

## 150mA, 85V Switching Diode Array

### 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

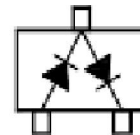
### APPLICATIONS

- For switching power supply

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	150	mA
$V_{RRM}$	85	V
$I_{FSM}$ at $t=1\mu\text{s}$	4	A
$V_F$ at $I_F=150\text{mA}$	1.25	V
$T_{J\text{ MAX}}$	150	°C
Package	SOT-323	

### MECHANICAL DATA

- Case: SOT-323
- Molding compound meets UL 94 V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Weight: 5mg (approximately)



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER		SYMBOL	VALUE	UNIT
Marking code on the device			A7	
Power dissipation		$P_D$	200	mW
Repetitive peak reverse voltage		$V_{RRM}$	85	V
Reverse voltage		$V_R$	75	V
Repetitive peak forward current		$I_{FRM}$	500	mA
Forward current	Single diode load	$I_F$	150	mA
	Double diodes load		130	
Non-Repetitive peak forward surge current	$t=1\mu\text{s}$	$I_{FSM}$	4	A
	$t=1\text{ms}$		1	
	$t=1\text{s}$		0.5	
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	MIN	MAX	UNIT
Forward voltage per diode <sup>(1)</sup>	$I_F = 1\text{mA}, T_J = 25^\circ\text{C}$	$V_F$	-	0.715	V
	$I_F = 10\text{mA}, T_J = 25^\circ\text{C}$			0.855	
	$I_F = 50\text{mA}, T_J = 25^\circ\text{C}$			1.000	
	$I_F = 150\text{mA}, T_J = 25^\circ\text{C}$			1.250	
Reverse current per diode <sup>(2)</sup>	$V_R = 25\text{V}, T_J = 25^\circ\text{C}$	$I_R$	-	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	1 MHz, $V_R = 0\text{V}$	$C_J$	-	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 INFORMATION**

ORDERING CODE (Note 1)	PACKAGE	PACKING
BAV99W RF	SOT-323	3K / 7" Reel
BAV99W RFG	SOT-323	3K / 7" Reel

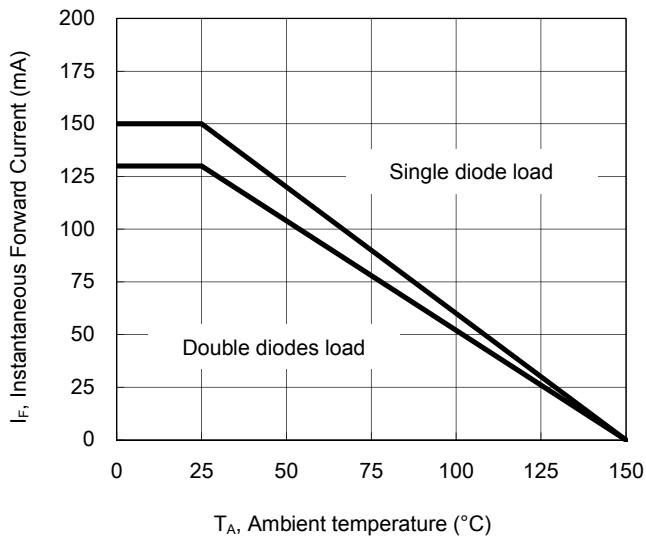
**Note:**

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

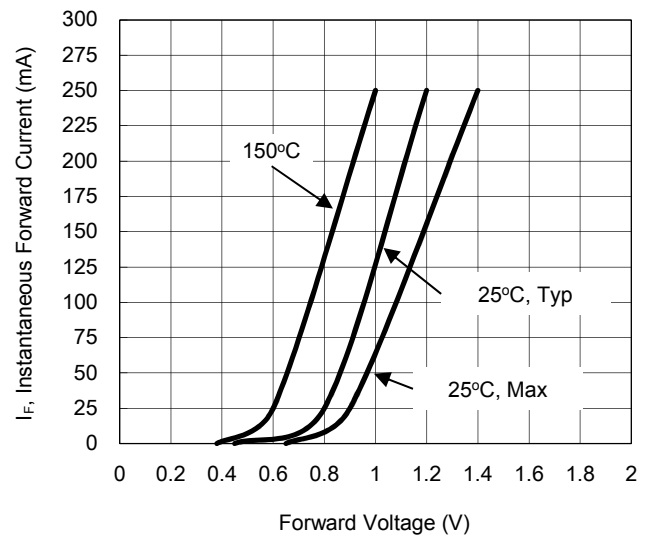
## CHARACTERISTICS CURVES

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

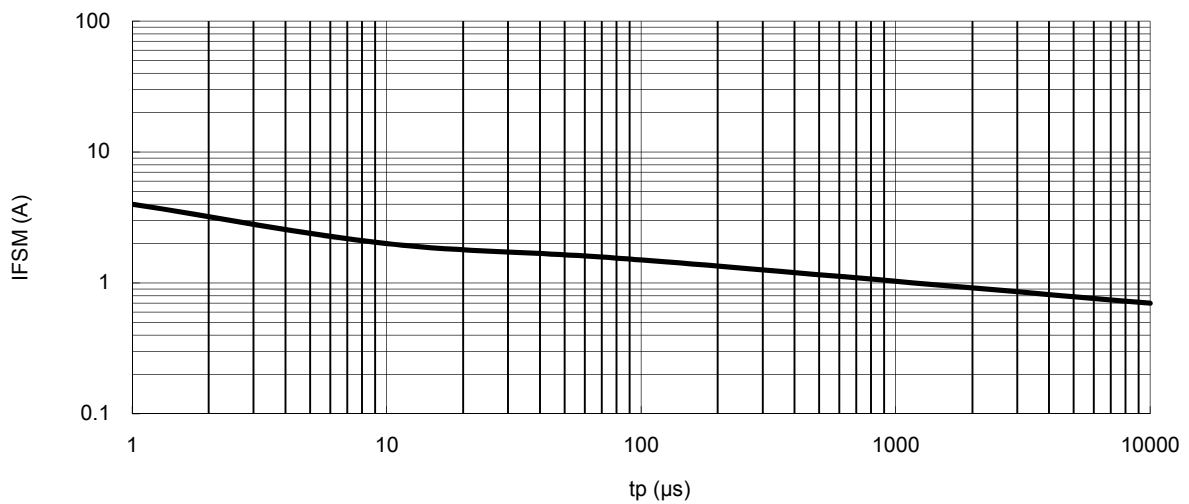
**Fig.1 Forward Current Derating Curve**



**Fig. 2 Typical Forward Characteristics**



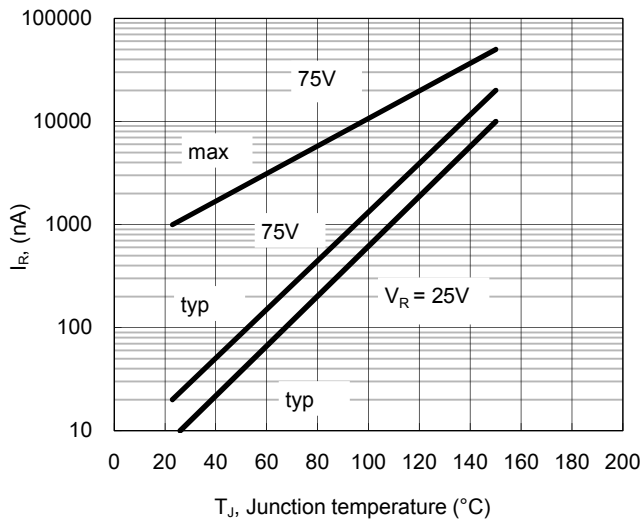
**Fig.3 Maximum Non-repetitive Peak Forward Surge Current**



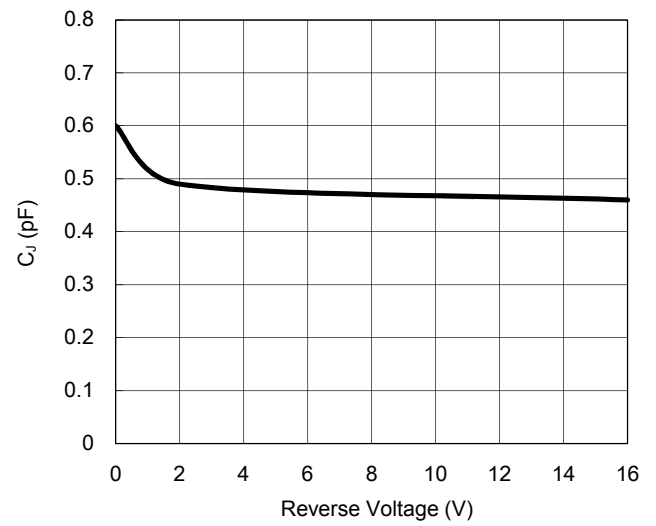
## CHARACTERISTICS CURVES

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

**Fig.4 Typical Reverse Characteristics**

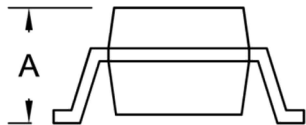
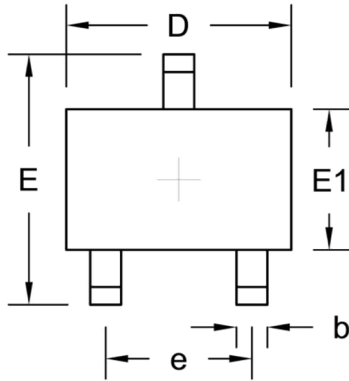


**Fig. 5 Typical Capacitance**



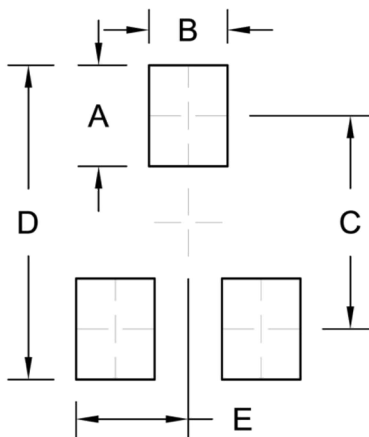
## PACKAGE OUTLINE DIMENSION

SOT-323



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.80	1.10	0.031	0.043
b	0.15	0.40	0.006	0.016
D	1.80	2.20	0.071	0.087
E	2.00	2.45	0.079	0.096
E1	1.15	1.35	0.045	0.053
e	1.20	1.40	0.047	0.055

## 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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