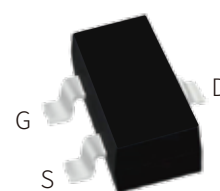


FEATURES

- | TrenchFET Power MOSFET
- | Load Switch for Portable Devices
- | DC/DC Converter



SOT-23

APPLICATION

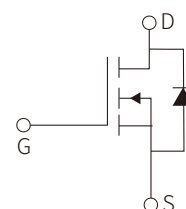
- | SOT-23 Small Outline Plastic Package
- | Epoxy UL: 94V-0
- | Mounting Position: Any



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}	100	V
Drain-Source Voltage $R_{GS} \leq 20\text{K}\Omega$	V_{DRG}	100	V
Continuous Drain Current (note1)	I_D	0.17	A
Pulsed Drain Current ($t_p=10\mu\text{s}$)	I_{DM}	0.68	A
Gate-Source Voltage	V_{GS}	± 20	V
Power Dissipation	P_D	350	mW
Thermal Resistance From Junction to Ambient (note1)	$R_{\theta JA}$	357	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^{\circ}\text{C}$

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	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V,V _{GS} =0V			1.00	μA
		V _{DS} =20V,V _{GS} =0V			0.01	μA
Gate-body Leakage	I _{GSS}	V _{GS} =±20V,V _{DS} =0V			±50	nA
Gate-Threshold voltage(note2)	V _{GS(th)}	V _{DS} =V _{GS} ,I _D =250μA	1.0	1.6	2.8	V
Drain-Source On-Resistance (note2)	R _{DS(on)}	V _{GS} =10V,I _D =0.17A			6	Ω
		V _{GS} =4.5V,I _D =0.17A			10	Ω
Forward trans conductance (note2)	g _{fs}	V _{DS} =10V,I _D =0.17A	80			mS
Diode forward voltage	V _{SD}	I _S =0.34A,V _{GS} =0V			1.3	V
Dynamic(note4)						
Input capacitance	C _{iss}	V _{GS} =0V,V _{DS} =25V, f=1MHz		29	60	pF
Output capacitance	C _{oss}			10	15	pF
Reverse transfer capacitance	C _{rss}			2	6	pF
Switching(note3,4)						
Turn-on Delay Time	t _{d(on)}	V _{DD} =30V,V _{GS} =10V I _D =0.28A,R _{GEN} =50Ω			8	ns
Turn-on Rise Time	t _r				8	ns
Turn-Off Delay Time	t _{d(off)}				13	ns
Turn-Off Fall Time	t _f				16	ns
Total Gate Charge	Q _g	V _{DS} =10V,V _{GS} =10V I _D =0.22A		1.4	2	nC
Gate-Source Charge	Q _{gs}			0.15	0.25	nC
Gate-Drain Charge	Q _{gd}			0.2	0.4	nC

Notes:

- 1). Surface mounted on FR4 board using the minimum recommended pad size.
- 2). Pulse Test: Pulse Width ≤300us, Duty Cycle ≤2%.
- 3). Switching characteristics are independent of operating junction temperature
- 4).Garanted by design, not subject to producing.

PARAMETER CHARACTERISTIC CURVE

Figure1 : Output Characteristics

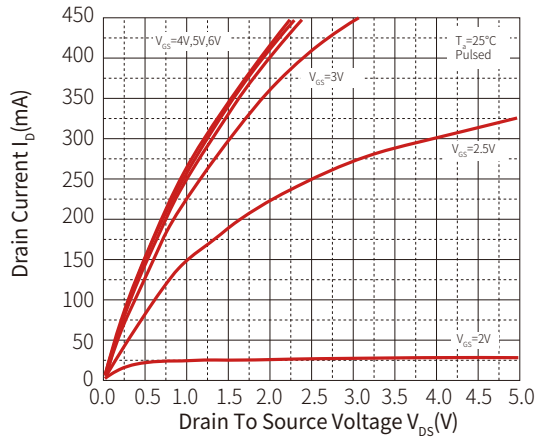


Figure2 : Transfer Characteristics

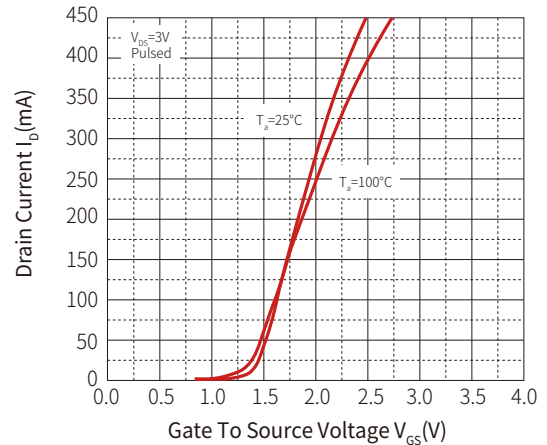


Figure3 : $R_{DS(ON)}$ — I_D

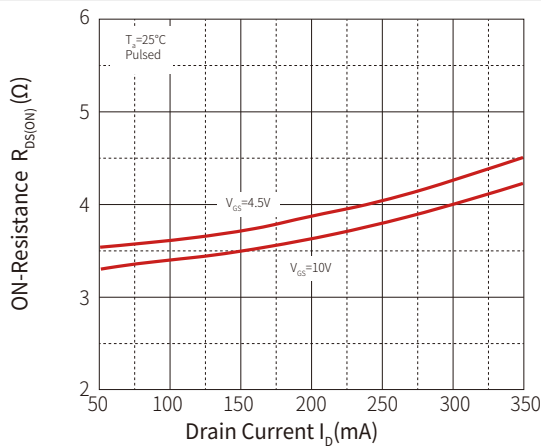


Figure4 : $R_{DS(ON)}$ — V_{GS}

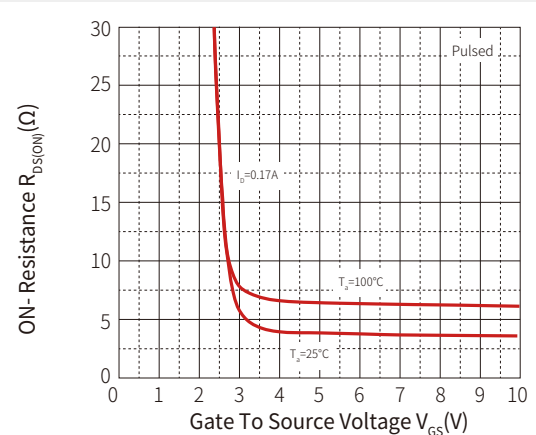


Figure5 : I_S — V_{SD}

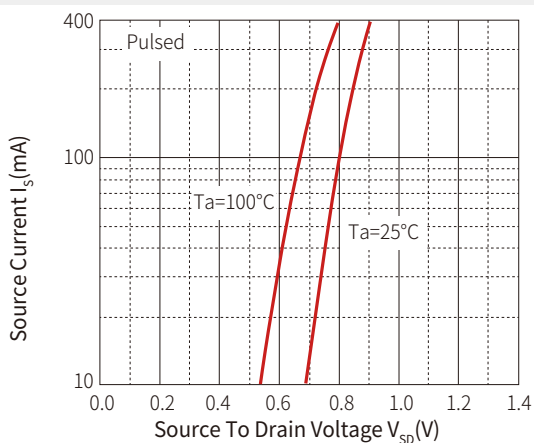
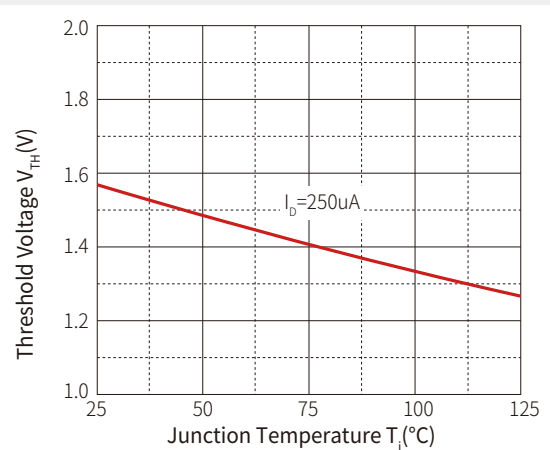
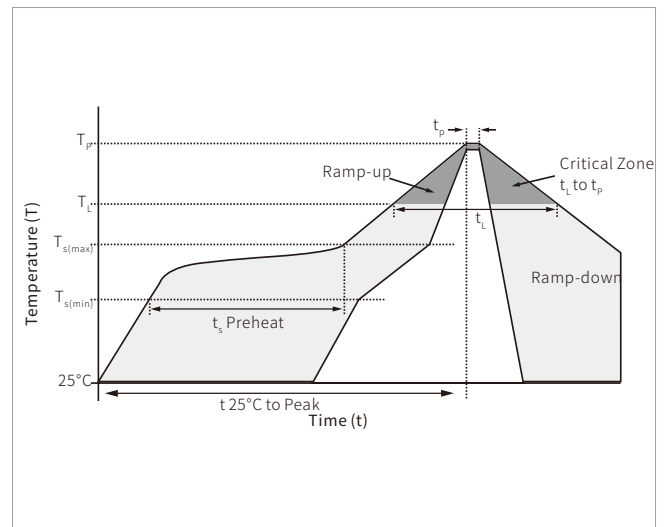


Figure6 : Threshold Voltage

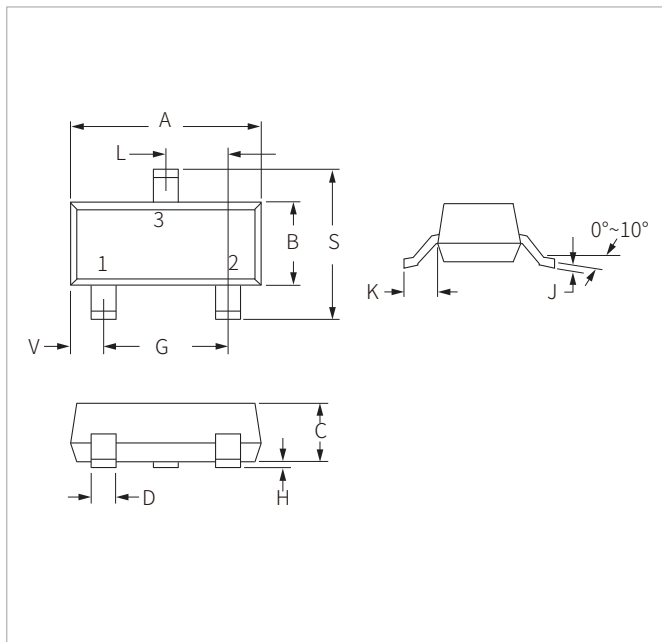


SOLDERING PARAMETERS

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
Reflow	$T_{s(max)}$ to T_L - Ramp-up Rate	3°C/second max
	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

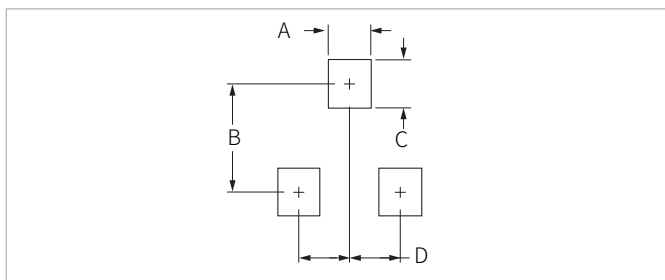


SOT-23 PACKAGE INFORMATION



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
SNM123	SOT-23	3000PCS	7"

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