

FEATURES

- | Fast Switching Device (TRR <4.0 nS)

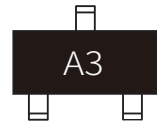
- | Power Dissipation of 150mW

- | High Stability and High Reliability

- | Low reverse leakage



SOT-23



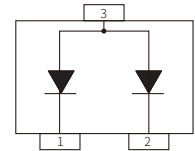
Marking

MECHANICAL DATA

- | SOT-23 Small Outline Plastic Package

- | Epoxy UL: 94V-0

- | 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
Reverse Peak Reverse Voltage	V_{RRM}	85	V
DC Blocking Voltage	V_R	80	V
Average Rectified Current	I_O	100	mA
Power Dissipation	P_D	150	mW
Non-repetitive Peak Forward Surge Current @ $t=8.3\text{ms}, T_A=25^{\circ}\text{C}$	I_{FSM}	2.0	A
Operating Junction Temperature	T_J	-55 to +150	$^{\circ}\text{C}$
Storage Temperature Range	T_S	-55 to +150	$^{\circ}\text{C}$
Typical Thermal Resistance	$R_{\theta JA}$	833	$^{\circ}\text{C}/\text{W}$

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

Parameter	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Breakdown Voltage	$I_R=100\mu\text{A}$	V_{BR}	80			V
Reverse Current	$V_R=30\text{V}$	I_R			0.1	μA
	$V_R=80\text{V}$				0.5	
Forward Voltage	$I_F=1\text{mA}$	V_F		0.61		V
	$I_F=10\text{mA}$			0.74		
	$I_F=100\text{mA}$			0.93	1.2	
Reverse Recovery Time	$I_F=I_R=10\text{mA}, R_f=100\Omega$ $V_R=6\text{V}, I_{rr}=0.1 \times I_R$	t_{rr}			4	nS
Capacitance	$V_R=0\text{V}, f=1\text{MHz}$	C_T		2.2	4	pF

CHARACTERISTIC CURVES

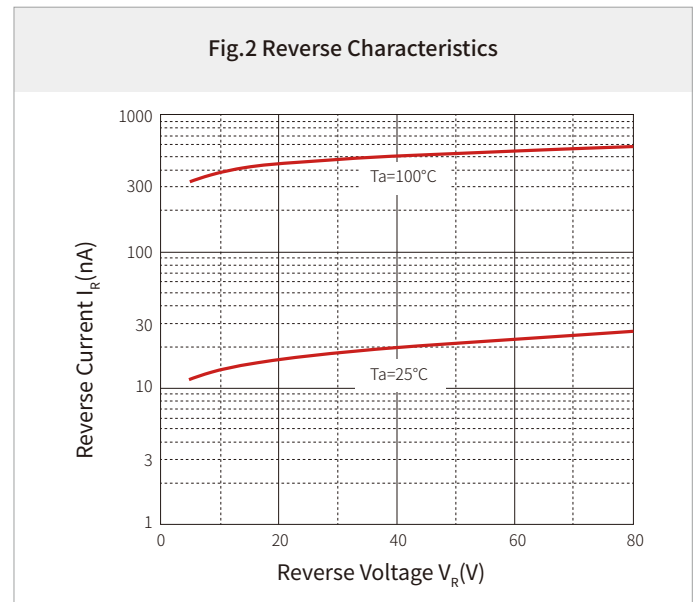
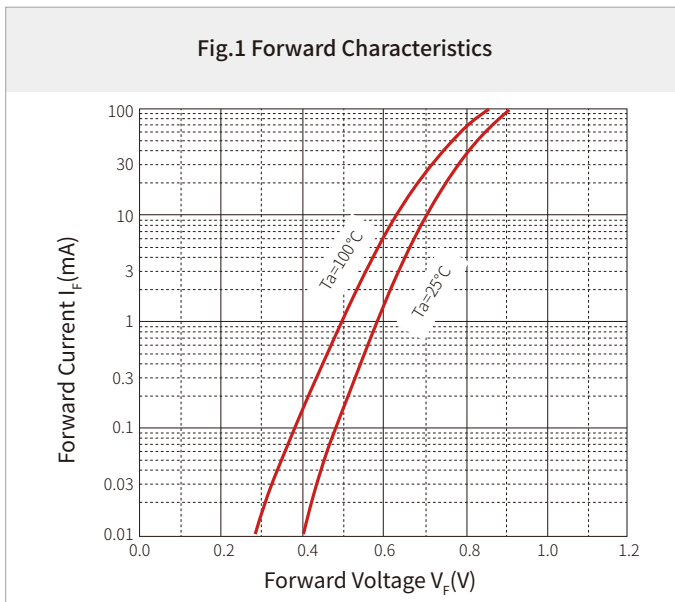
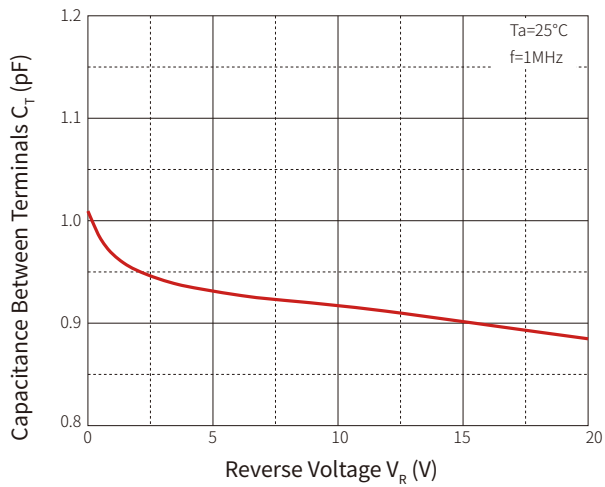
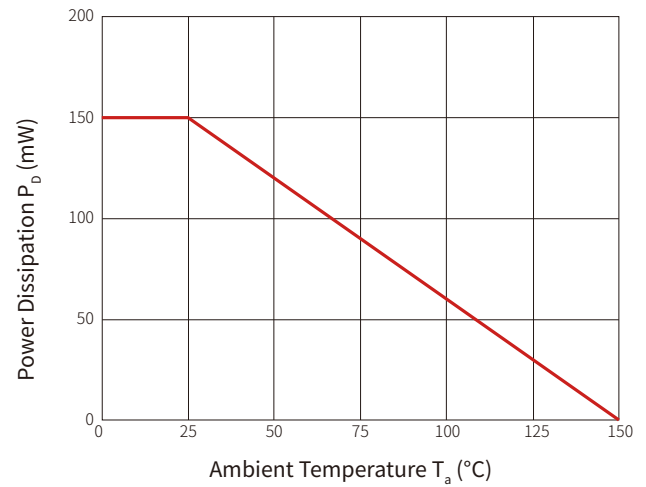
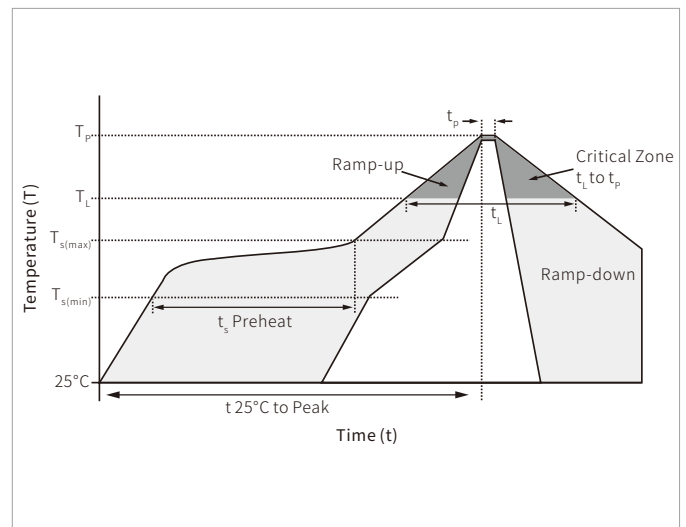


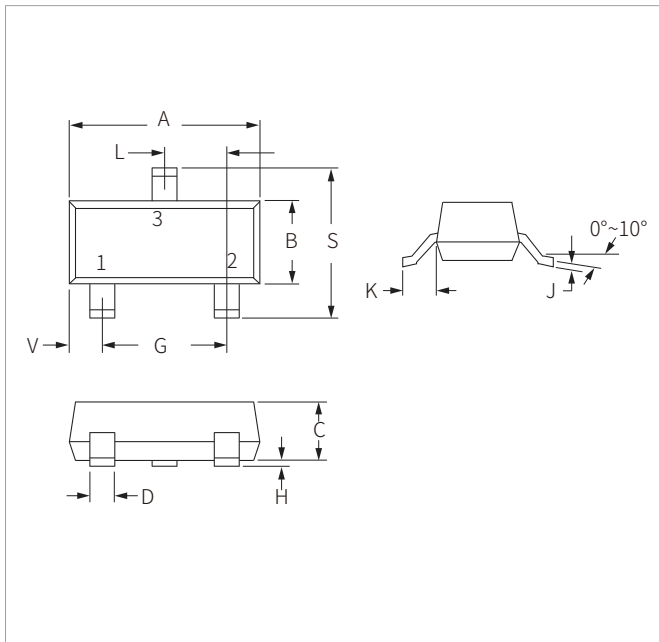
Fig.3 Capacitance Characteristics

Fig.4 Power Derating Curve


SOLDERING PARAMETERS

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

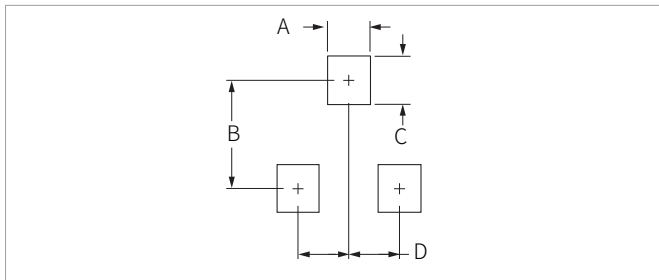


SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.05	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.90	1.15	0.035	0.045
D	0.37	0.50	0.015	0.020
G	1.75	2.05	0.069	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	2.65	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
1SS181	SOT-23	3000PCS	7"

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