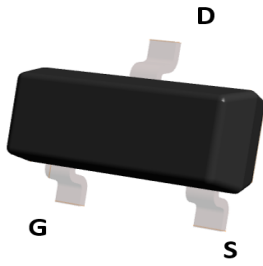
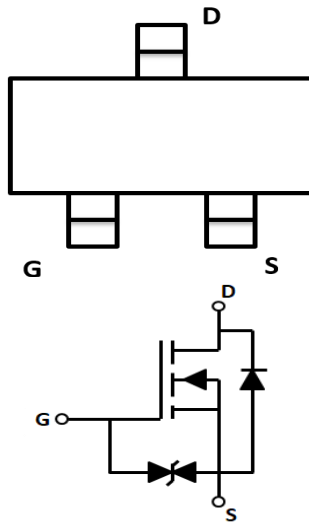


N-Channel Enhancement Mode Field Effect Transistor



Top View

SOT-523



Product Summary

- V_{DS} 20V
- I_D 0.75A
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) < 350 mohm
- $R_{DS(ON)}$ (at $V_{GS}=2.5V$) < 500 mohm
- ESD Protected Up to 3.0KV (HBM)

General Description

- Trench Power LV MOSFET technology
- High Power and current handling capability

Applications

- Load/Power Switching
- Interfacing Switching
- Logic Level Shift

■ Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	20	V
Gate-source Voltage		V_{GS}	± 10	V
Drain Current	$T_A=25^\circ\text{C}$ @ Steady State	I_D	0.75	A
	$T_A=70^\circ\text{C}$ @ Steady State		0.6	
Pulsed Drain Current ^A		I_{DM}	3.0	A
Total Power Dissipation @ $T_A=25^\circ\text{C}$		P_D	0.15	W
Thermal Resistance Junction-to-Ambient @ Steady State		$R_{\theta JA}$	833	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range		T_J, T_{STG}	-55~+150	$^\circ\text{C}$

■ Electrical Characteristics (T_J=25°C unless otherwise noted)

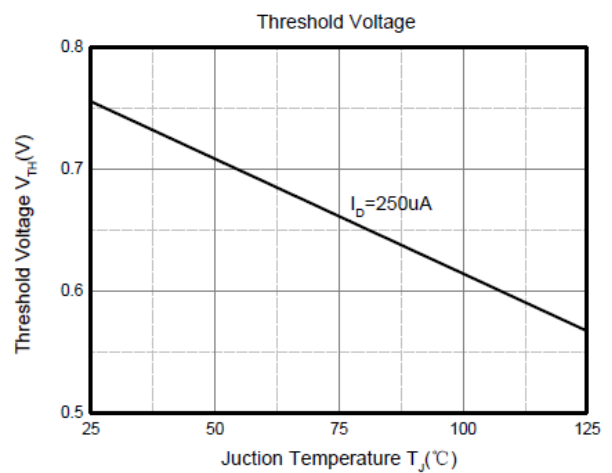
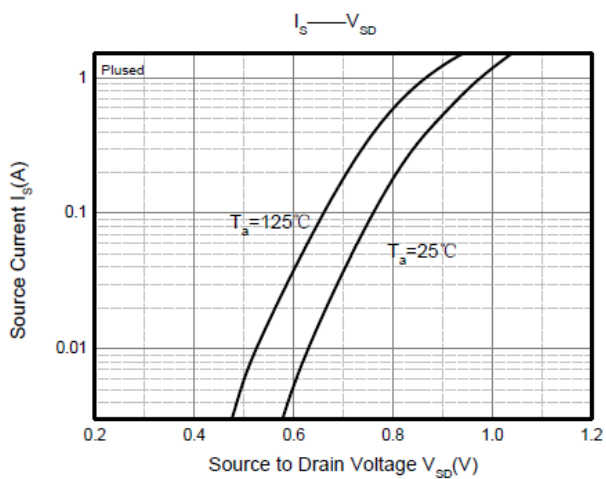
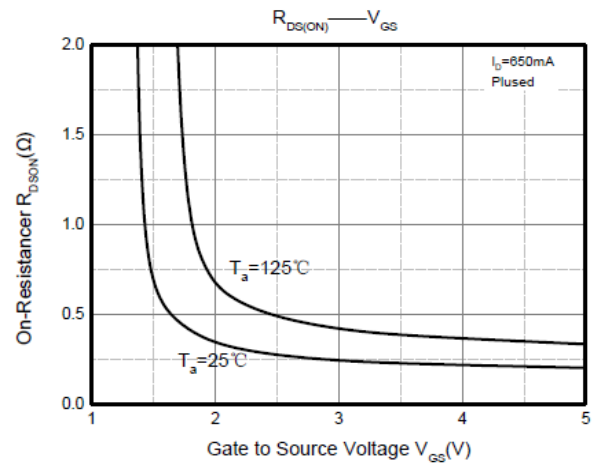
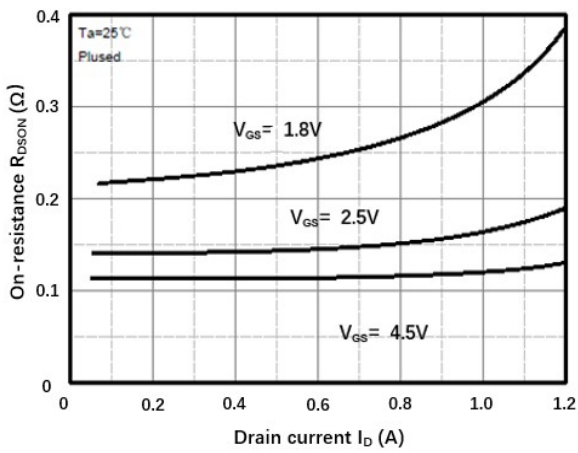
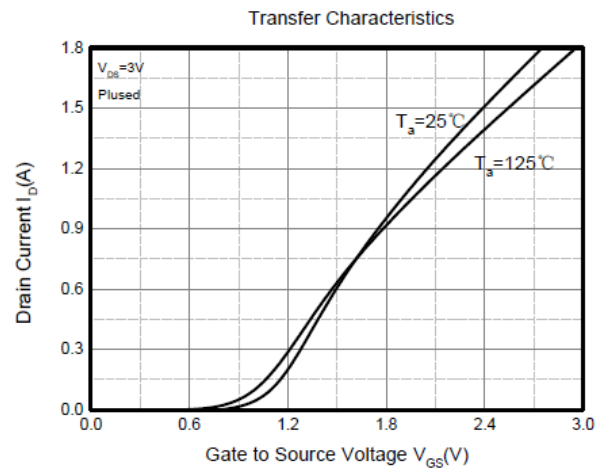
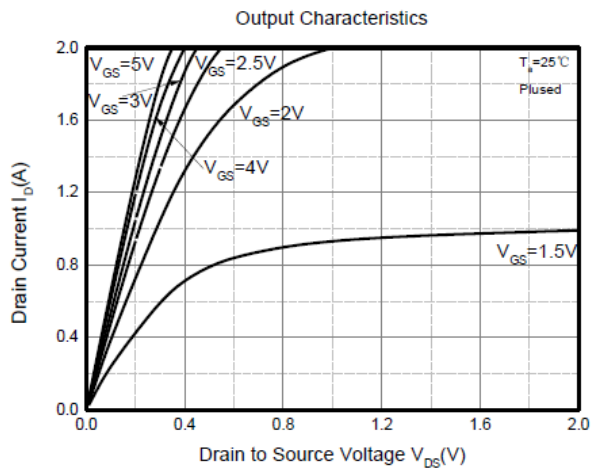
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±10V, V _{DS} =0V			±20	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	0.35	0.75	1.1	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 4.5V, I _D =0.65A		135	350	mΩ
		V _{GS} = 2.5V, I _D =0.3A		190	500	
Diode Forward Voltage ^C	V _{SD}	I _S =0.5A, V _{GS} =0V			1.2	V
Maximum Body-Diode Continuous Current	I _S				0.75	A
Dynamic Parameters ^B						
Input Capacitance	C _{iss}	V _{DS} =10V, V _{GS} =0V, f=1MHZ			110	pF
Output Capacitance	C _{oss}				18	
Reverse Transfer Capacitance	C _{rss}				15	
Switching Parameters ^B						
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =10V, I _D =0.5A		1.1		nC
Gate Source Charge	Q _{gs}			0.19		
Gate Drain Charge	Q _{gd}			0.27		
Turn-on Delay Time	t _{D(on)}	V _{GS} =4.5V, V _{DD} =10V, R _G =10Ω, I _D =0.5A		6.7		ns
Turn-on Rise Time	t _r			4.8		
Turn-off Delay Time	t _{D(off)}			17.3		
Turn-off Fall Time	t _f			7.4		

A. Repetitive Rating: Pulse width limited by maximum junction temperature.

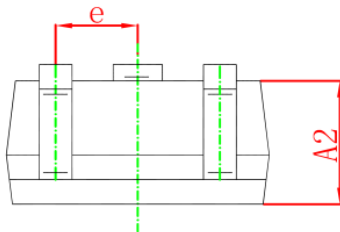
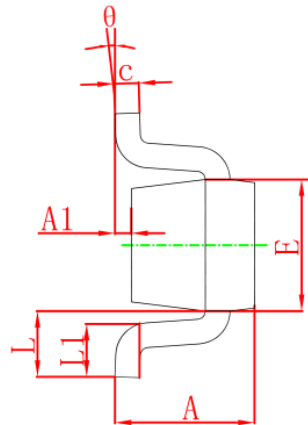
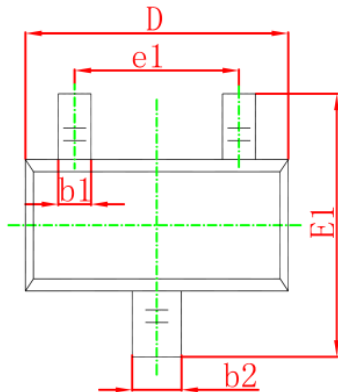
B. These parameters have no way to verify.

C. Pulse Test: Pulse Width ≤ 300us, Duty Cycle ≤ 0.5%.

■ Typical Performance Characteristics



■SOT-523 Package information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°