

FEATURES

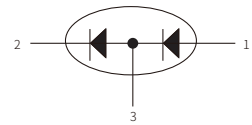
- Small plastic SMD package
- High switching speed: max. 4ns
- Repetitive peak reverse voltage: max. 110V
- Repetitive peak forward current: max. 900mA



SOT-23



Marking



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 peak reverse voltage		V_{RRM}	110	V
Continuous reverse voltage		V_R	100	V
Continuous forward current(single diode loaded)		I_F	430	mA
Continuous forward current(double diode loaded)			250	mA
Non-repetitive peak forward current @square wave, Tj=125°C prior to surge	t=1μs	I_{FSM}	8	A
	t=1ms		2	A
	t=1s		1	A
Repetitive peak forward current		I_{FRM}	900	mA
Total power dissipation(Note 1)		P_{tot}	250	mW
thermal resistance from junction to tie-point		Rth,j-tp	360	°C/W
thermal resistance from junction to ambient (Note 1)		Rth, j-a	500	°C/W
Junction Temperature		T_J	150	°C
StorageTemperature Range		T_{STG}	-65 to +150	°C

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

Parameter	Test Condition	Symbol	Min.	Max.	Unit
Forward Voltage	$I_F=1\text{mA}$	V_F		715	mV
	$I_F=10\text{mA}$			855	
	$I_F=50\text{mA}$			1	V
	$I_F=150\text{mA}$			1.2	
	$I_F=300\text{mA}$			1.25	
Reverse Current	$V_R=25\text{V}$	I_R		50	nA
	$V_R=100\text{V}$			1	μA
	$V_R=25\text{V}, T_J=150^{\circ}\text{C}$			30	
	$V_R=100\text{V}, T_J=150^{\circ}\text{C}$			50	
Diode capacitance	$V_R=0\text{V}, f=1\text{MHz}$	C_d		3	pF
Reverse recovery time	when switched from $I_F=10\text{mA}$ to $I_R=10\text{mA}$, $R_L=100\Omega$, measured at $I_R=1\text{mA}$	t_{rr}		4	nS
Forward recovery voltage	when switched from $I_F=10\text{mA}$ $t_r=20\text{ns}$	V_{fr}		1.75	V

CHARACTERISTIC CURVES

Fig 1. Power Derating Curve

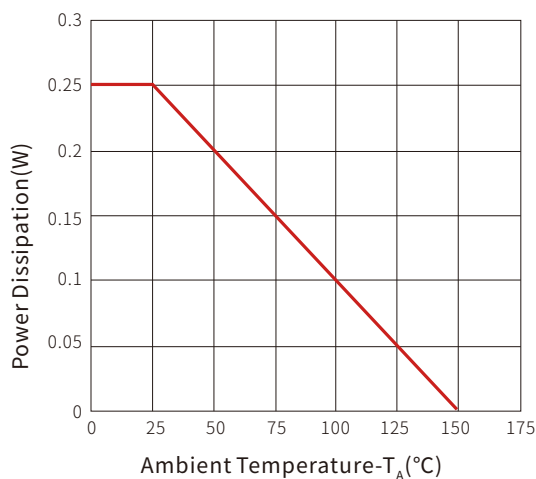


Fig 2. Forward Current vs Forward Voltage

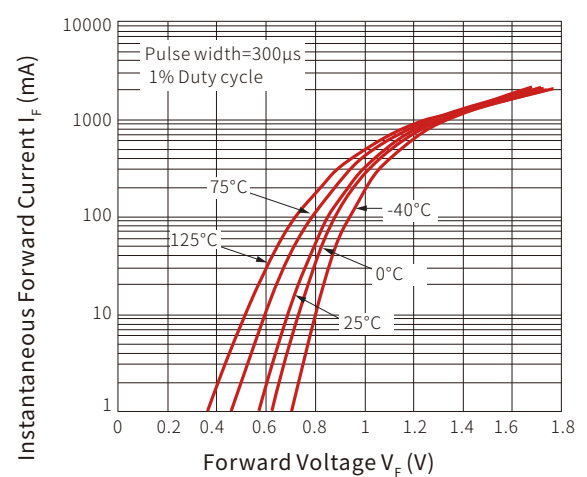
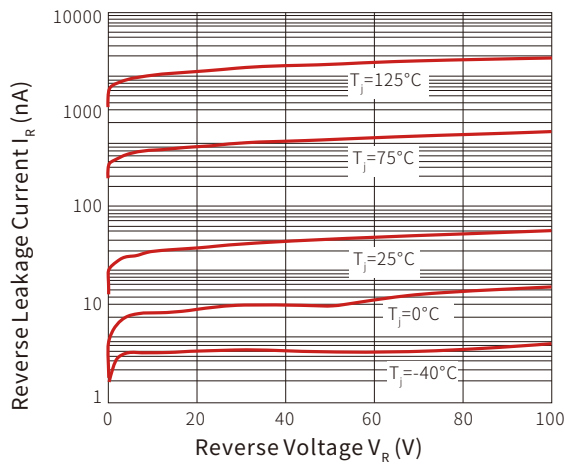
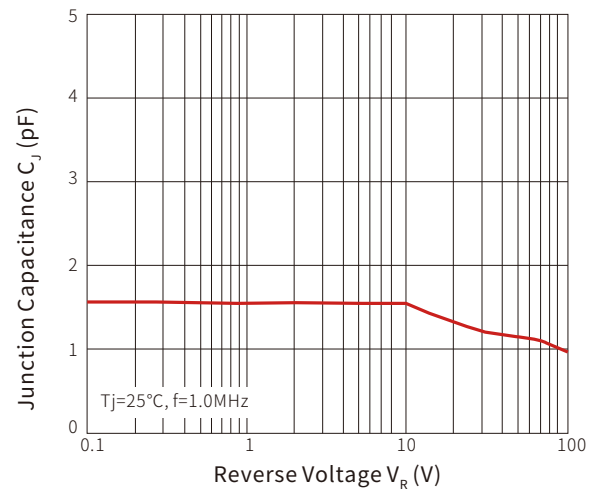
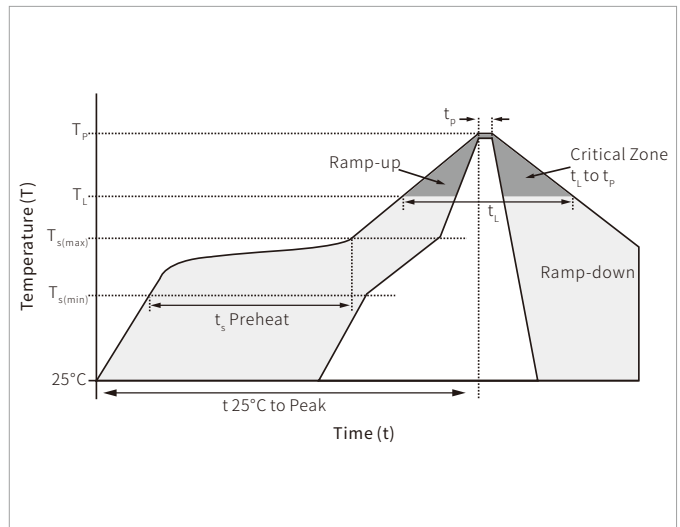


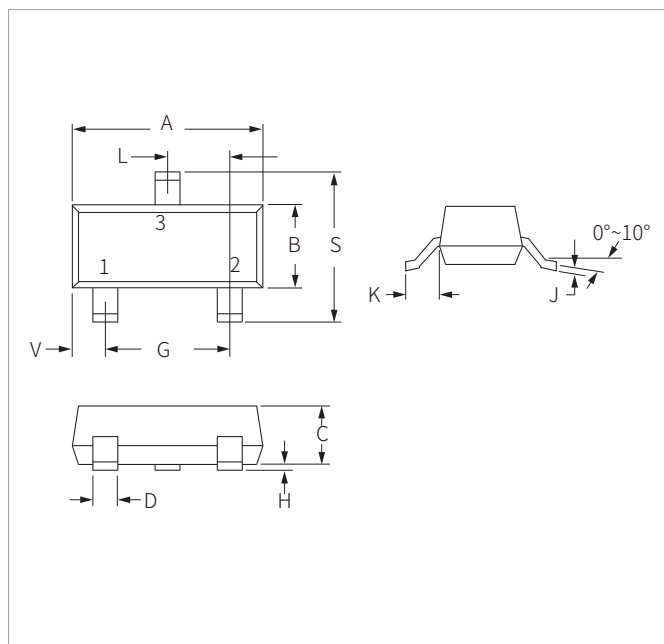
Fig 3. Reverse Leakage Current vs Reverse Voltage

Fig 4. Junction Capacitance vs Reverse Voltage


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

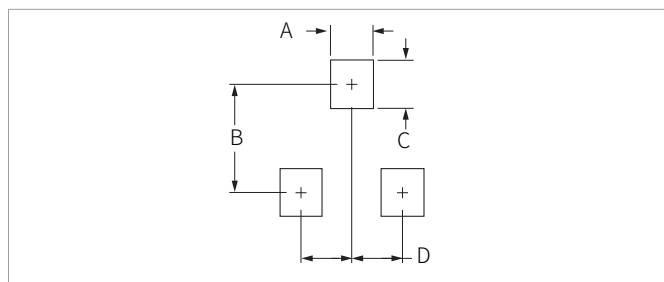


SOT-23 PACKAGE INFORMATION



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
BAS299	SOT-23	3000PCS	7"

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