

FEATURES

- | Fast Switching Speed
- | Surface Mount Package Ideally Suited for Automated Insertion
- | For General Purpose Switching Applications
- | Meet AEC-Q101 Requirements



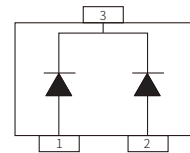
SOT-23



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

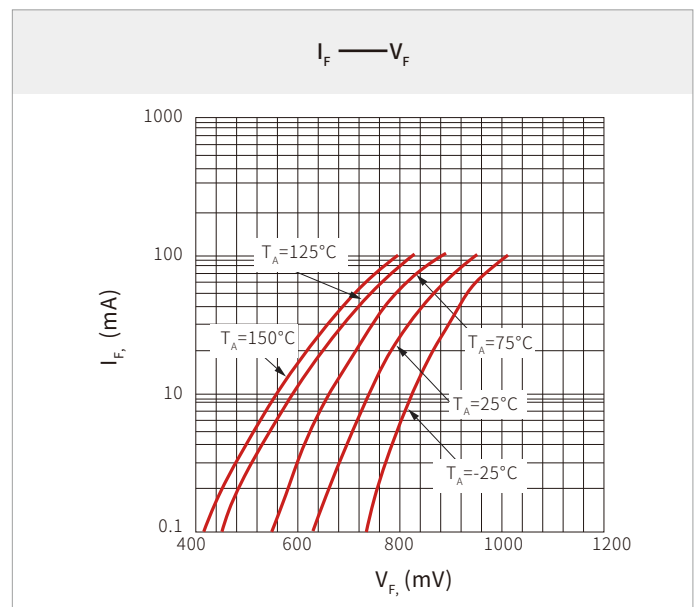
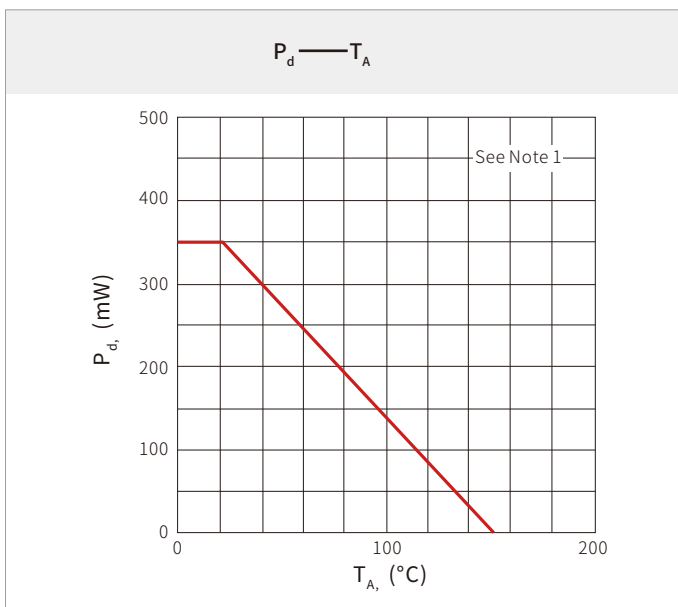
MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

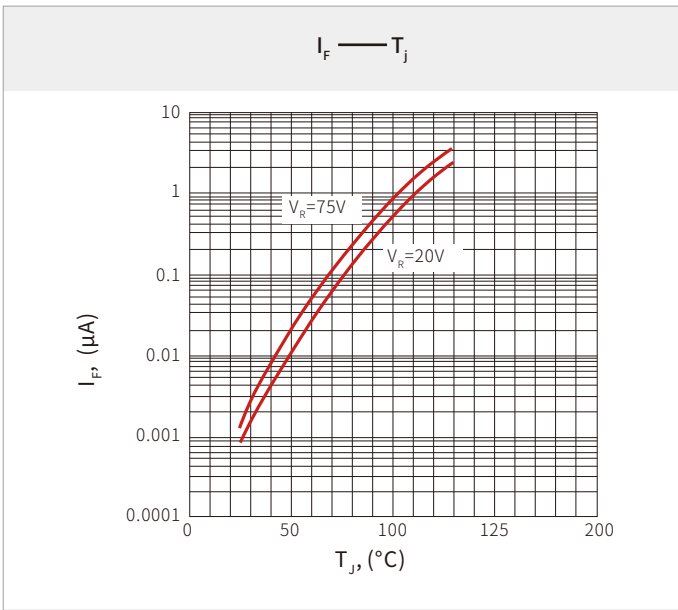
Parameter	Symbol	Value	Unit	
Repetitive Reverse Voltage	V_{RRM}	100	V	
Average Rectified Forward Current	$I_{F(AV)}$	200	mA	
Non-repetitive Peak Forward Surge Current	I_{FSM}	PW=1.0S	1.0	A
		PW=1.0 μ S	2.0	A
Power Dissipation	P_C	350	mW	
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}\text{C}/\text{W}$	
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		1.0	V
Reverse Breakdown Voltage	$I_R = 5.0\mu\text{A}$	V_R	75		V
	$I_R = 100\mu\text{A}$		100		V
Instantaneous Reverse Current	$V_R = 20\text{V}$	I_R		25	nA
	$V_R = 20\text{V}, T_A = 150^{\circ}\text{C}$			50	μA
	$V_R = 75\text{V}$			5.0	μA
Total Capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$	C_T		4.0	pF
Reverse Recovery Time	$I_F = 10\text{mA}, V_R = 6.0\text{V}$ $I_{RR} = 1.0\text{mA}, R_L = 100\Omega$	t_{rr}		4.0	ns

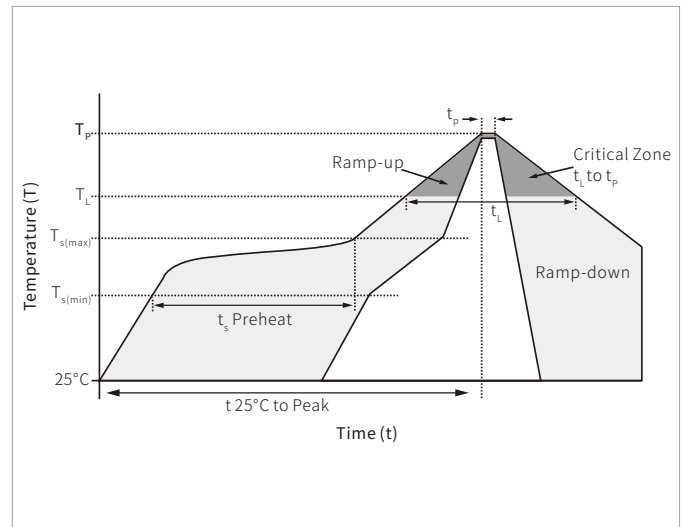
CHARACTERISTIC CURVES



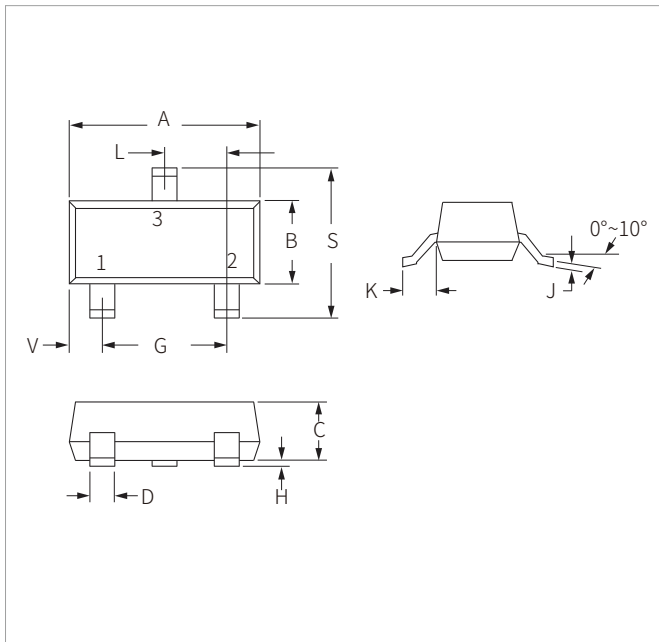


SOLDERING PARAMETERS

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

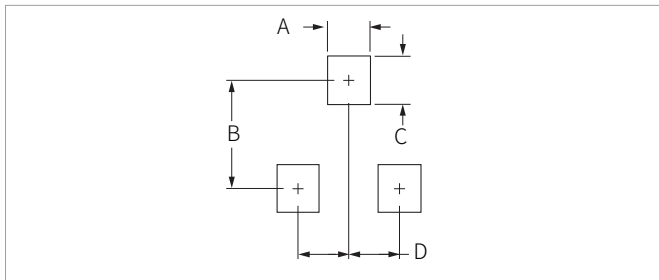


SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.05	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
MMBD4148CCQ	SOT-23	3000PCS	7"

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