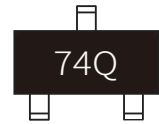


## FEATURES

- | High Current Capability
- | Low Forward Voltage Drop
- | Extremely Fast Switching Speed
- | Meet AEC-Q101 Requirements



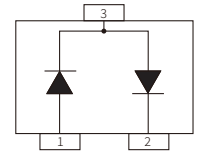
SOT-23



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

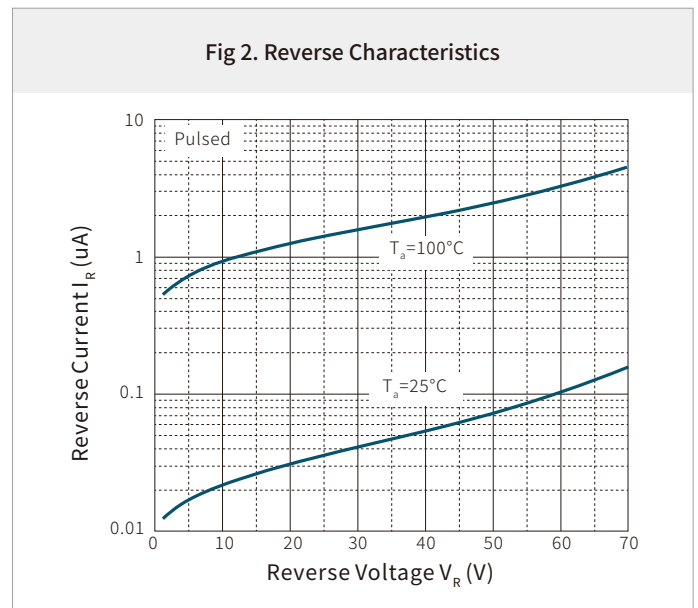
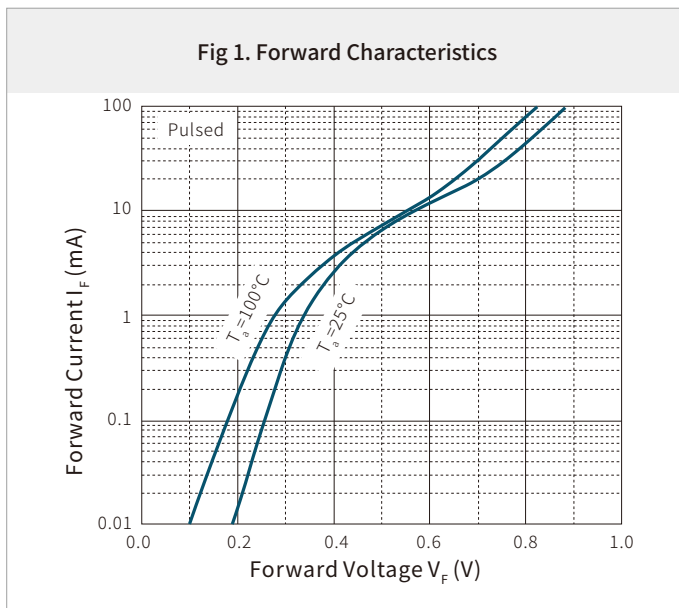
## MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ )

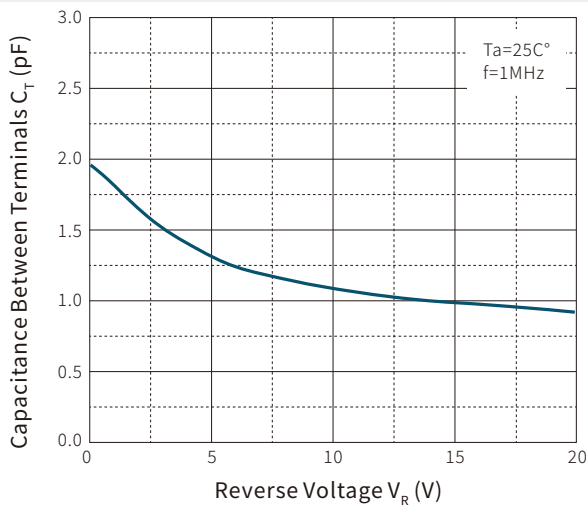
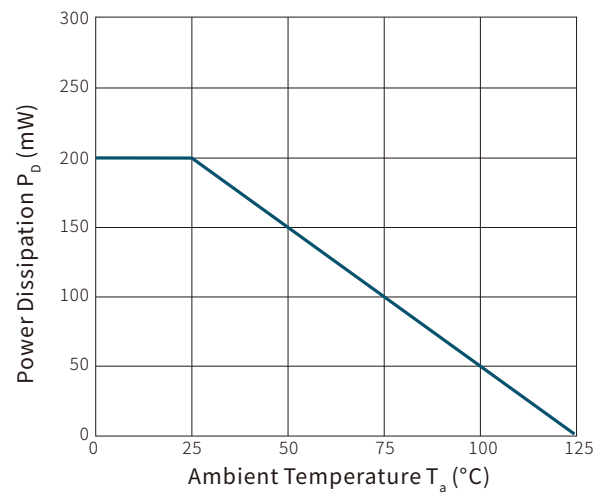
Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	70	V
Maximum DC blocking voltage	$V_{DC}$	70	V
Maximum average forward rectified current	$I_{FM}$	70	mA
Typical thermal resistance	$R_{\theta JA}$	430	$^{\circ}\text{C}/\text{W}$
Power Dissipation	$P_D$	200	mW
Junction Temperature	$T_J$	125	$^{\circ}\text{C}$
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
Reverse breakdown voltage	$I_R = 10\mu\text{A}$	$V_{(BR)}$	70		V
Maximum reverse current	$V_R = 50\text{V}$	$I_R$		200	nA
Maximum forward voltage	$I_F = 1\text{mA}$	$V_{F1}$		410	mV
	$I_F = 15\text{mA}$	$V_{F2}$		1000	mV
Type junction capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$	$C_D$		2	pF
Reverse Recovery Time	$I_F = I_R = 10\text{mA}$ $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$	$t_{rr}$		5	nS

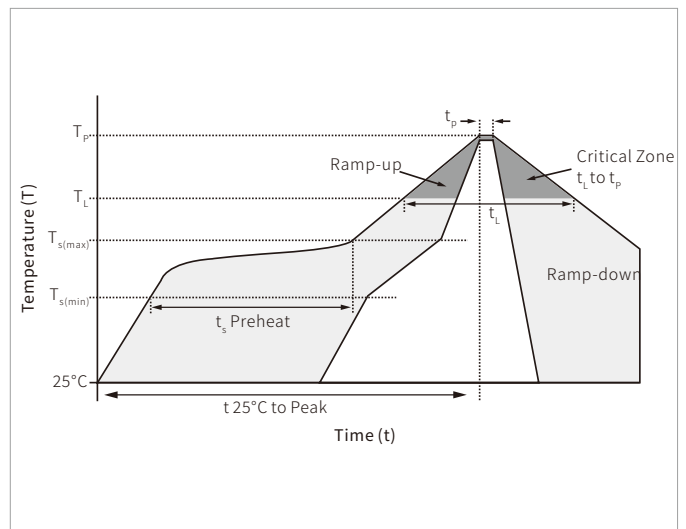
## CHARACTERISTIC CURVES



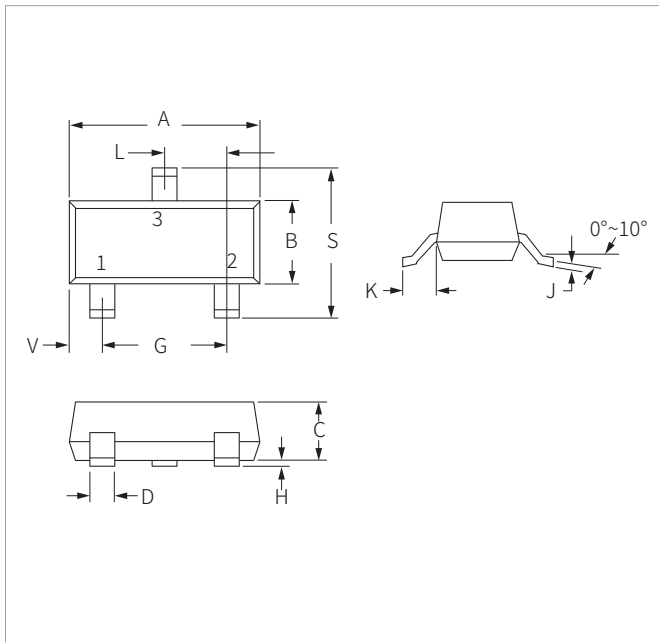
**Fig 3. Capacitance Characteristics**

**Fig 4. Power Derating Curve**


## SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ( $T_{s(min)}$ )	150°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

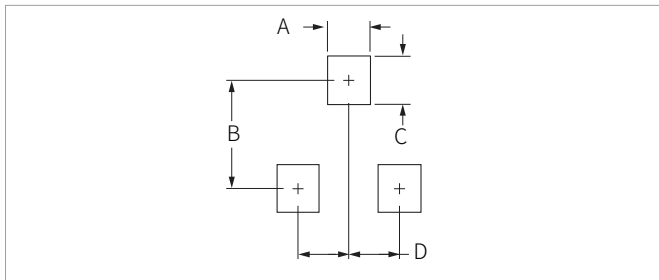


## SOT-23 PACKAGE INFORMATION



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
BAS70-04Q	SOT-23	3000PCS	7"

To find your local partner within Semiwell' s website : [www.semiwell.com.cn](http://www.semiwell.com.cn)

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