV99W RFG	A7	SOT-323	3K / 7" Reel

Notes:

1. "G" means green compound (halogen free)

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

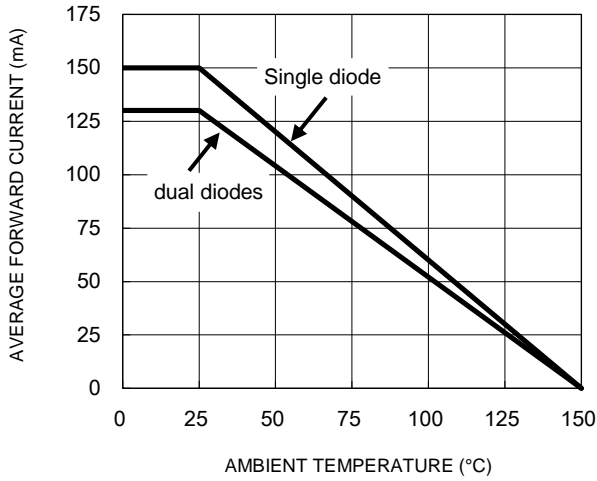


Fig.2 Typical Junction Capacitance

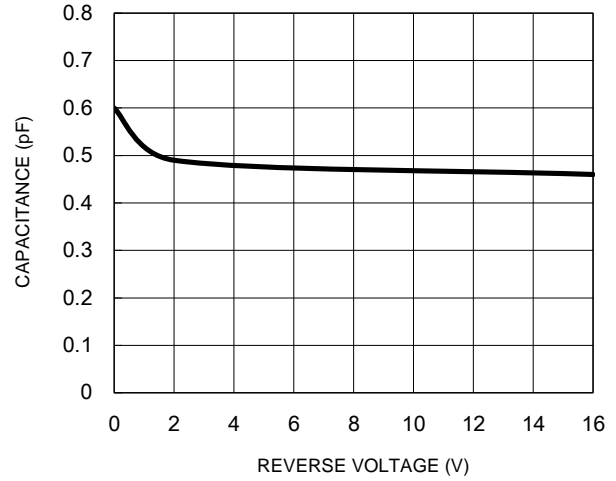


Fig.3 Typical Reverse Characteristics

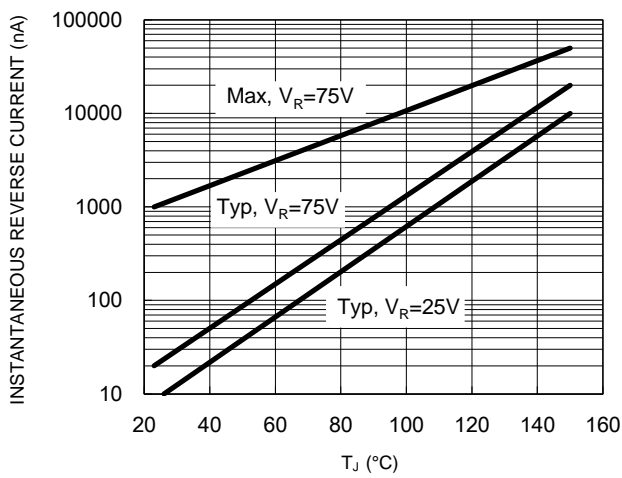


Fig.4 Typical Forward Characteristics

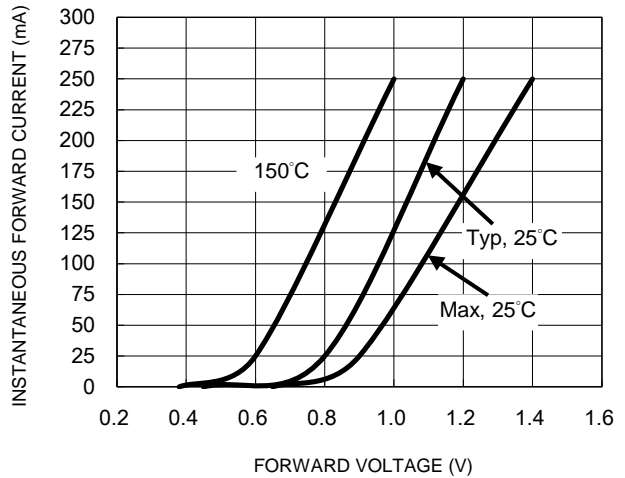
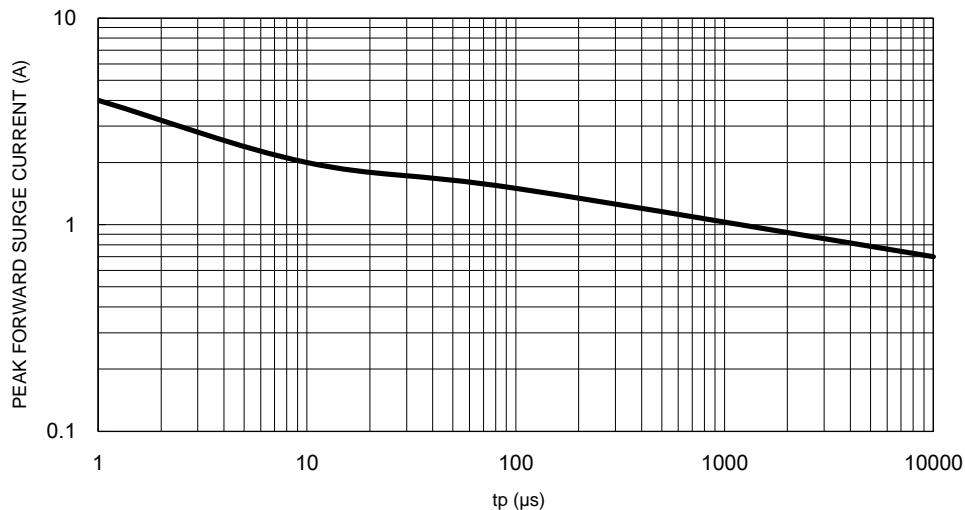
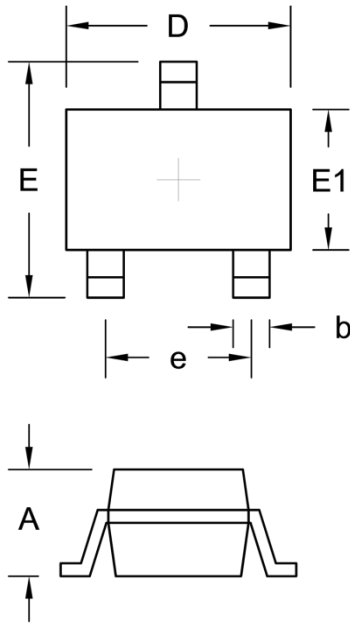


Fig.5 Maximum Non-Repetitive Forward Surge Current



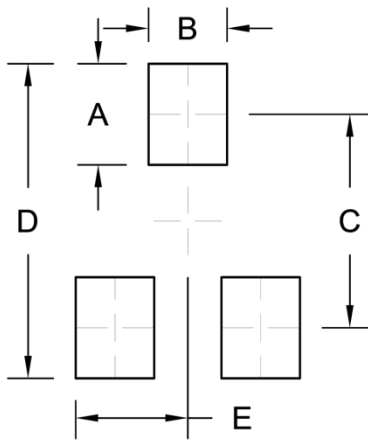
PACKAGE OUTLINE DIMENSIONS

SOT-323



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.80	1.10	0.031	0.043
b	0.25	0.40	0.010	0.016
D	1.80	2.20	0.071	0.087
E	1.80	2.40	0.071	0.094
E1	1.15	1.35	0.045	0.053
e	1.30 (TYP)		0.051 (TYP)	

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	0.90	0.035
B	0.70	0.028
C	1.90	0.075
D	2.80	0.110
E	1.00	0.039

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