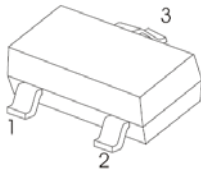
SOT-23-3L Plastic-Encapsulate MOSFETS

■ Features

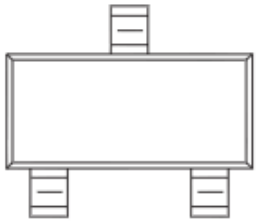
- $V_{DS\ (V)}$ =-60V
- I_D =-1.25 A (V_{GS} =-10V)
- $R_{DS(ON)}$ < 340mΩ (V_{GS} =-10V)
- $R_{DS(ON)}$ < 550mΩ (V_{GS} =-4.5V)
- Pb−Free Package May be Available. The G−Suffix Denotes a Pb−Free Lead Finish

SOT－23

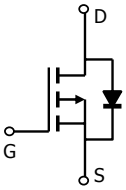


1. GATE
2. SOURCE
3. DRAIN

MARKING



Equivalent Circuit



■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current *1,*2 Ta = 25℃	I_D	-1.25	A
Ta = 70℃		-0.85	
Pulsed Drain Current	I_{DM}	-8	
Avalanche Current L=0.1mH	I_{AS}	-5	
Power Dissipation *1,*2 Ta = 25℃	P_D	1.25	W
Ta = 70℃		0.8	
Thermal Resistance.Junction- to-Ambient t ≤5 sec	R_{thJA}	100	℃/W
Steady State *1		166	
Thermal Resistance.Junction- to-Case *1	R_{thJC}	60	
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

*1 Surface Mounted on FR4 Board.

*2 t ≤ 5 sec.

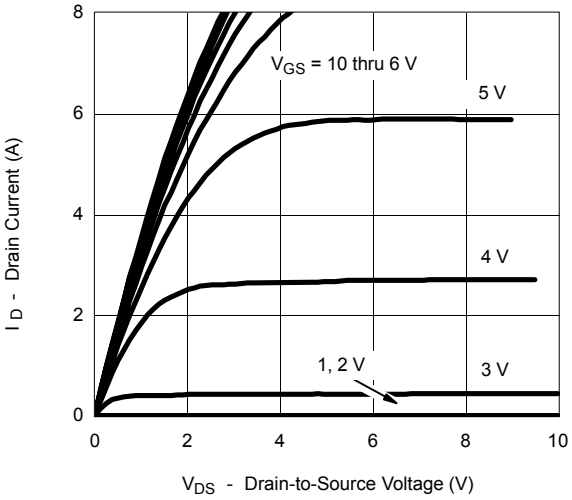
■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=-250μA, V_{GS}=0V	-60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-48V, V_{GS}=0V			-1	μA
		V_{DS}=-48V, V_{GS}=0V, T_J=125℃			-50	
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=-250μA	-1		-3	V
Static Drain-Source On-Resistance *1	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-1.25A			340	mΩ
		V_{GS}=-4.5V, I_D=-1A			550	
On state drain current *1	$I_{D(ON)}$	V_{GS}=-4.5V, V_{DS}=-10V	-6			A
Forward Transconductance *1	g_{FS}	V_{DS}=-4.5V, I_D=-1A		1.9		S
Total Gate Charge	Q_g	V_{GS}=-10V, V_{DS}=-30V, I_D=-1.25A		5.4	12	nC
Gate Source Charge	Q_{gs}			1.15		
Gate Drain Charge	Q_{gd}			0.92		
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=-4.5V, V_{DS}=-30V, R_L=30Ω,R_{GEN}=6Ω I_D=-1A		10.5	20	ns
Turn-On Rise Time	t_r			11.5	20	
Turn-Off DelayTime	$t_{d(off)}$			15.5	30	
Turn-Off Fall Time	t_f			7.5	15	
Body Diode Reverse Recovery Time	t_{rr}	I_F=-1.25A, di/dt=100A/μs		30	55	
Maximum Body-Diode Continuous Current	I_S				-1.25	A
Diode Forward Voltage	V_{SD}	I_S=-1.25A,V_{GS}=0V		-0.82	-1.2	V

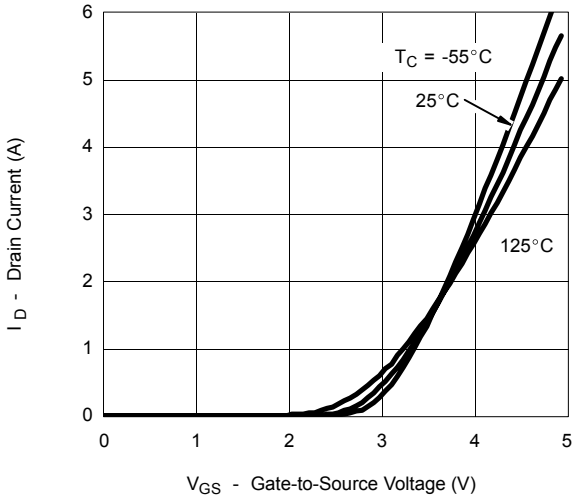
*1 Pulse test; pulse width ≤ 300us, duty cycle ≤ 2%.

■ Typical Characterisitics

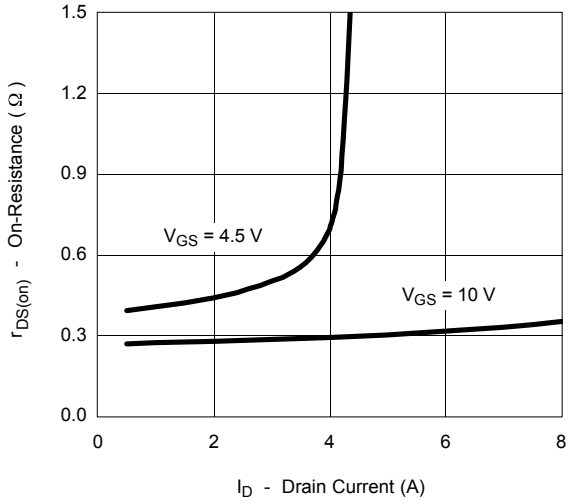
Output Characteristics



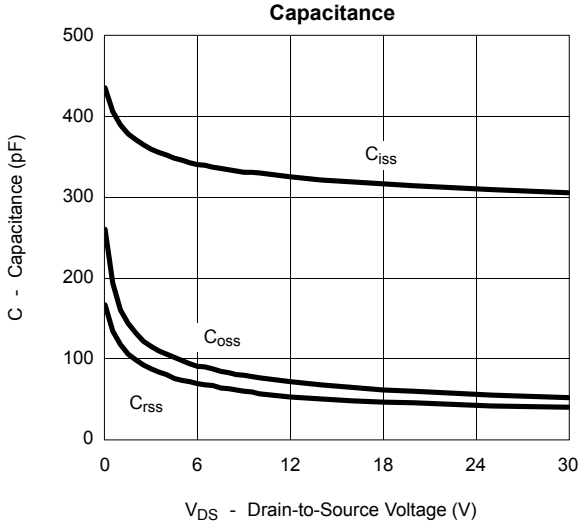
Transfer Characteristics



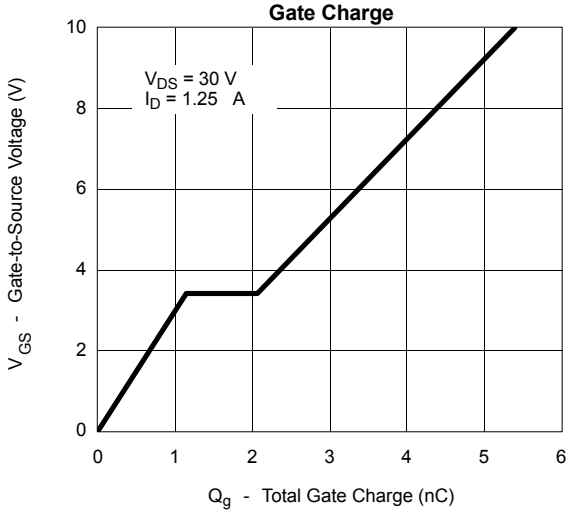
On-Resistance vs. Drain Current



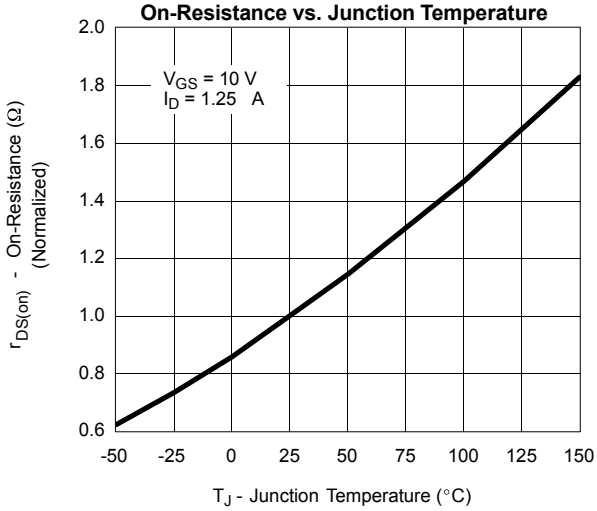
Capacitance



Gate Charge

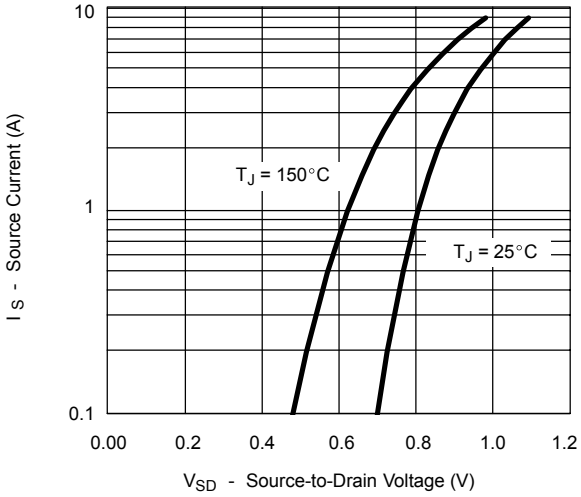


On-Resistance vs. Junction Temperature

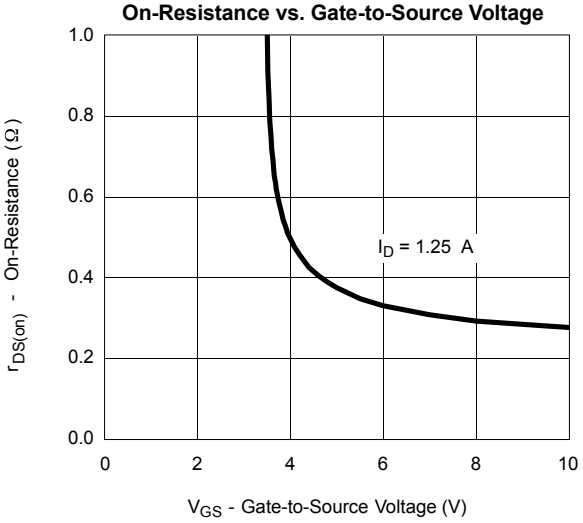


■ Typical Characterisitics

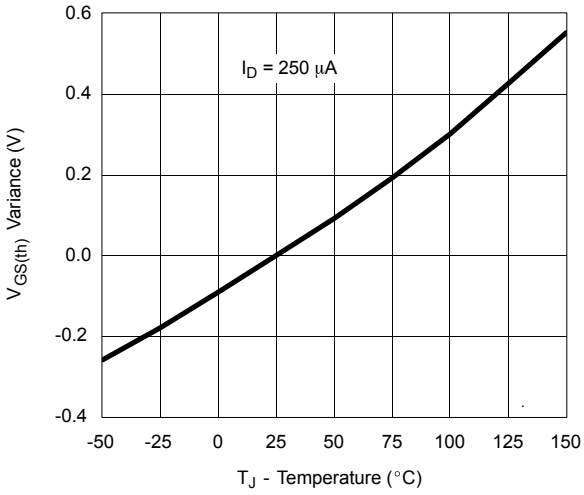
Source-Drain Diode Forward Voltage



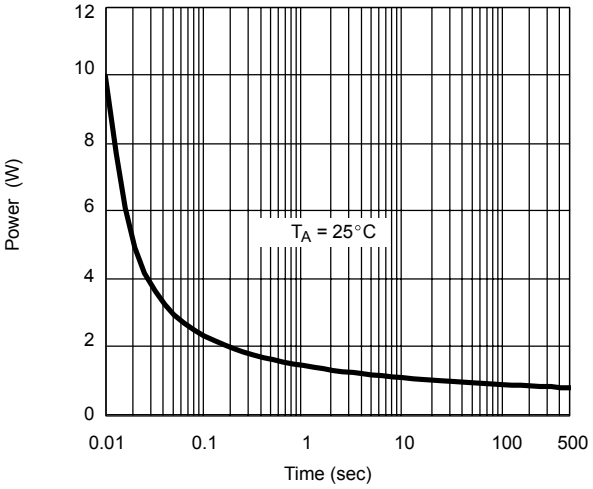
On-Resistance vs. Gate-to-Source Voltage



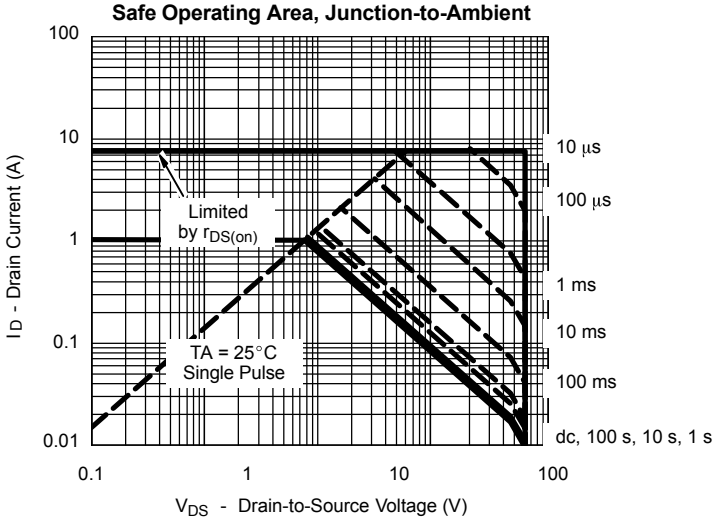
Threshold Voltage



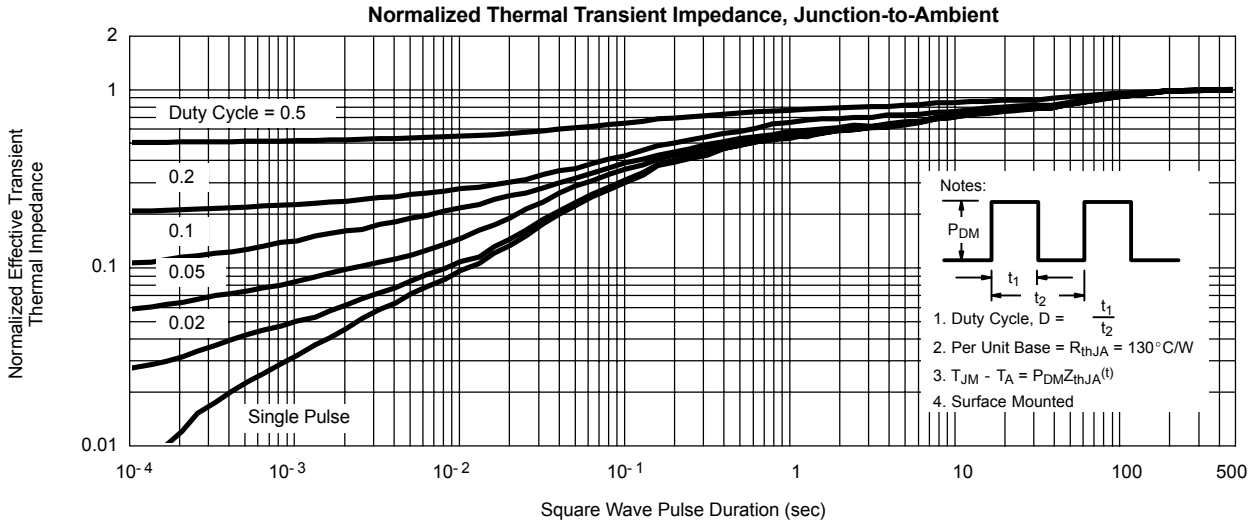
Single Pulse Power



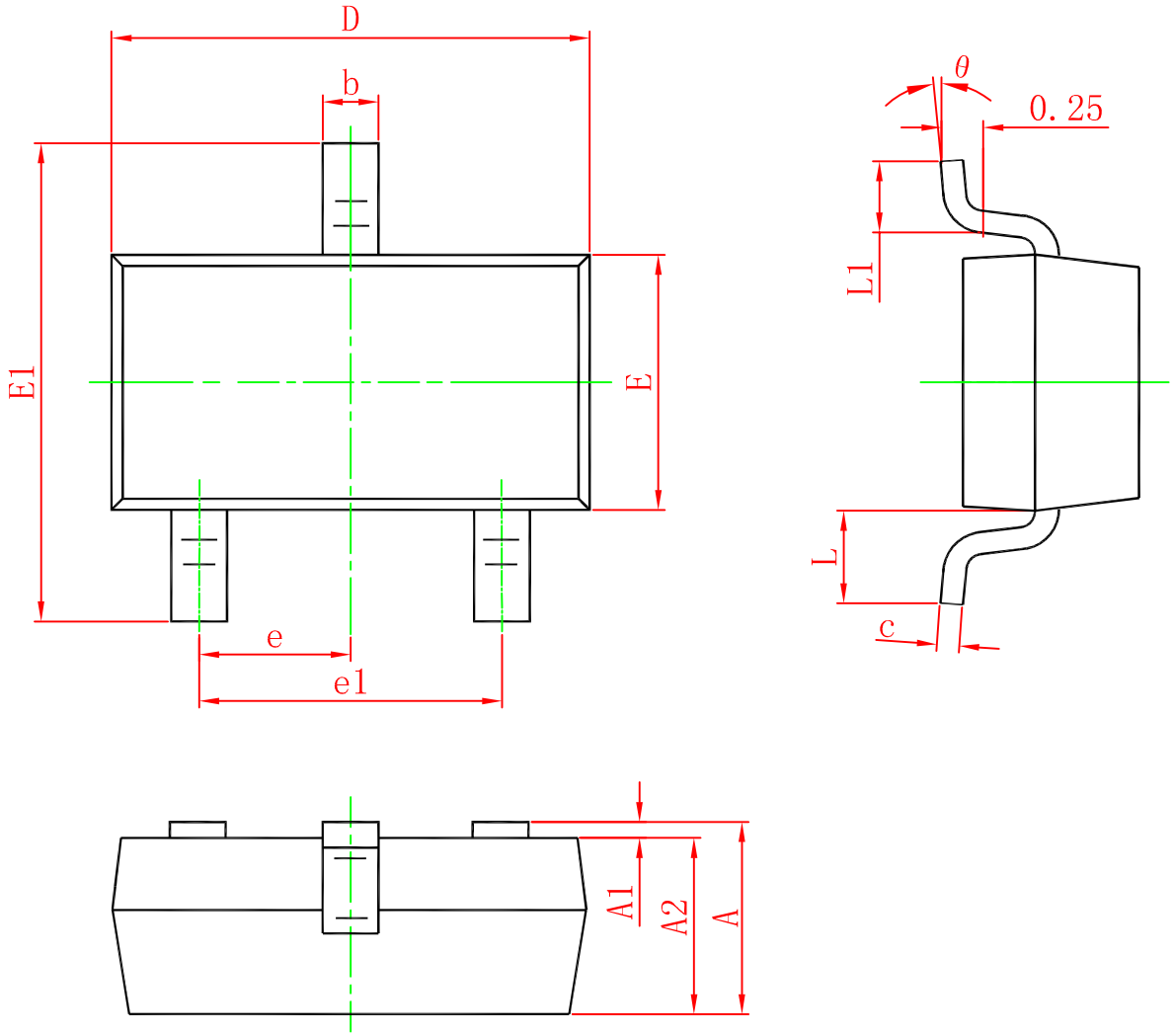
Safe Operating Area, Junction-to-Ambient



■ Typical Characterisitics



SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

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