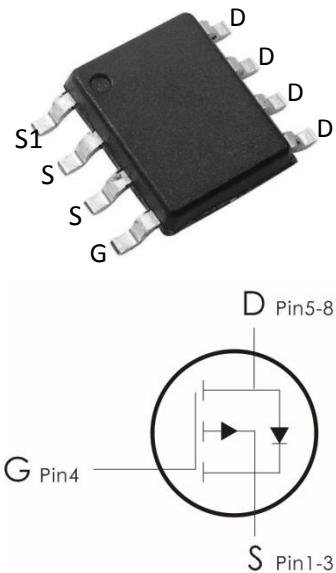


Description:

This P-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge. It can be used in a wide variety of applications.

Features:

- 1) $V_{DS}=-60V, I_D=-3.2A, R_{DS(on)}<105m\Omega @ V_{GS}=-10V$
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density trench technology for ultra $R_{DS(on)}$.
- 5) Excellent package for good heat dissipation.



Absolute Maximum Ratings: ($T_c=25^\circ C$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current- $T_C=25^\circ C$	-3.2	A
	Continuous Drain Current- $T_C=100^\circ C$	-2.56	
	Pulsed Drain Current ¹	-12.8	
E_{AS}	Single Pulse Avalanche Energy	25	mJ
P_D	Power Dissipation	2.02	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	$^\circ C$

Thermal Characteristics:

Symbol	Parameter	Max	Units
R_{eJC}	Thermal Resistance,Junction to Case	23	$^\circ C/W$
R_{eJA}	Thermal Resistance,Junction to Ambient	62	

Electrical Characteristics: ($T_C=25^\circ\text{C}$ unless otherwise noted)

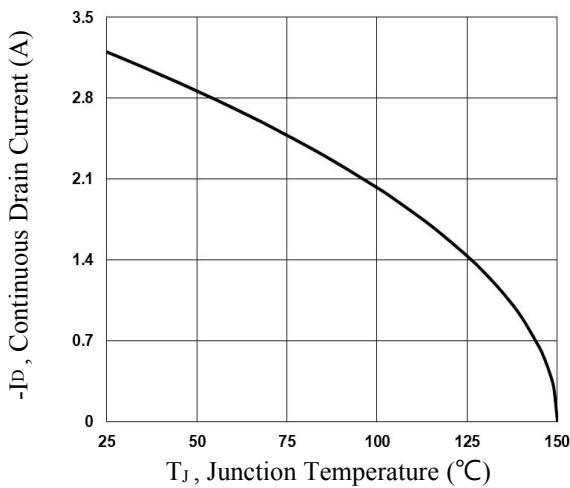
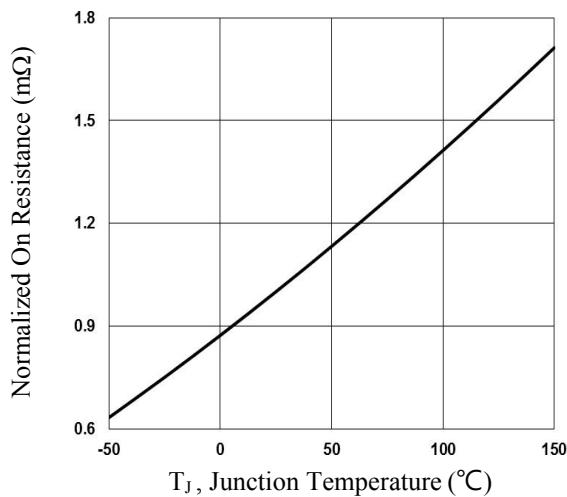
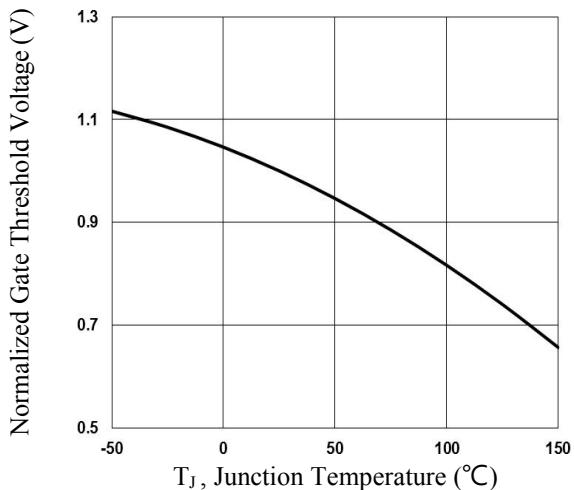
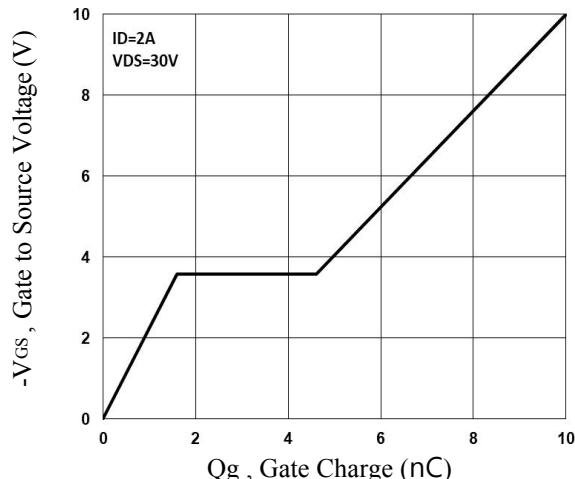
Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{\text{GS}}=0\text{V}, I_D=250 \mu\text{A}$	-60	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{\text{GS}}=0\text{V}, V_{\text{DS}}=-60\text{V}, T_J=25^\circ\text{C}$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{\text{GS}}=\pm 20\text{V}, V_{\text{DS}}=0\text{A}$	---	---	± 100	nA
On Characteristics						
$V_{\text{GS(th)}}$	GATE-Source Threshold Voltage	$V_{\text{GS}}=V_{\text{DS}}, I_D=250 \mu\text{A}$	-1.0	-1.6	-2.5	V
$R_{\text{DS(ON)}}$	Drain-Source On Resistance ²	$V_{\text{GS}}=-10\text{V}, I_D=-3\text{A}$	---	87	105	$\text{m}\Omega$
		$V_{\text{GS}}=-4.5\text{V}, I_D=-2\text{A}$	---	120	145	
G_{FS}	Forward Transconductance	$V_{\text{DS}}=-10\text{V}, I_D=-3\text{A}$	---	5.5	---	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{\text{DS}}=-30\text{V}, V_{\text{GS}}=0\text{V}, f=1\text{MHz}$	---	785	1300	pF
C_{oss}	Output Capacitance		---	175	300	
C_{rss}	Reverse Transfer Capacitance		---	112	220	
Switching Characteristics						
$t_{\text{d(on)}}$	Turn-On Delay Time ^{2,3}	$V_{\text{DS}}=-30\text{V}, V_{\text{GS}}=-10\text{V}$ $I_D=-1\text{A}, R_{\text{GEN}}=6\Omega$	---	8	16	ns
t_r	Rise Time ^{2,3}		---	15.4	30	ns
$t_{\text{d(off)}}$	Turn-Off Delay Time ^{2,3}		---	42.8	80	ns
t_f	Fall Time ^{2,3}		---	8.4	16	ns
Q_g	Total Gate Charge ^{2,3}	$V_{\text{DS}}=-30\text{V}, V_{\text{GS}}=-4.5\text{V}$, $I_D=-2\text{A}$	---	10	15	nC
Q_{gs}	Gate-Source Charge ^{2,3}		---	1.6	3.2	nC
Q_{gd}	Gate-Drain "Miller" Charge ^{2,3}		---	3	6	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage ²	$V_{\text{GS}}=0\text{V}, I_S=-1\text{A}, T_J=25^\circ\text{C}$	---	---	-1	V

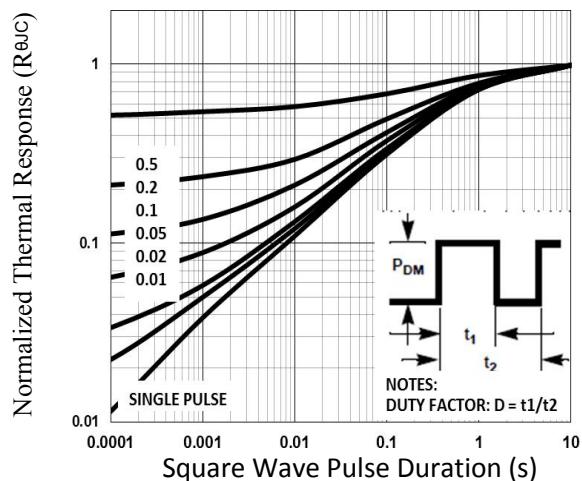
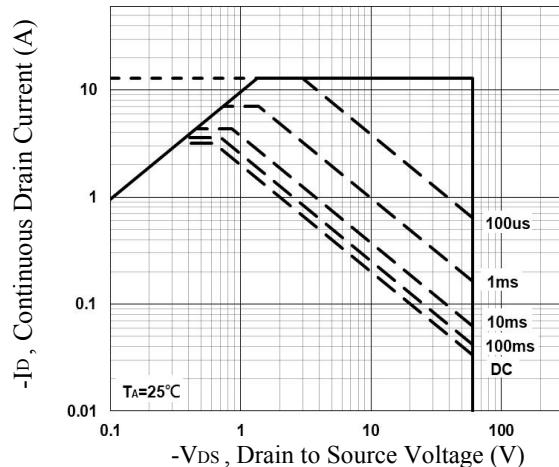
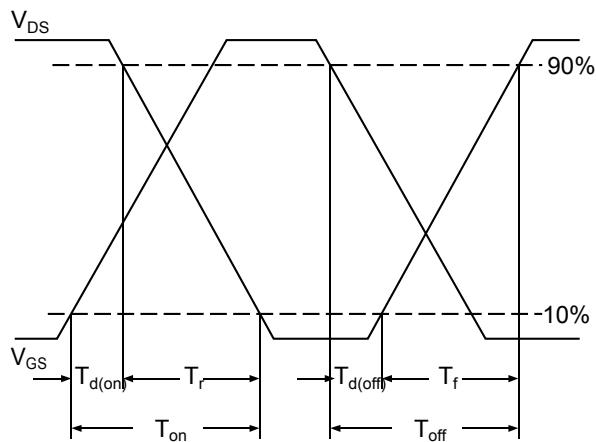
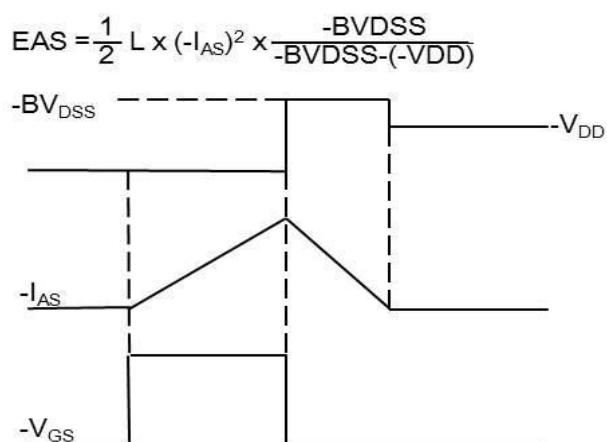
LS	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	-3.2	A
LSM	Pulsed Source Current		---	-6.4	A

Notes:

1. Repetitive Rating : Pulsed width limited by maximum junction temperature.
2. $V_{DD}=-25V, V_{GS}=-10V, L=0.1mH, I_{AS}=-18A, R_G=25\Omega$, Starting $T_J=25^\circ C$.
3. The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
4. Essentially independent of operating temperature.

Typical Characteristics: ($T_c=25^\circ C$ unless otherwise noted)


Fig.1 Continuous Drain Current vs. T_J

Fig.2 Normalized RDSON vs. T_J

Fig.3 Normalized V_{th} vs. T_J

Fig.4 Gate Charge Waveform

**Fig.5 Normalized Transient Impedance****Fig.6 Maximum Safe Operation Area****Fig.7 Switching Time Waveform****Fig.8 EAS Waveform**

0086-0755-8278-9056

www.doingter.cn