Features

- Advanced Trench MOS Technology
- Green Device Available

Product Summary

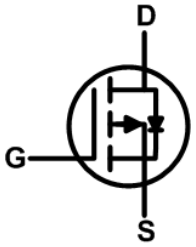
BVDSS	RDSON	ID
-150V	2.0Ω	-0.55A

Applications

- Load Switch.
- Power Management.
- LED Backlighting.
- Networking Application.

SOT23-3L Pin Configuration





Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-150	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_A=25℃	Continuous Drain Current, -V_{GS} @ -10V[1]	-0.55	A
I_D@T_A=70℃	Continuous Drain Current, -V_{GS} @ -10V[1]	-0.44	A
I_{DM}	Pulsed Drain Current[2]	-3.3	A
EAS	Single Pulse Avalanche Energy[3]	1.25	mJ
I_{AS}	Avalanche Current	-5	A
P_D@T_A=25℃	Total Power Dissipation[4]	1.5	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient [1]	---	85	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-Case[1]	---	40	℃/W

Electrical Characteristics (T_J=25 ℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=-250uA	-150	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance[2]	V_{GS}=-10V , I_D=-0.42A	---	2.0	2.4	Ω
		V_{GS}=-7V , I_D=-0.2A	---	2.1	3.0	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250uA	-3.5	-4.8	-5.5	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-120V , V_{GS}=0V , T_J=25℃	---	---	-1	uA
		V_{DS}=-120V , V_{GS}=0V , T_J=85℃	---	---	-30	
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V , V_{DS}=0V	---	---	±100	nA
Q_g	Total Gate Charge	V_{DS}=-75V , V_{GS}=-10V , I_D=-0.4A	---	3.75	---	nC
Q_{gs}	Gate-Source Charge		---	1.54	---	
Q_{gd}	Gate-Drain Charge		---	1.07	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=-75V , V_{GS}=-10V , R_G=1Ω, I_D=-0.42A	---	8.3	---	ns
T_r	Rise Time		---	10.5	---	
$T_{d(off)}$	Turn-Off Delay Time		---	15	---	
T_f	Fall Time		---	19	---	
C_{iss}	Input Capacitance	V_{DS}=-75V , V_{GS}=0V , f=1MHz	---	238	---	pF
C_{oss}	Output Capacitance		---	17	---	
C_{rss}	Reverse Transfer Capacitance		---	7	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current[1,5]	V_G=V_D=0V , Force Current	---	---	-1.8	A
V_{SD}	Diode Forward Voltage[2]	V_{GS}=0V , I_S=-0.42A , T_J=25℃	---	---	-1.2	V
t_{rr}	Reverse Recovery Time	I_F=-1A , di/dt=100A/μs , T_J=25℃	---	37.8	---	nS
Q_{rr}	Reverse Recovery Charge		---	60.7	---	nC

Note :
1.The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.
2.The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%
3.The EAS data shows Max. rating . The test condition is V_{DD}=-25V,V_{GS}=-10V,L=0.1mH,I_{AS}=-5A
4.The power dissipation is limited by 150℃ junction temperature
5.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation

Typical Characteristics

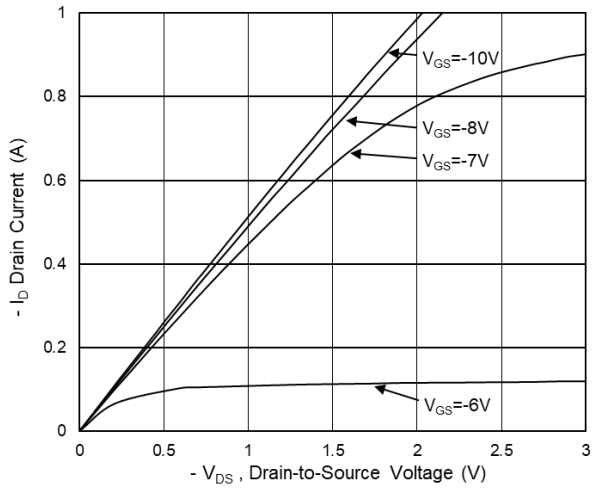


Fig.1 Typical Output Characteristics

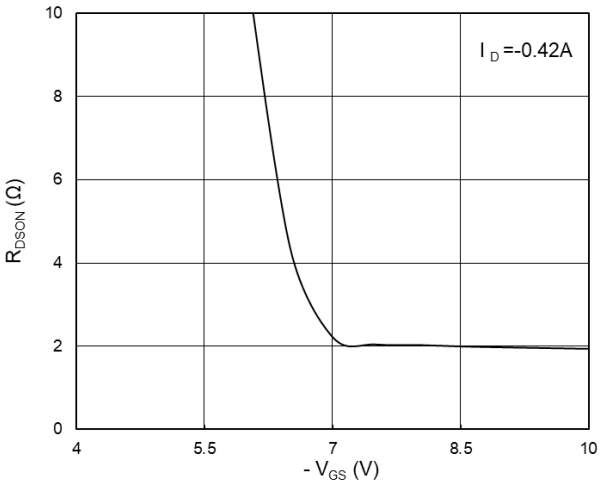


Fig.2 On-Resistance vs G-S Voltage

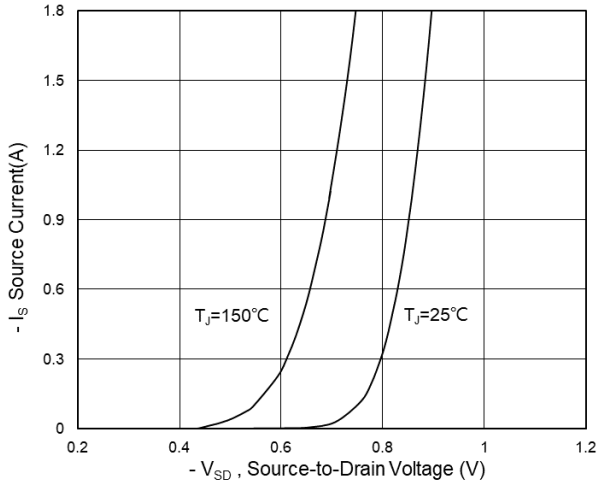


Fig.3 Source Drain Forward Characteristics

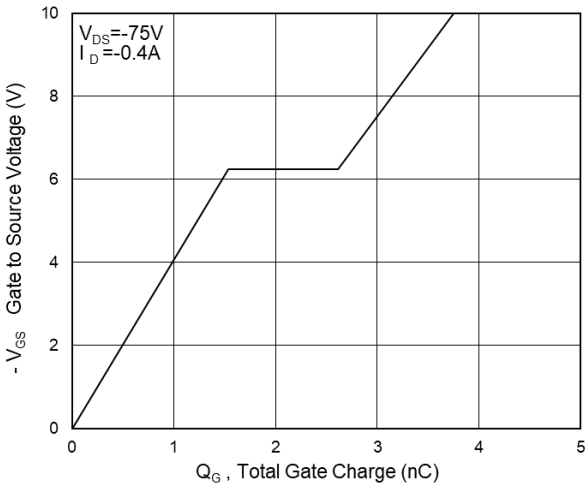


Fig.4 Gate-Charge Characteristics

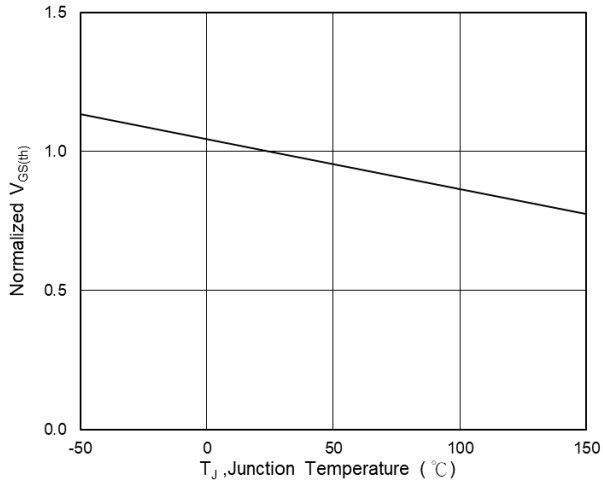


Fig.5 Normalized $V_{GS(th)}$ vs T_J

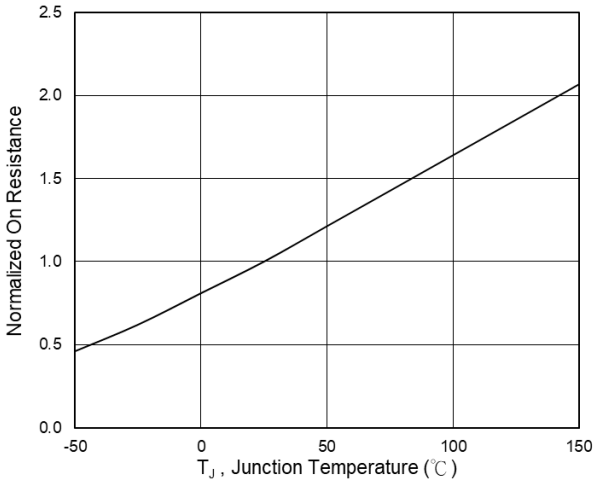


Fig.6 Normalized R_{DSON} vs T_J

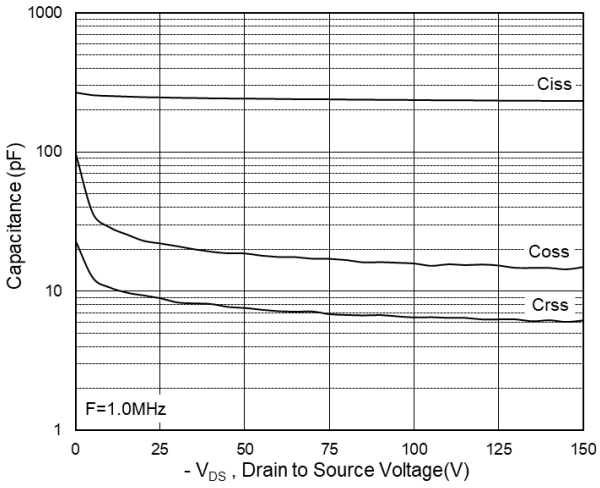


Fig.7 Capacitance

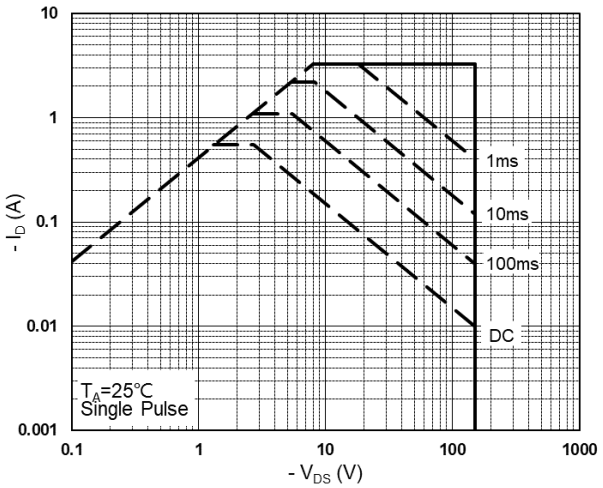


Fig.8 Safe Operating Area

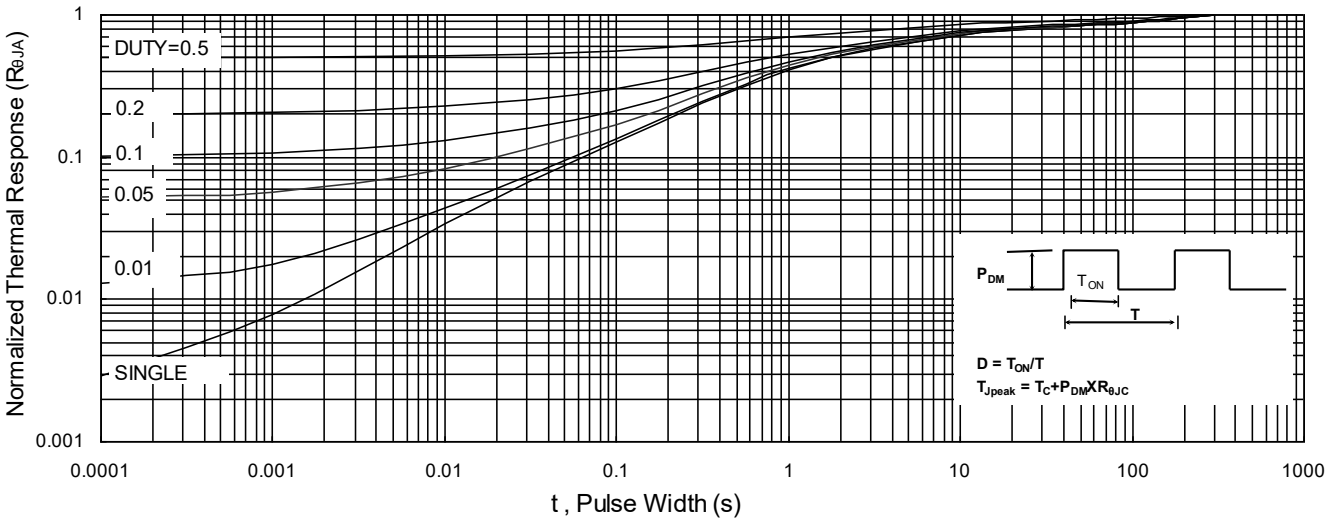


Fig.9 Normalized Maximum Transient Thermal Impedance

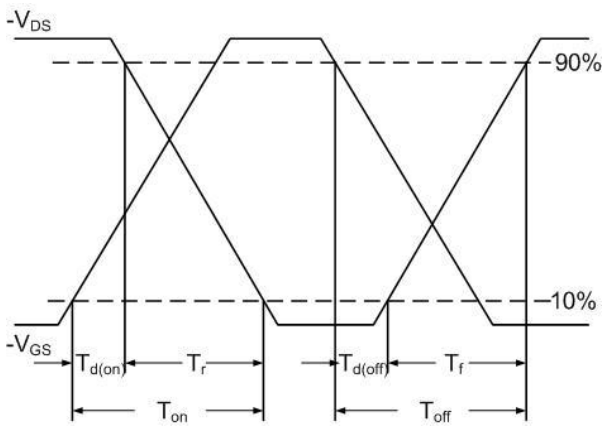


Fig.10 Switching Time Waveform

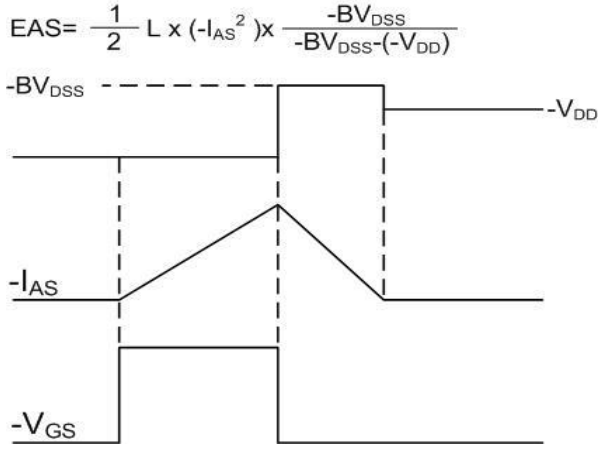
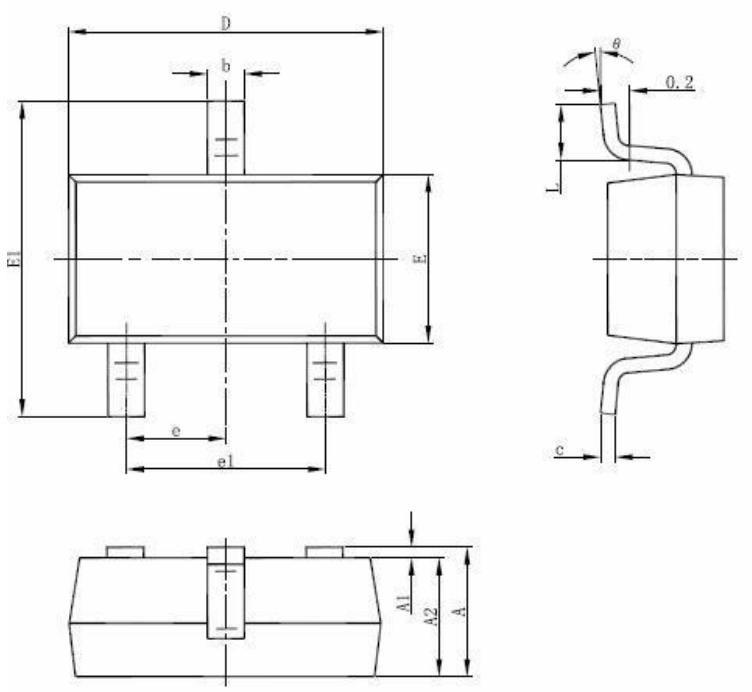


Fig.11 Unclamped Inductive Waveform

SOT-23-3L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°