

FEATURES

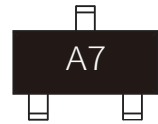
- | Fast Switching Speed

- | For General Purpose Switching Applications

- | High Conductance



SOT-23



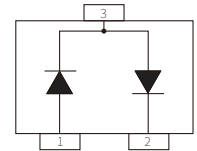
Marking

MECHANICAL DATA

- | SOT-23 Small Outline Plastic Package

- | Polarity: Color band denotes cathode end

- | Mounting Position: Any



Schematic Symbol

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit	
Repetitive Peak Reverse Voltage	V_{RRM}	85	V	
Continuous Reverse Voltage	V_R	75	V	
Continuous Forward Current (Double Diode Loaded)	I_F	125	mA	
Continuous Forward Current (Single Diode Loaded)	I_F	215	mA	
Repetitive Peak Forward Current	I_{FRM}	450	mA	
Non-repetitive Peak Forward Surge Current at	I_{FSM}	$t=1s$	0.5	A
		$t=1ms$	1	A
		$t=1\mu s$	4.5	A
Power Dissipation	P_{tot}	350	mW	
Junction Temperature	T_J	150	$^{\circ}\text{C}$	
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}\text{C}$	

ELECTRICAL CHARACTERISTICS($T_A=25^\circ\text{C}$)

Parameter	Test Condition	Symbol	Min.	Max.	Unit
Reverse Current at	$V_R = 25\text{V}$	I_R		30	nA
	$V_R = 75\text{V}$			1	uA
	$V_R = 25\text{V}, T_j = 150^\circ\text{C}$			30	uA
	$V_R = 75\text{V}, T_j = 150^\circ\text{C}$			50	uA
Forward Voltage	$I_F = 1\text{mA}$	V_F		0.715	V
	$I_F = 10\text{mA}$			0.855	V
	$I_F = 50\text{mA}$			1	V
	$I_F = 150\text{mA}$			1.25	V
Capacitance between terminals	$V_R = 0\text{V}, f = 1\text{MHz}$	C_T		1.5	pF
Reverse Recovery Time	$I_F = I_R = 10\text{mA}$ $I_R = 1\text{mA}, R_L = 100\Omega$	t_{rr}		4	nS

CHARACTERISTIC CURVES

Fig 1. Reverse Voltage vs Reverse Current
BV-1.0 to 100uA

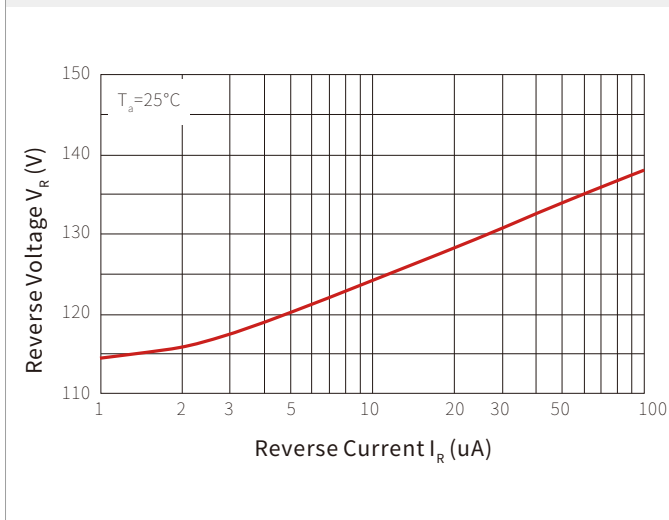
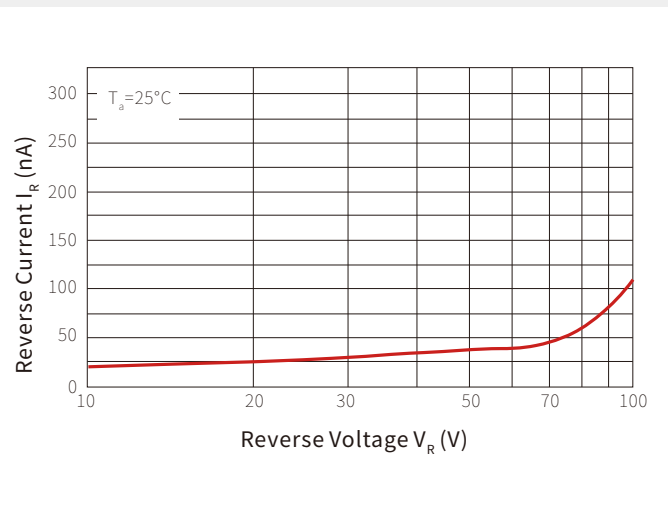
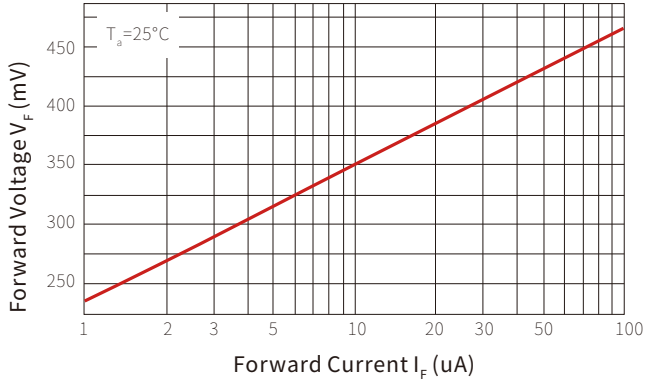


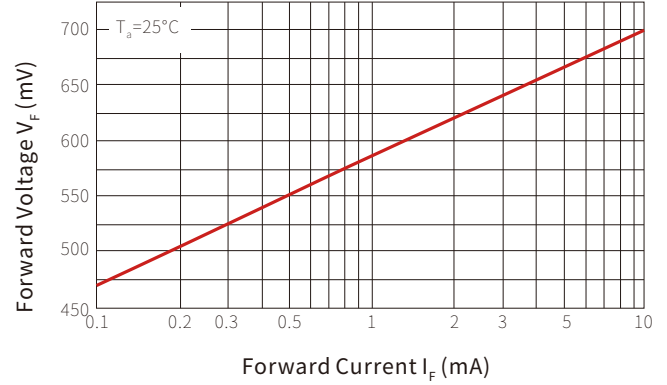
Fig 2. Reverse Current vs Reverse Voltage
IR-10 to 100V



**Fig 3. Forward Voltage vs Forward Current
VF-1.0 to 100uA**



**Fig 4. Forward Voltage vs Forward Current
VF-1.0 to 100mA**



**Fig 5. Forward Voltage vs Forward Current
VF-10 to 800mA**

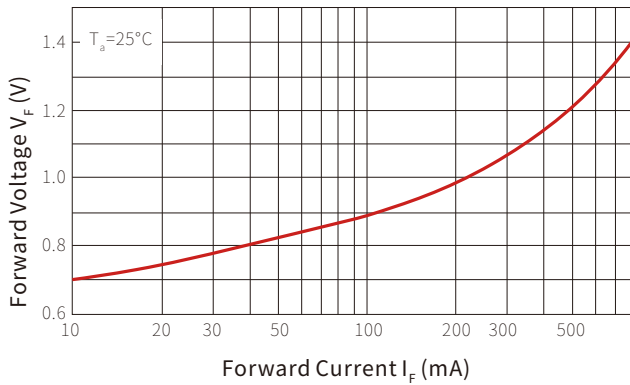


Fig 6. Total Capacitance vs Reverse Voltage

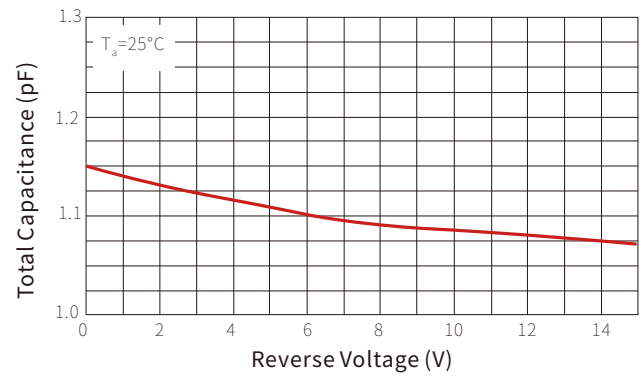
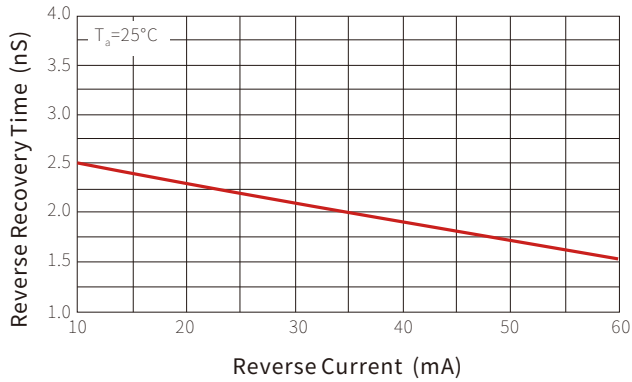
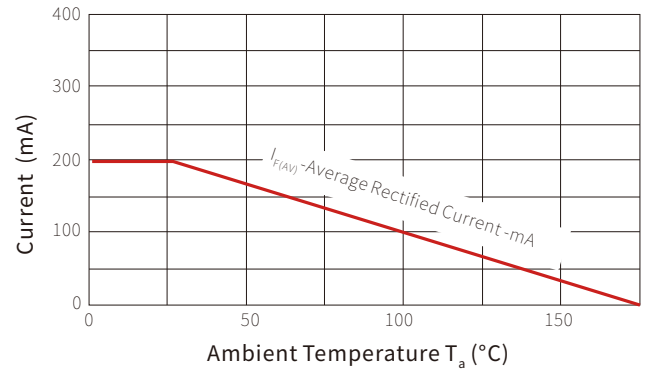
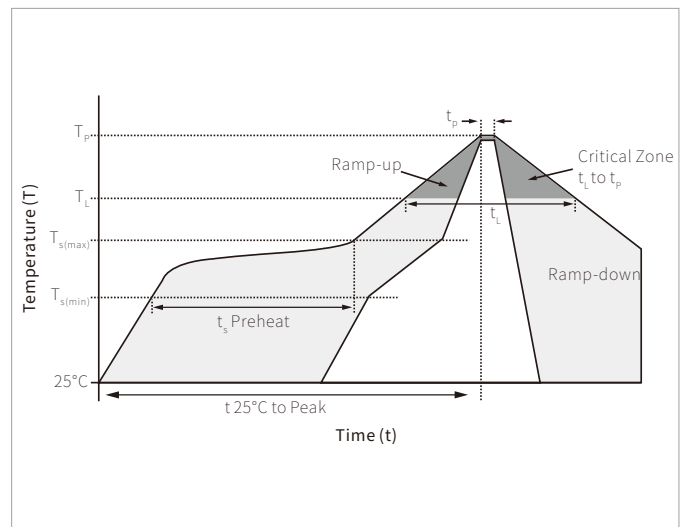


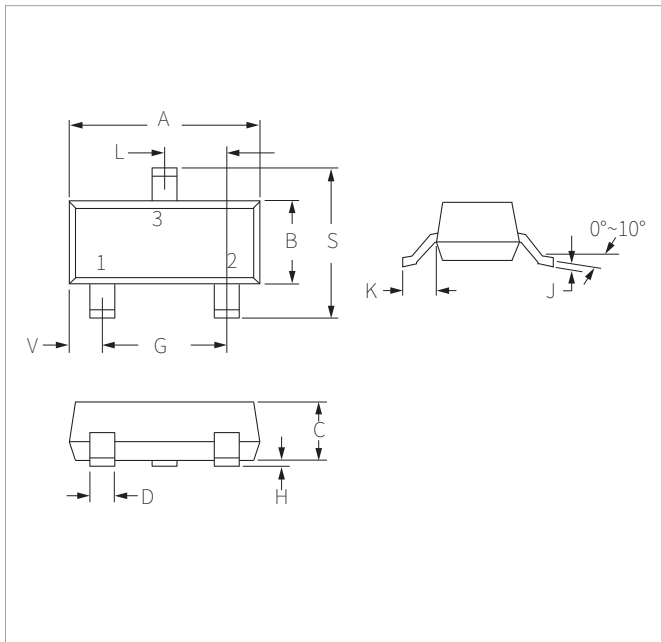
Fig 7. Reverse Recovery Time vs Reverse Current
 TRR-IR 10mA vs 60mA

Fig 8. Average Rectified Current ($I_{F(AV)}$) versus Ambient Temperature (T_A)


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

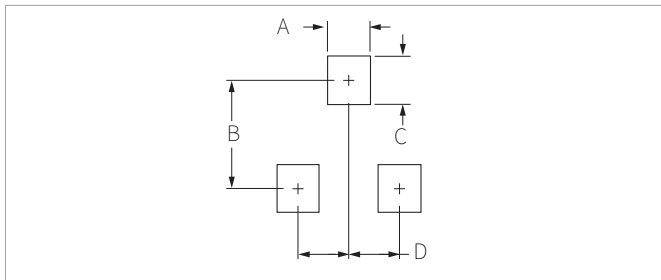


SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.04	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.89	1.11	0.035	0.044
D	0.37	0.50	0.015	0.020
G	1.78	2.04	0.070	0.081
H	0.01	0.100	0.001	0.004
J	0.085	0.180	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.10	2.64	0.083	0.104
V	0.45	0.60	0.018	0.024

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
BAV99	SOT-23	3000PCS	7"

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