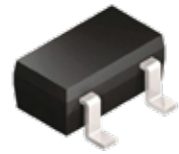


FEATURES

| Lead free product is acquired

| Surface mount package



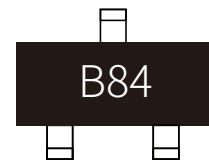
SOT-323

MECHANICAL DATA

| SOT-323 Small Outline Plastic Package

| Epoxy UL: 94V-0

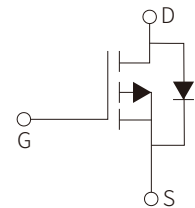
| Mounting Position: Any



Marking

APPROVALS

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



Schematic Symbol

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-50	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-0.13	A
Pulsed Drain Current ($t_p < 10\mu\text{s}$) (note1)	I_{DM}	-0.52	A
Power Dissipation	P_D	225	mW
Junction Temperature	T_J	-50- +150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-50- +150	$^{\circ}\text{C}$
Thermal Resistance From Junction to Ambient (note2)	$R_{\theta JA}$	556	$^{\circ}\text{C/W}$

ELECTRICAL CHARACTERISTICS (T_A=25°C)

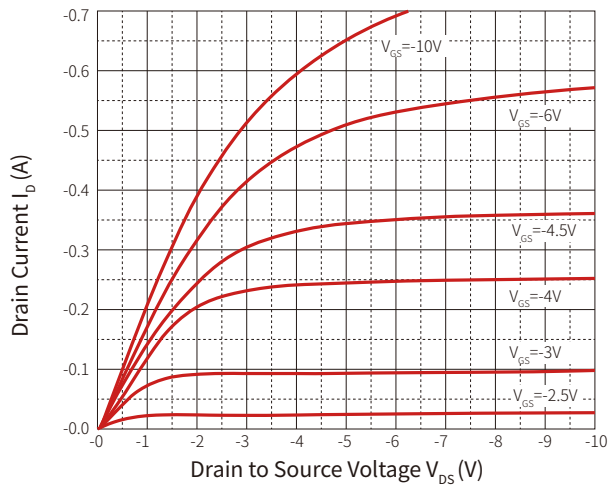
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Drain-source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-250μA	-50			V
Gate-source leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±5	uA
Zero gate voltage drain current	I _{DSS}	V _{DS} =-50V, V _{GS} =0V			-15	uA
		V _{DS} =-25V, V _{GS} =0V			-0.1	uA
Gate-source threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.8		-2.0	V
Drain-Source On-Resistance (note3)	R _{DS(on)}	V _{GS} =-5V, I _D =-0.1A			10	Ω
		V _{GS} =-10V, I _D =-0.1A			8	Ω
Diode forward voltage	V _{SD}	I _S =-0.34A, V _{GS} =0V			-1.3	V
Dynamic(note4)						
Input capacitance	C _{iss}	V _{DS} =-5V,V _{GS} =0V,f=1MHz		30		pF
Output capacitance	C _{oss}			10		pF
Reverse transfer capacitance	C _{rss}			5		pF
Switching(note3,4)						
Turn-on delay time	t _{d(on)}	V _{DD} =-15V, I _D =-0.25A,R _L =50Ω		2.5		ns
Rise Time	t _r			1		ns
Turn-Off Delay Time	t _{d(off)}			16		ns
Fall yime	t _f			8		ns

Notes:

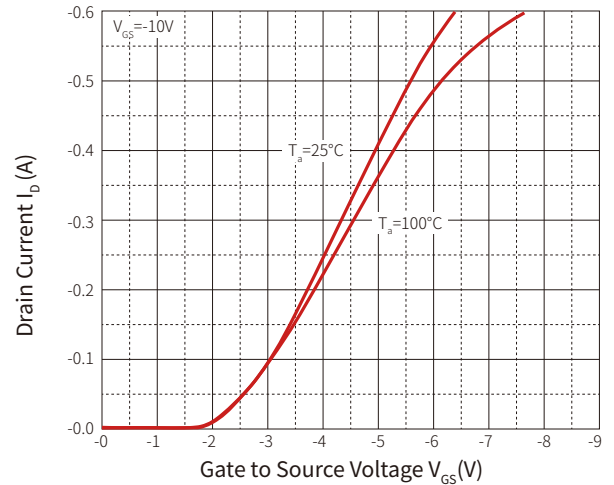
1. Repetitive rating: Pulse width limited by junction temperature.
2. Surface mounted on FR4 board, t ≤ 10s
3. Pulse Test: Pulse Width ≤ 300us, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to producing.

CHARACTERISTIC CURVES

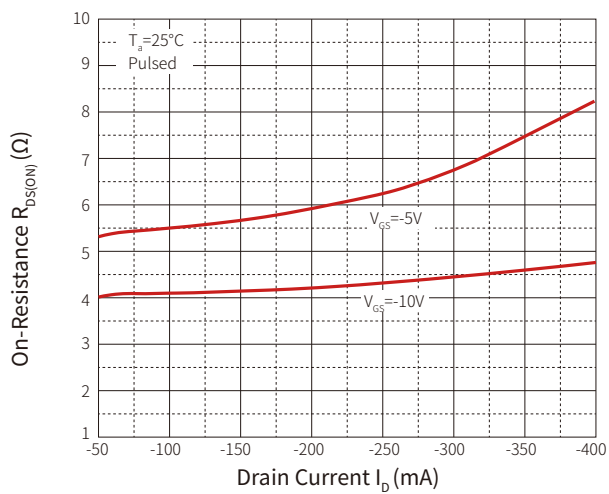
Output Characteristics



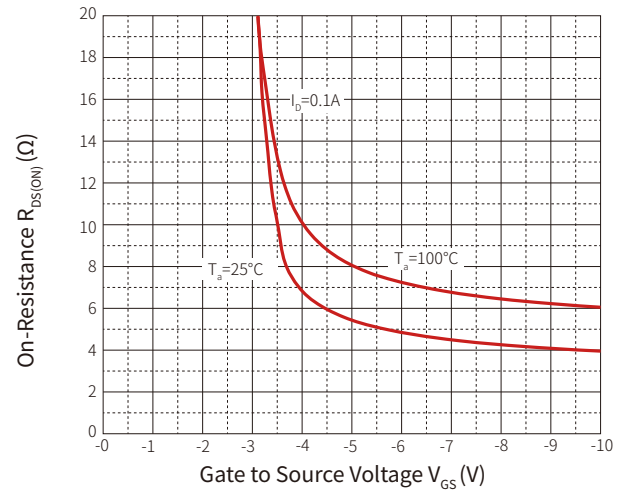
Transfer Characteristics

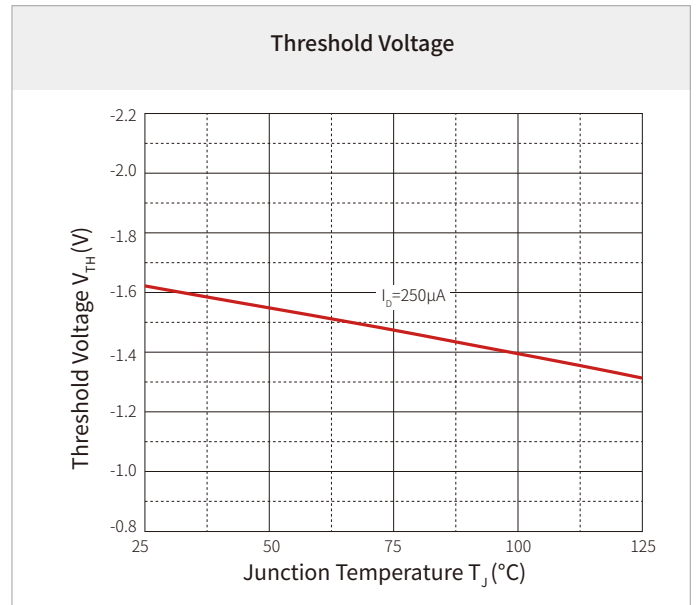
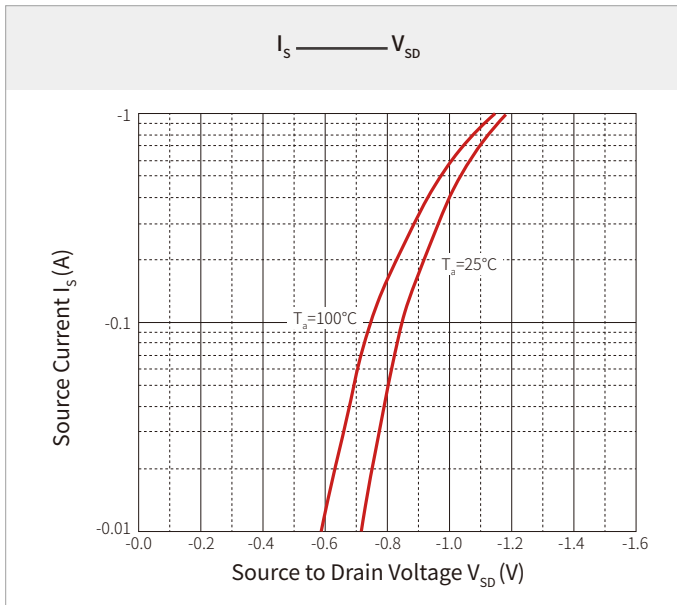


$R_{DS(ON)}$ — I_D



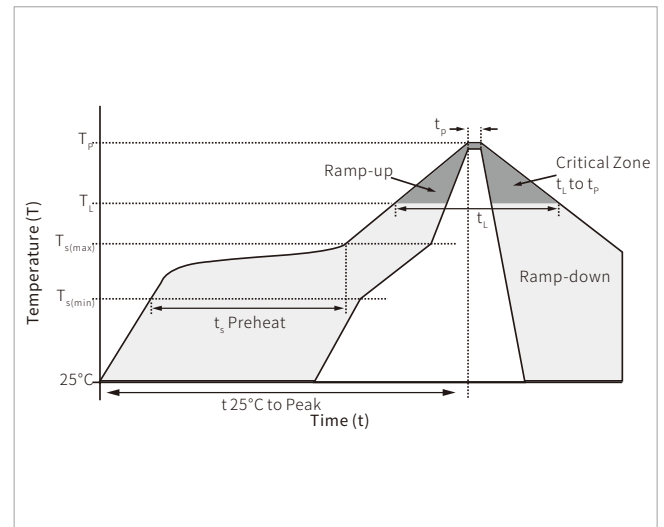
$R_{DS(ON)}$ — V_{GS}



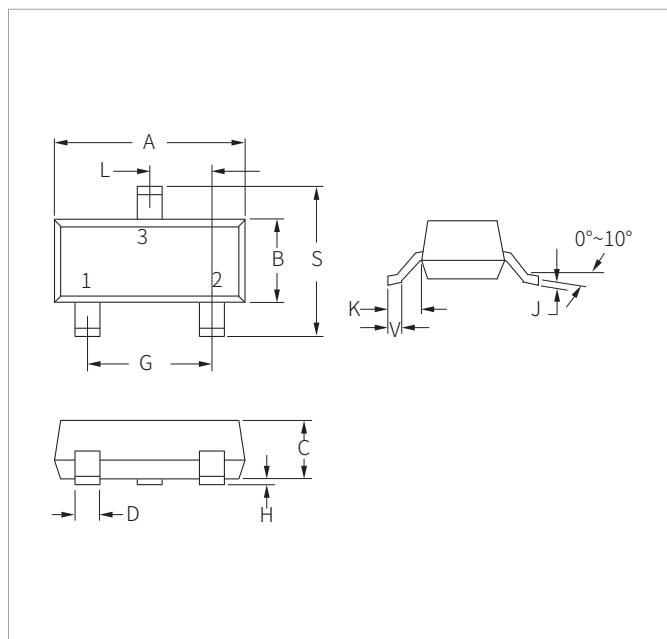


SOLDERING PARAMETERS

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 $^\circ\text{C}$

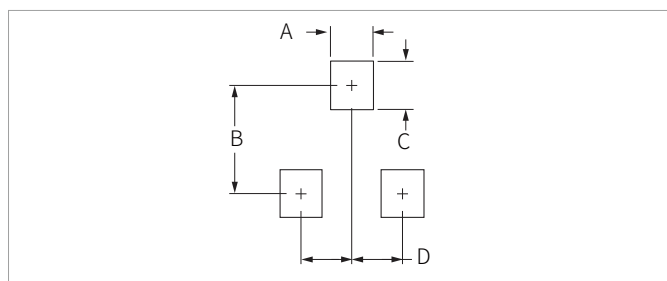


SOT-323 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.00	2.20	0.079	0.087
B	1.15	1.35	0.045	0.053
C	0.80	1.10	0.031	0.043
D	0.20	0.40	0.008	0.016
G	1.20	1.40	0.047	0.055
H	0.00	0.10	0.000	0.004
J	0.08	0.15	0.003	0.006
K	0.525REF		0.021REF	
L	0.650TYP		0.026TYP	
S	2.15	2.45	0.085	0.096
V	0.26	0.46	0.010	0.018

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
	NOR	NOR
A	0.50	0.020
B	2.20	0.087
C	0.80	0.031
D	1.30	0.051

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SPM013P05W	SOT-323	3000PCS	7"

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By QR Code

Website



Wechat

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