

## FEATURES

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



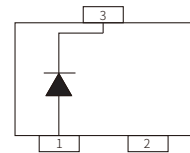
SOT-23



Marking

## MECHANICAL DATA

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



Schematic Symbol

## APPROVALS

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

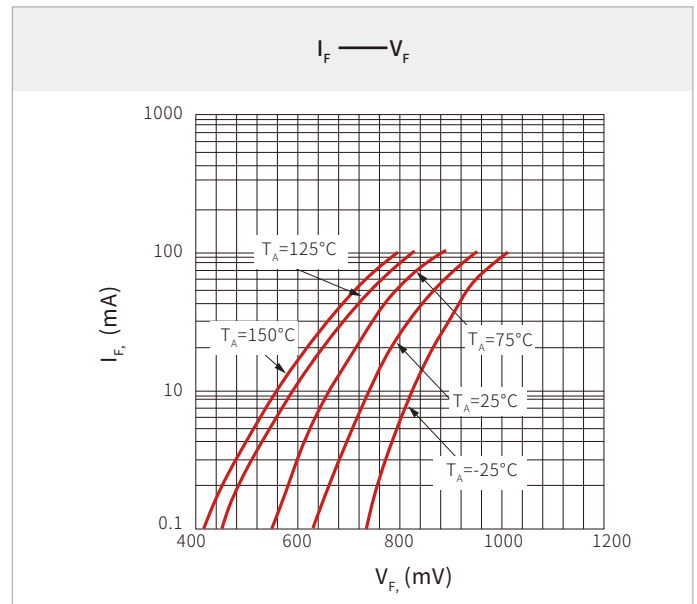
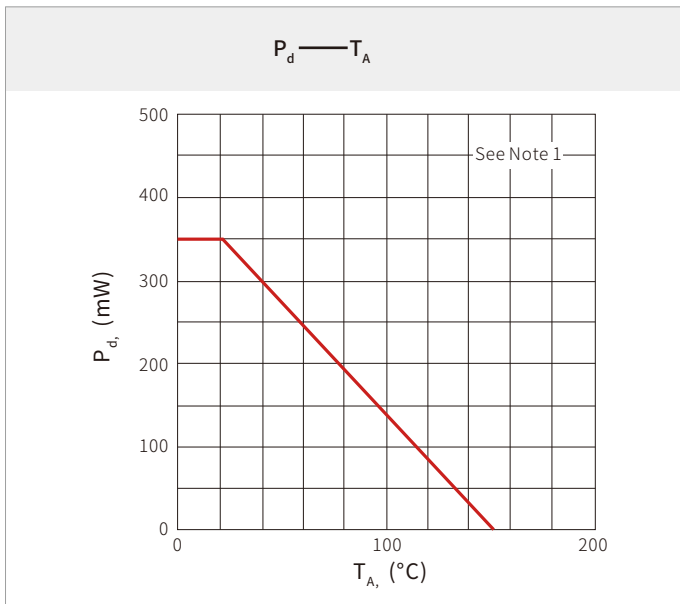
## MAXIMUM RATINGS (T<sub>A</sub>=25°C)

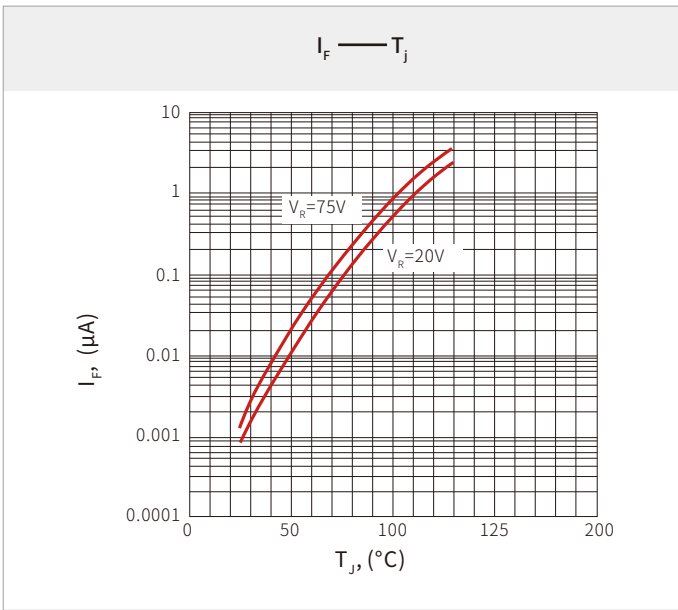
Parameter	Symbol	Value	Unit	
Repetitive Reverse Voltage	V <sub>RRM</sub>	100	V	
Average Rectified Forward Current	I <sub>F(AV)</sub>	200	mA	
Non-repetitive Peak Forward Surge Current	I <sub>FSM</sub>	PW=1.0S	1.0	A
		PW=1.0μS	2.0	A
Power Dissipation	P <sub>C</sub>	350	mW	
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	357	°C/W	
Junction Temperature	T <sub>J</sub>	150	°C	
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°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	$\mu\text{A}$
	$V_R = 75\text{V}$			5.0	$\mu\text{A}$
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

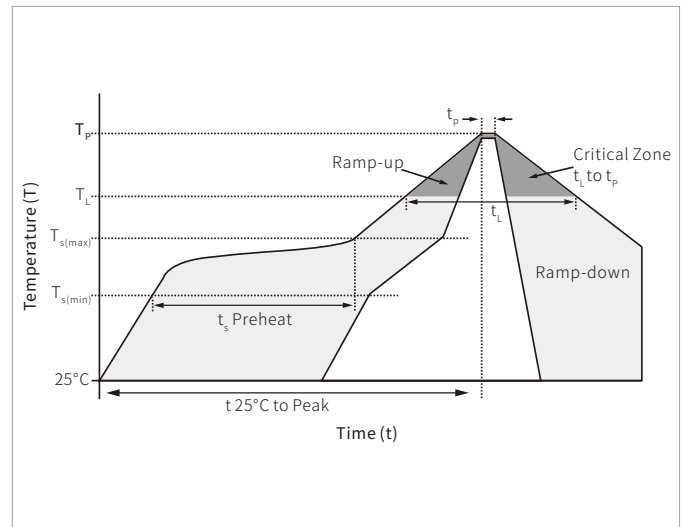
## CHARACTERISTIC CURVES



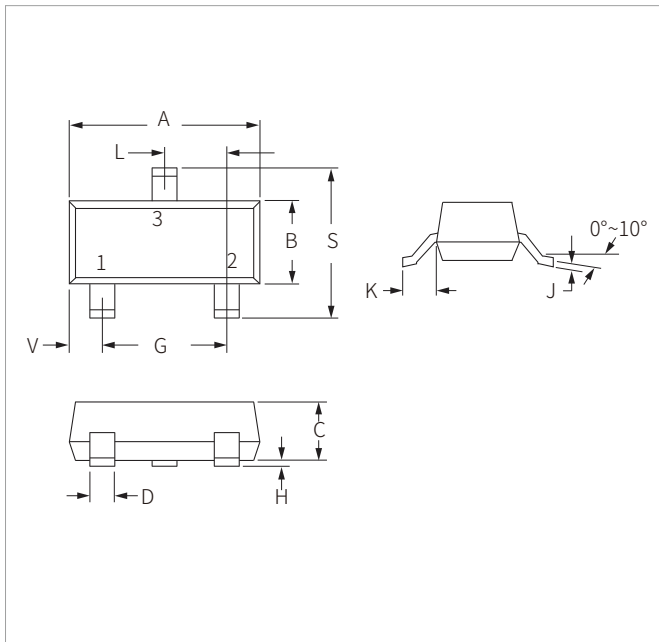


## SOLDERING PARAMETERS

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

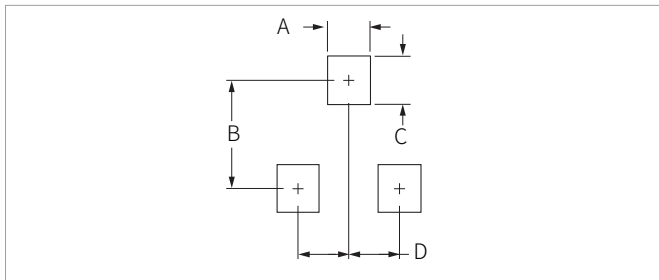


## SOT-23 PACKAGE INFORMATION



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
MMBD4148Q	SOT-23	3000PCS	7"

**Headquarters**

No.3387 Shendu Road  
Pujiang I&E Park  
Minhang Shanghai China  
201000

**Hotline**

400-021-5756

**Web**

<https://www.semiware.com>

**Sales Center**

Tel: 86-21-3463-7458  
Email: [sales18@semiware.com](mailto:sales18@semiware.com)

**Customer Service**

Tel: 86-21-5484-1001  
Email: [sales17@semiware.com](mailto:sales17@semiware.com)

**Technical Support**

Tel: 86-21-3463-7654  
Email: [fae01@semiware.com](mailto:fae01@semiware.com)

**Complaint & Suggestions**

Tel: 86-21-3463-7172  
Ext: 8868  
Email: [cs03@semiware.com](mailto:cs03@semiware.com)

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