

FEATURES

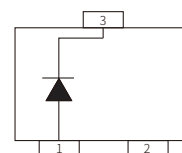
- | Fast Switching Speed
- | For General Purpose Switching Applications
- | High Conductance
- | Meet AEC-Q101 Requirements



SOT-23



Marking



Schematic Symbol

MECHANICAL DATA

- | SOT-23 Small Outline Plastic Package
- | Polarity: Color band denotes cathode end
- | Mounting Position: Any

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
Non-Repetitive Peak Reverse Voltage	V_{RM}	100	V
Peak Repetitive Peak Reverse Voltage	V_{RRM}	100	V
Working Peak Reverse Voltage	V_{RWM}	100	V
DC Blocking Voltage	V_R	100	V
RMS Reverse Voltage	$V_{R(RMS)}$	72	V
Forward Continuous Current	I_{FM}	300	mA
Average Rectified Output Current	I_O	200	mA
Non-Repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$	I_{FSM}	2.0	A
Power Dissipation	P_D	350	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

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

Parameter	Test Condition	Symbol	Min.	Max.	Unit
Forward Voltage	$I_F = 10\text{mA}$	V_F		1	V
Reverse breakdown voltage	$I_R = 100\mu\text{A}$	V_{BR}	100		V
	$I_R = 5\mu\text{A}$		75		V
Reverse Current	$V_R = 75\text{V}$	I_R		5	μA
	$V_R = 25\text{V}$			25	nA
Capacitance between terminals	$V_R=0\text{V}$, $f=1\text{MHz}$	C_T		4	pF
Reverse Recovery Time	$I_F=I_R=10\text{mA}$, $V_R=6\text{V}$, $I_{rr}=0.1I_{R}$, $R_L=100\Omega$	t_{rr}		4	ns

CHARACTERISTIC CURVES

Fig 1. Forward Characteristics

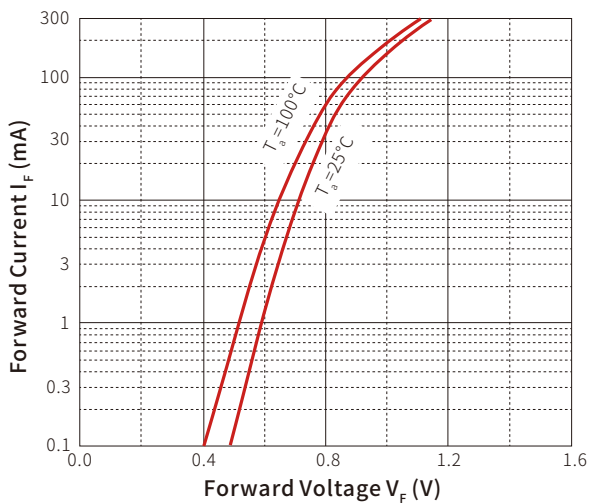


Fig 2. Reverse Characteristics

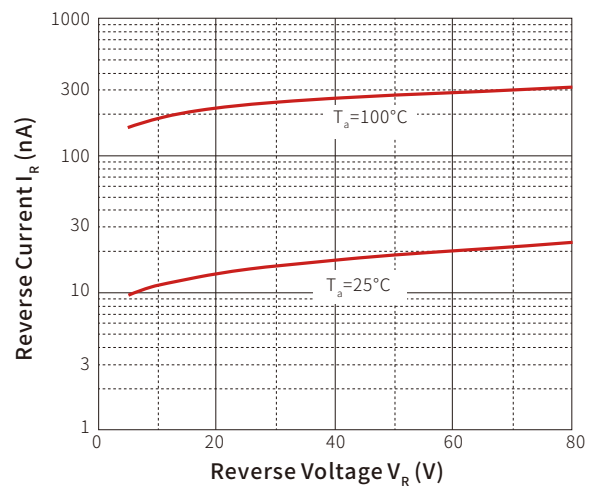
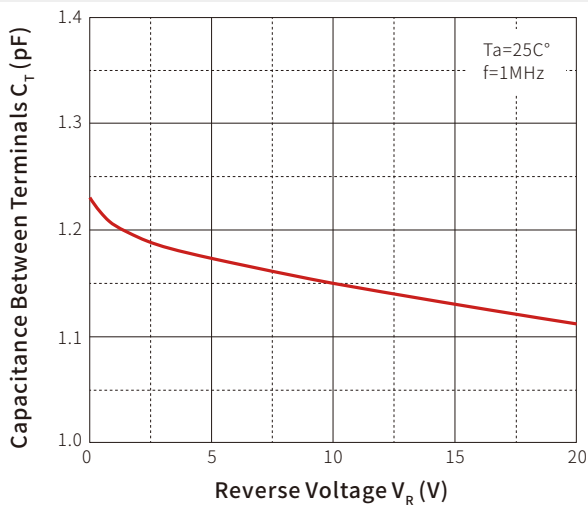
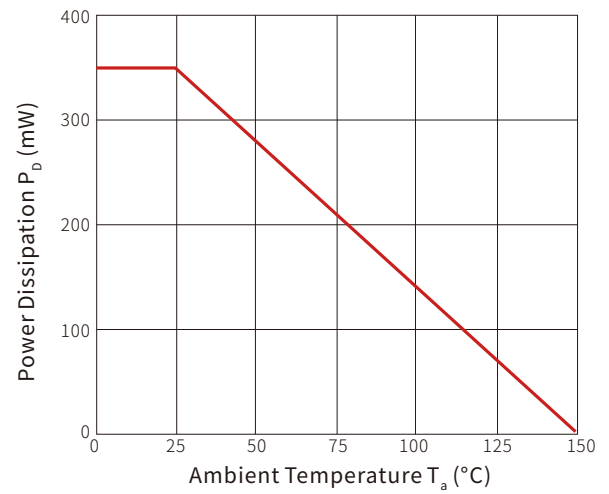
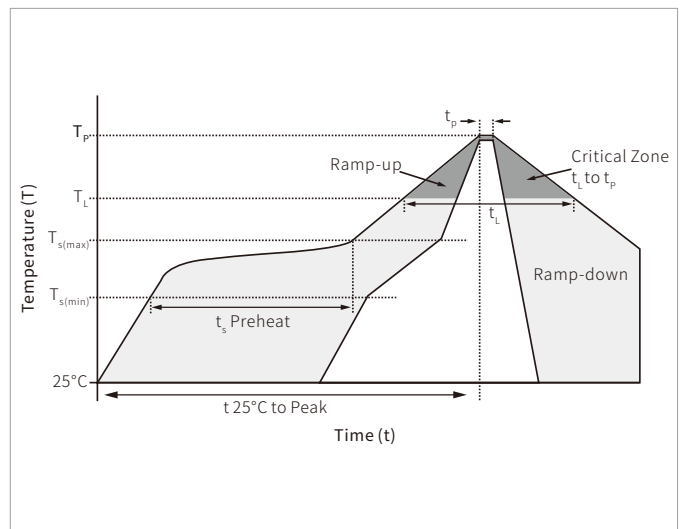


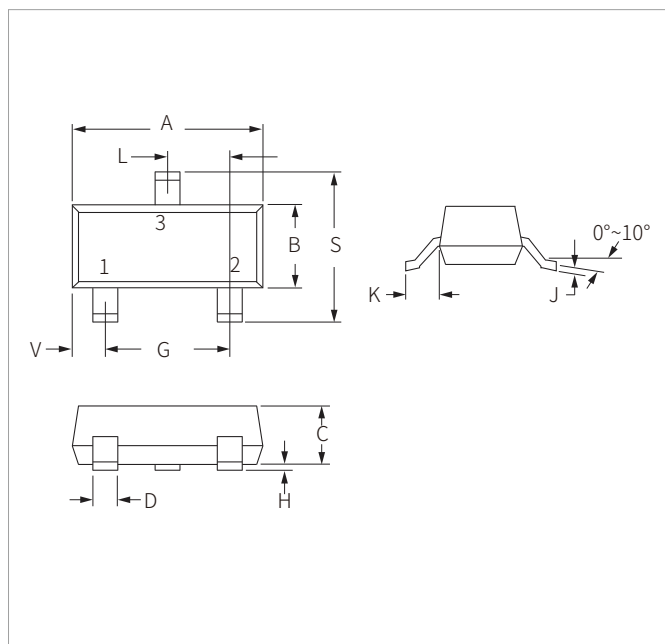
Fig 3. Capacitance Characteristics

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 $^\circ\text{C}$

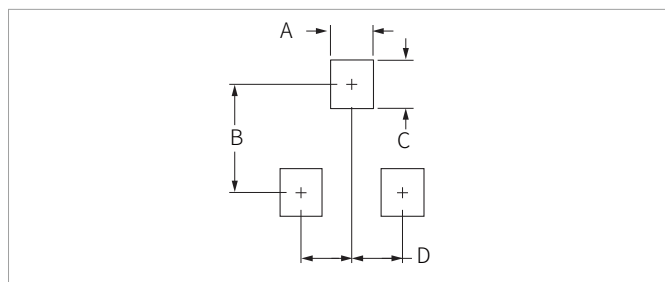


SOT-23 PACKAGE INFORMATION



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
MMBD4148Q	SOT-23	3000PCS	7"

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