150mA, 85V Switching Diode

FEATURES

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

APPLICATIONS

- For switching power supply

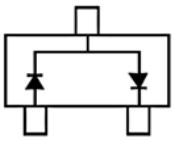
MECHANICAL DATA

- 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
$T_{J\ MAX}$	150	°C
Package	SOT-323	

Pb-Free RoHS COMPLIANT

SOT-323



ABSOLUTE MAXIMUM RATINGS (T_A = 25°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	I_F	150	mA
	Dual diodes		130	mA
Power dissipation		P_D	200	mW
Non-Repetitive peak forward surge current	t = 1μs	I_{FSM}	4	A
	t = 1ms		1	A
	t = 1s		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

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THERMAL PERFORMANCE

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

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode[1]	I_F = 1mA, T_J = 25°C	V_F	-	0.715	V
	I_F = 10mA, T_J = 25°C		-	0.855	V
	I_F = 50mA, T_J = 25°C		-	1.000	V
	I_F = 150mA, T_J = 25°C		-	1.250	V
Reverse current per diode[2]	V_R = 25 V, T_J = 25°C	I_R	-	30	nA
	V_R = 75 V, T_J = 25°C		-	1	μA
	V_R = 25 V, T_J = 150°C		-	30	μA
	V_R = 75 V, T_J = 150°C		-	50	μA
Junction capacitance	V_R = 0V, f = 1.0MHz	C_J	-	1.5	pF
Reverse Recovery Time	I_F = I_R = 10mA, R_L = 100Ω, I_{rr} = 1mA	t_{rr}	-	4	ns

Notes:

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

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)

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CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

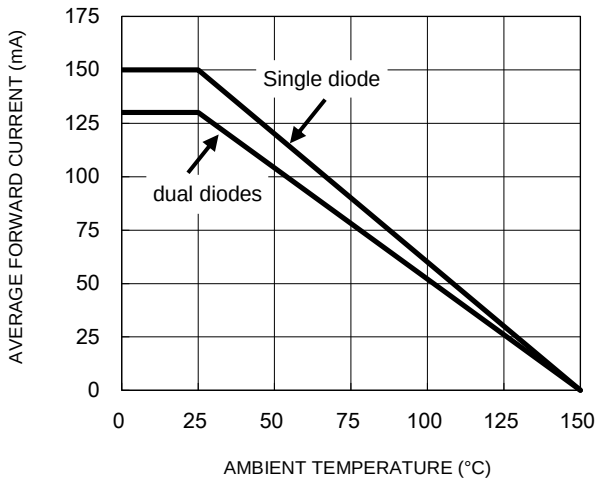


Fig.2 Typical Junction Capacitance

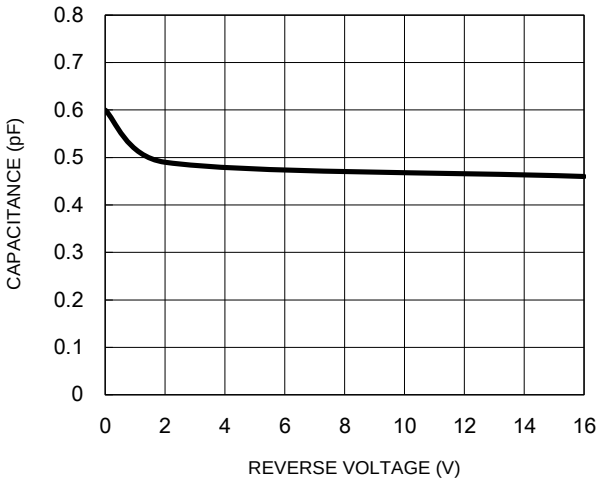


Fig.3 Typical Reverse Characteristics

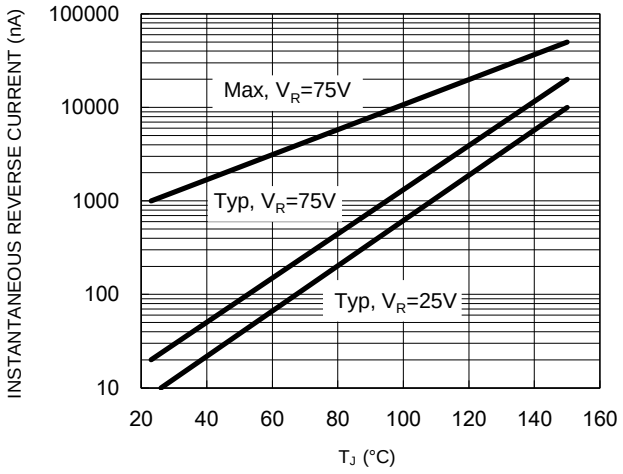


Fig.4 Typical Forward Characteristics

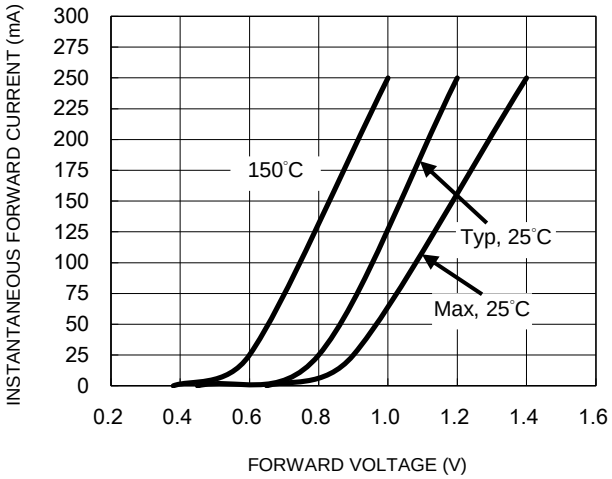
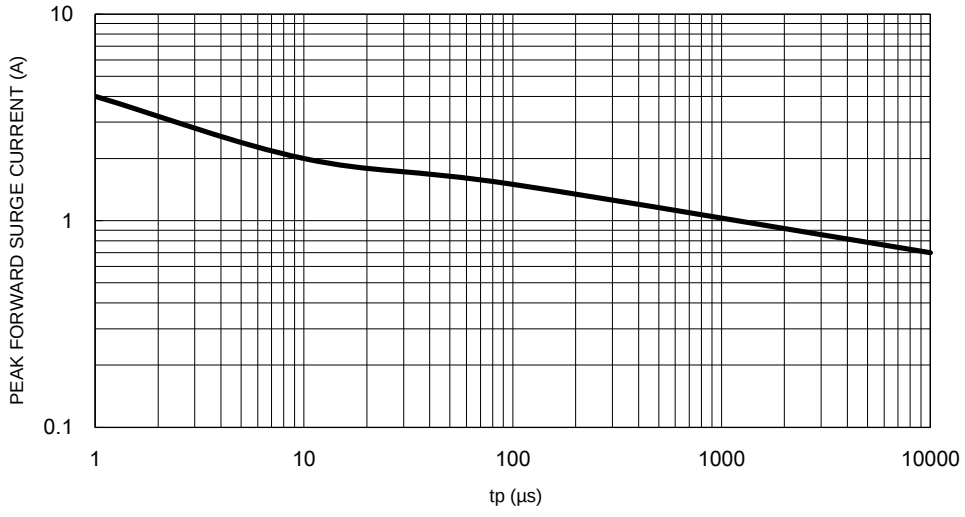


Fig.5 Maximum Non-Repetitive Forward Surge Current



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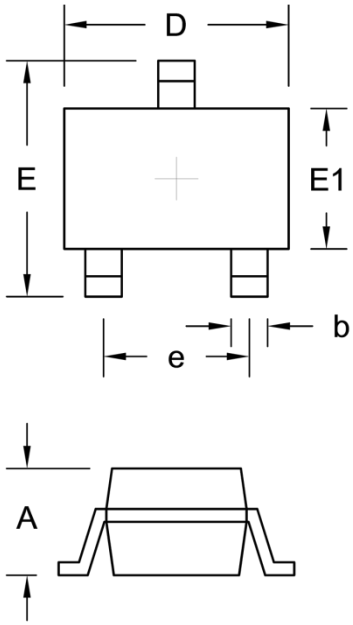
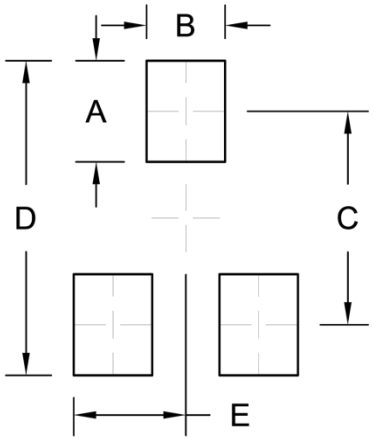
PACKAGE OUTLINE DIMENSIONS

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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