


Description

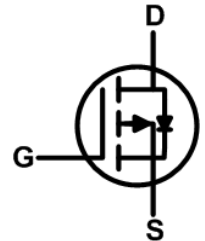
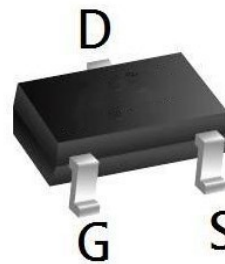
- ★ Advanced Trench MOS Technology
- ★ Green Device Available

Product Summary

BVDSS	RDSON	ID
-150V	650mΩ	-1.2A

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
$I_D@T_A=25^\circ C$	Continuous Drain Current, $-V_{GS}$ @ $-10V^1$	-1.2	A
$I_D@T_A=70^\circ C$	Continuous Drain Current, $-V_{GS}$ @ $-10V^1$	-0.88	A
I_{DM}	Pulsed Drain Current ²	-4.4	A
EAS	Single Pulse Avalanche Energy ³	12.5	mJ
I_{AS}	Avalanche Current	5	A
$P_D@T_A=25^\circ C$	Total Power Dissipation ⁴	2	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient ¹	---	62	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-Case ¹	---	40	$^\circ C/W$

P-Ch 150V Fast Switching MOSFETs
Electrical Characteristics (T_J=25 °C, unless otherwise noted)

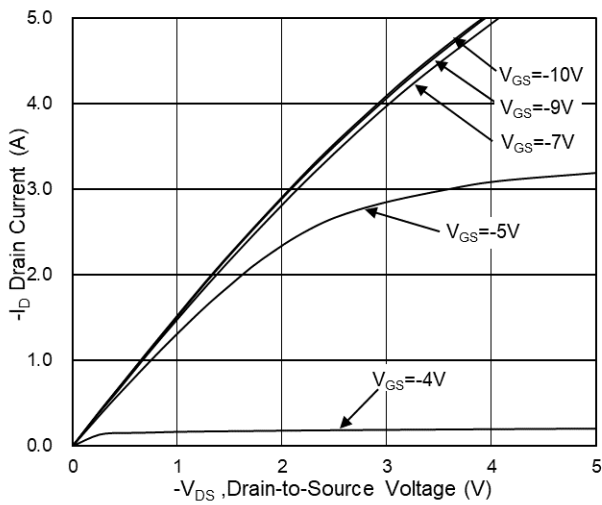
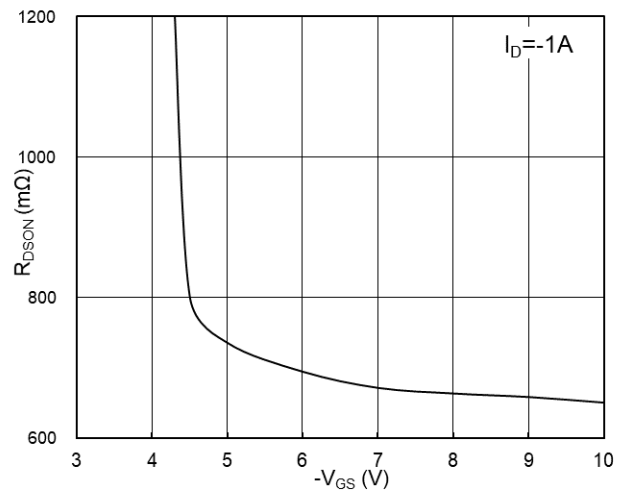
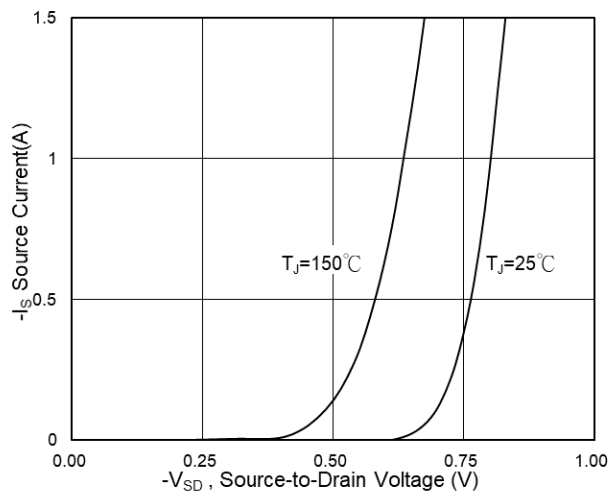
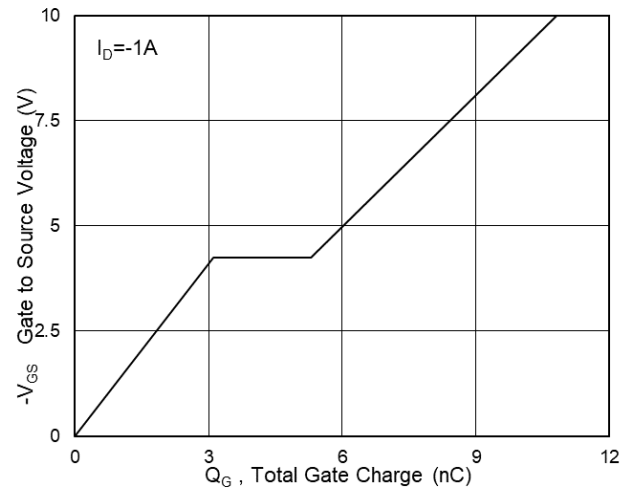
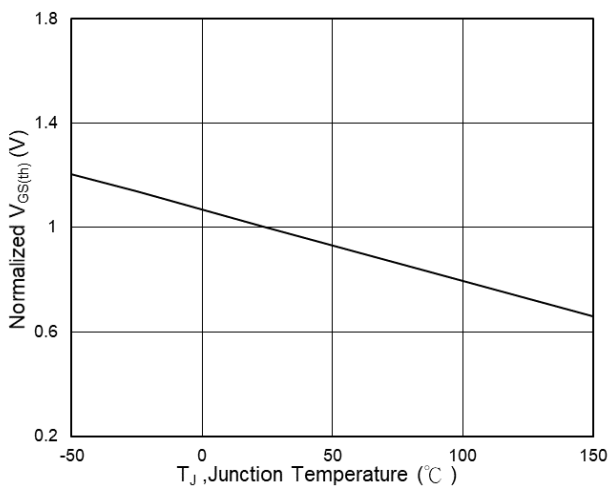
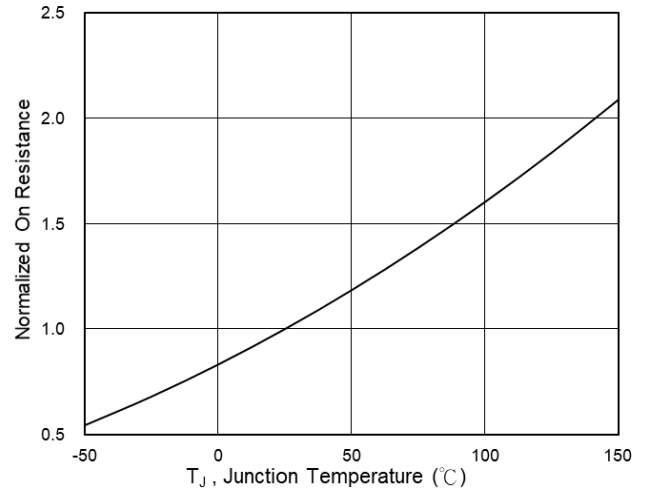
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-150	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =-10V, I _D =-1A	---	650	780	mΩ
		V _{GS} =-6V, I _D =-0.5A	---	700	980	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =-250uA	-2.0	-3.0	-4.0	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-120V, V _{GS} =0V, T _J =25°C	---	---	1	uA
		V _{DS} =-120V, V _{GS} =0V, T _J =85°C	---	---	30	
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	12	---	Ω
Q _g	Total Gate Charge	V _{DS} =-75V, V _{GS} =-10V, I _D =-1A	---	10.8	---	nC
Q _{gs}	Gate-Source Charge		---	3.1	---	
Q _{gd}	Gate-Drain Charge		---	2.2	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =-30V, V _{GS} =-10V, R _G =6Ω, I _D =-1A	---	21	---	ns
T _r	Rise Time		---	16	---	
T _{d(off)}	Turn-Off Delay Time		---	40	---	
T _f	Fall Time		---	18	---	
C _{iss}	Input Capacitance	V _{DS} =-75V, V _{GS} =0V, f=1MHz	---	706	---	pF
C _{oss}	Output Capacitance		---	23	---	
C _{rss}	Reverse Transfer Capacitance		---	13	---	

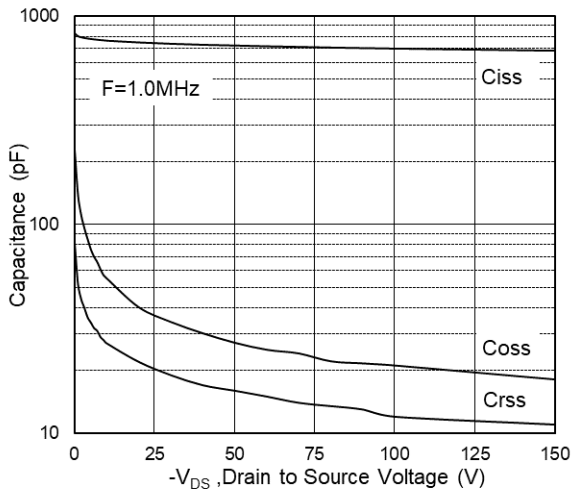
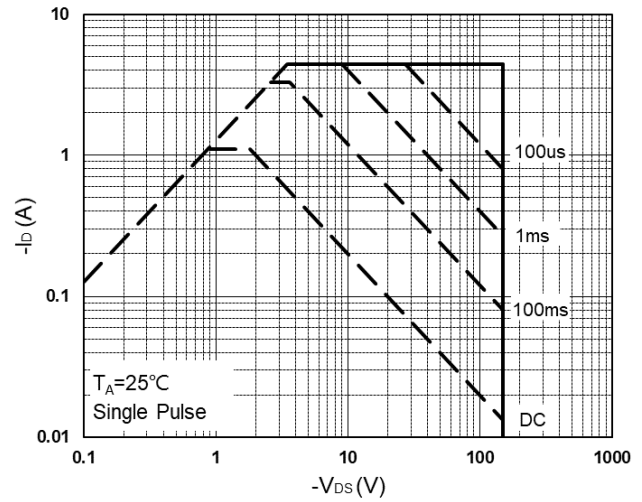
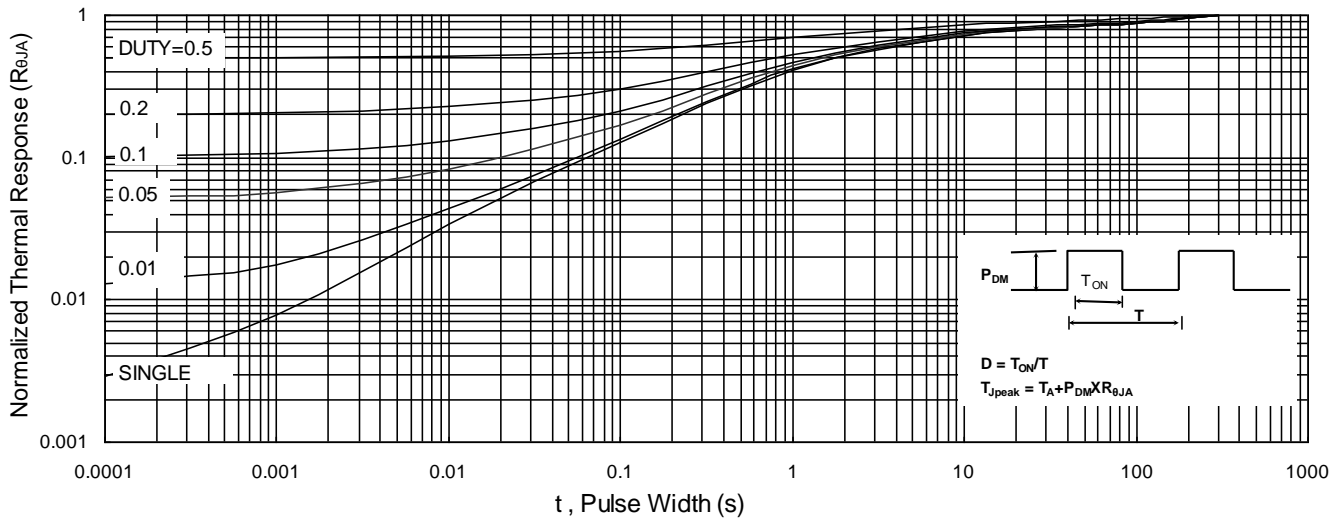
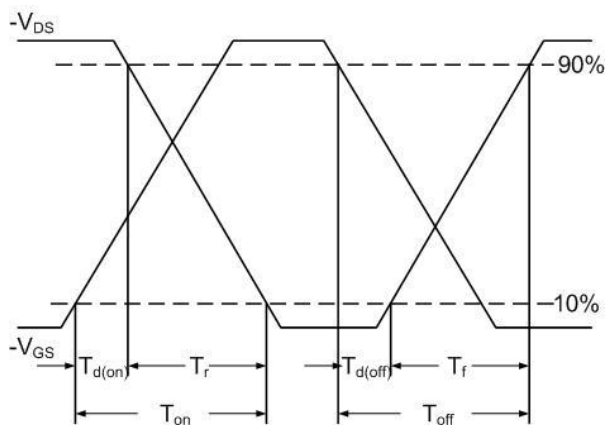
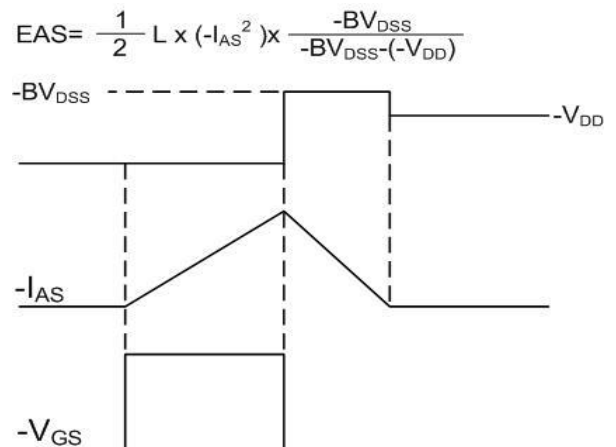
Diode Characteristics

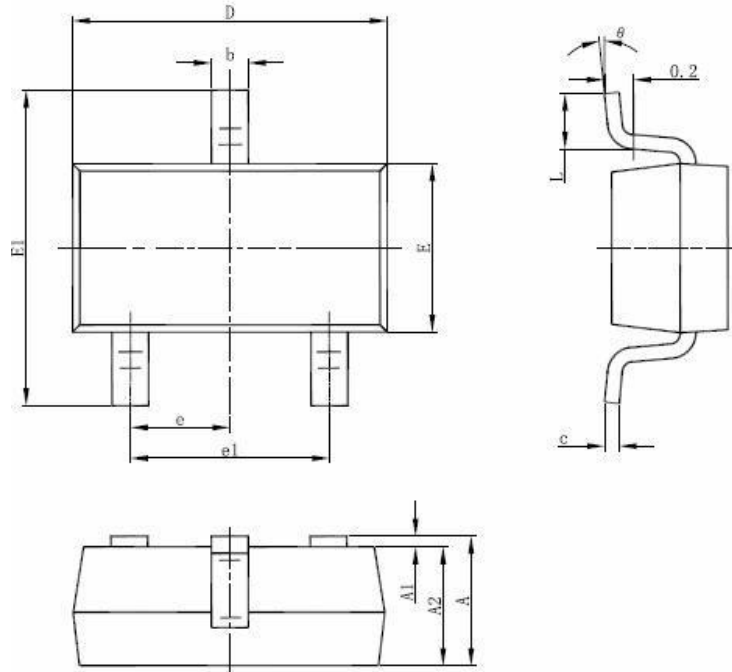
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current ^{1,5}	V _G =V _D =0V, Force Current	---	---	-1.2	A
V _{SD}	Diode Forward Voltage ²	V _{GS} =0V, I _S =-1A, T _J =25°C	---	---	-1.2	V

Note :

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 20Z 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}=-50V, V_{GS}=-10V, L=1mH, I_{AS}=-5A
- 4.The power dissipation is limited by 150°C 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 $R_{DS(on)}$ vs T_J

P-Ch 150V Fast Switching MOSFETs

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°