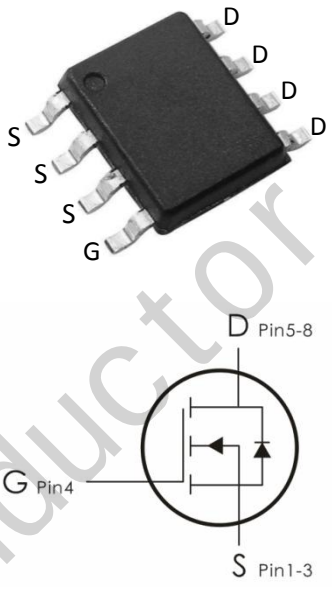
Description：

This N-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=8A,$R_{DS(ON)}$<18m Ω @V_{GS}=10V
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra low $R_{DS(ON)}$.
5) Excellent package for good heat dissipation.

Absolute Maximum Ratings： (T_A=25℃ 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_A=25℃	8	A
	Continuous Drain Current- T_A=100℃	5.6	
I_{DM}	Drain Current-Pulsed [1]	32	A
P_D	Power Dissipation	2.1	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient	60	℃/W

Electrical Characteristics: (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	60	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=60V,T_C=25℃	---	---	1	μA
		V_{GS}=0V, V_{DS}=60V,T_C=125℃	---	---	100	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	1.2	1.8	2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance[2]	V_{GS}=10V,I_D=8A	---	15.5	18	mΩ
		V_{GS}=4.5V,I_D=4A	---	19	25	
Dynamic Characteristics						
C_{iss}	Input Capacitance[4]	V_{DS}=30V, V_{GS}=0V, f=1MHz	---	1888	---	pF
C_{oss}	Output Capacitance[4]		---	112	---	
C_{rss}	Reverse Transfer Capacitance[4]		---	91	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time[2,3]	V_{DD}=30V, I_D=20A R_G=3Ω . V_{GS}=10V	---	6.7	---	ns
t_r	Rise Time[2,3]		---	3.3	---	ns
$t_{d(off)}$	Turn-Off Delay Time[2,3]		---	21	---	ns
t_f	Fall Time[2,3]		---	6.2	---	ns
Q_g	Total Gate Charge	V_{GS}=10V, V_{DS}=30V, I_D=20A	---	39	---	nC
Q_{gs}	Gate-Source Charge		---	7.7	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	8.3	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage[3]	V_{GS}=0V,I_S=20A,T_j=25℃	---	---	1.2	V

I_S	Source drain current(Body Diode)	VD=VG=0V	---	---	8	A
Trr	Reverse Recovery Time	I_F=20A, di_F/dt=100A/μs	---	29	---	nS
Qrr	Reverse Recovery Charge		---	21	---	nC

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production

Typical Characteristics: (T_A=25℃ unless otherwise noted)

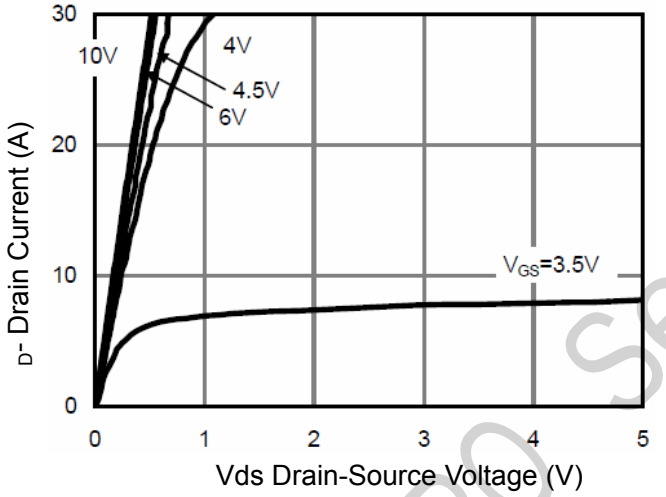


Figure 1 Output Characteristics

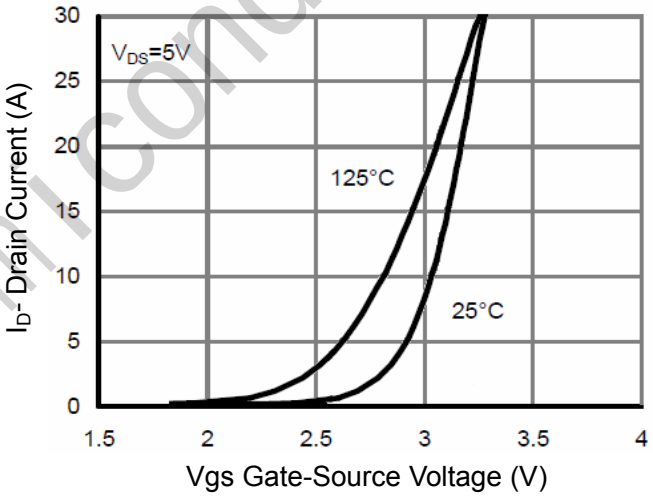


Figure 2 Transfer Characteristics

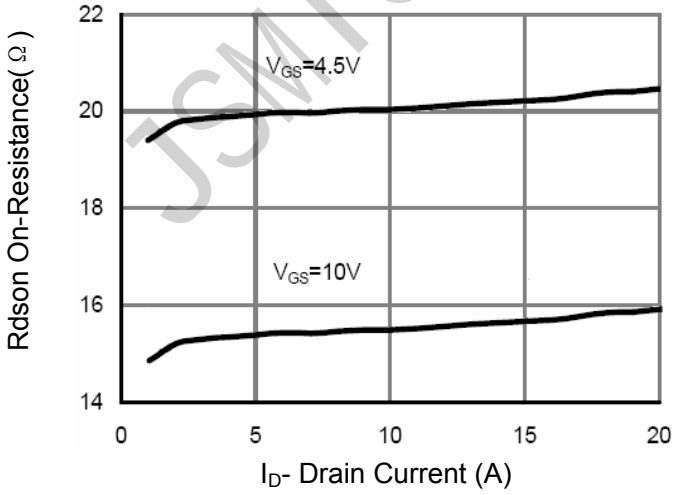


Figure 3 Rdson- Drain Current

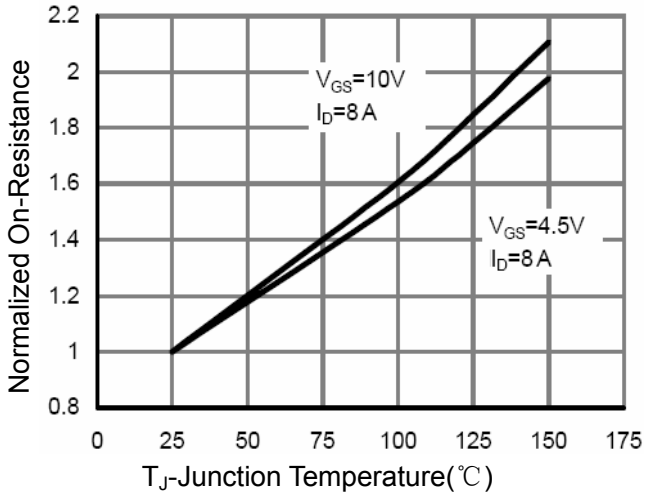


Figure 4 Rdson-JunctionTemperature

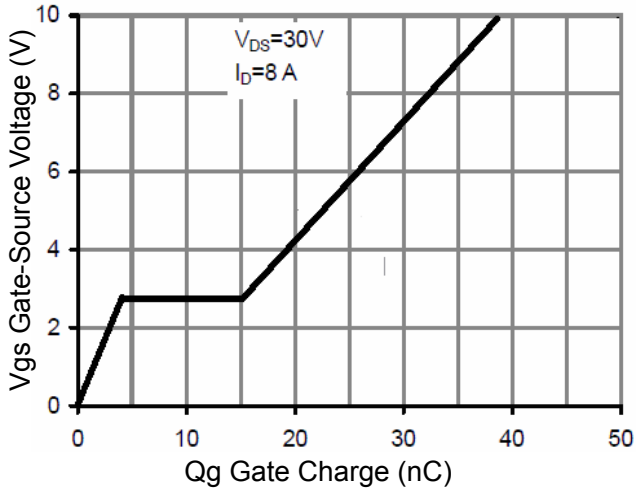


Figure 5 Gate Charge

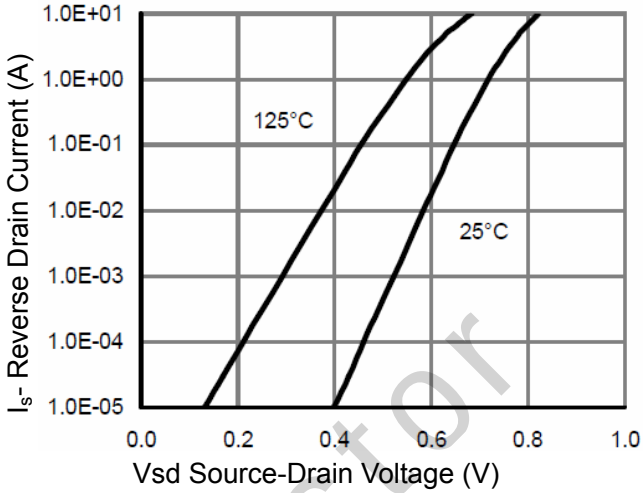


Figure 6 Source- Drain Diode Forward

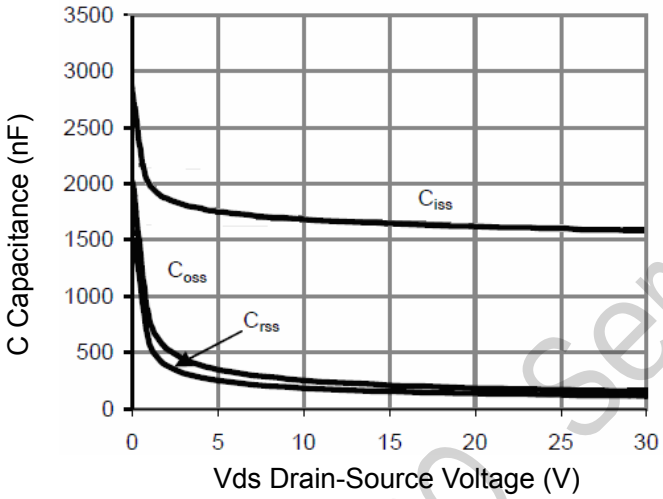


Figure 7 Capacitance vs Vds

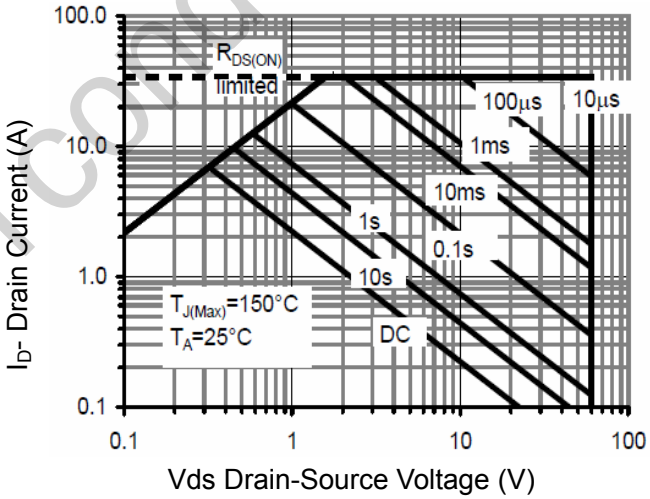


Figure 8 Safe Operation Area

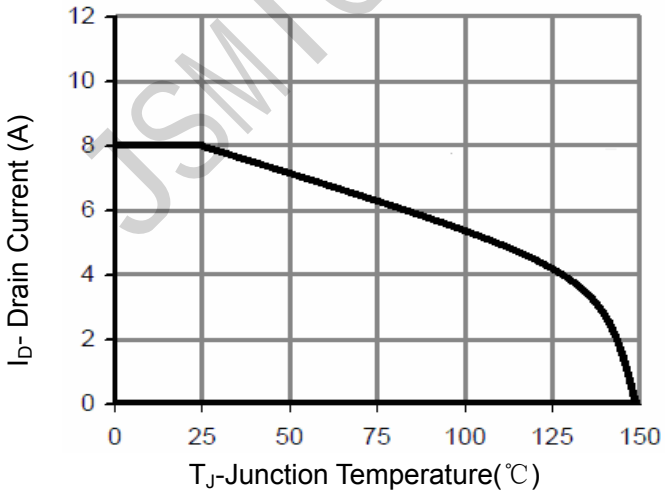


Figure 9 Current De-rating

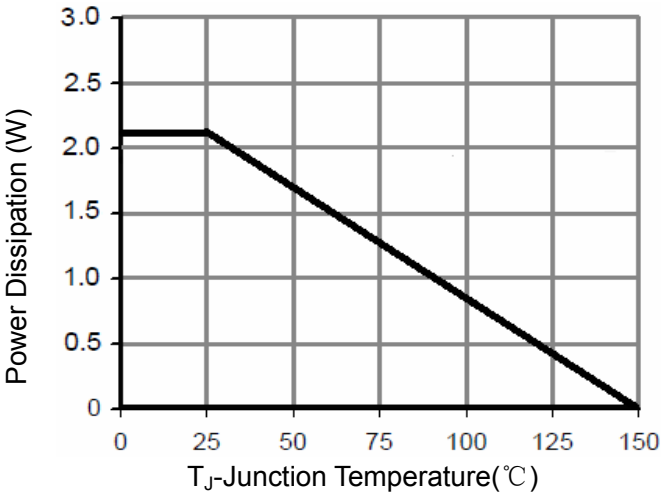


Figure 10 Power De-rating

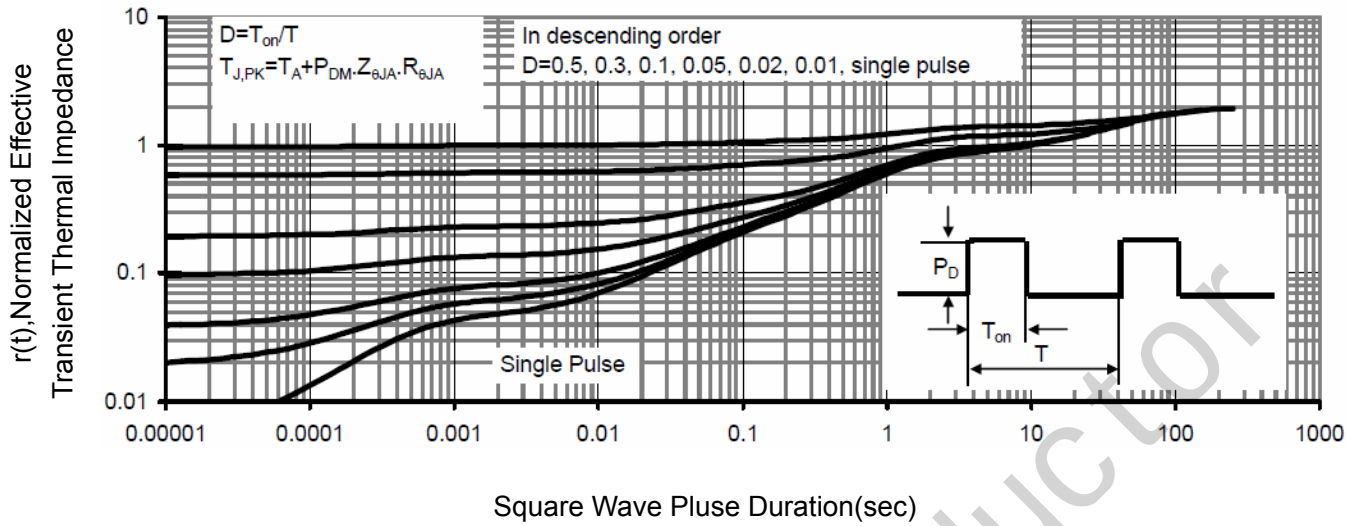
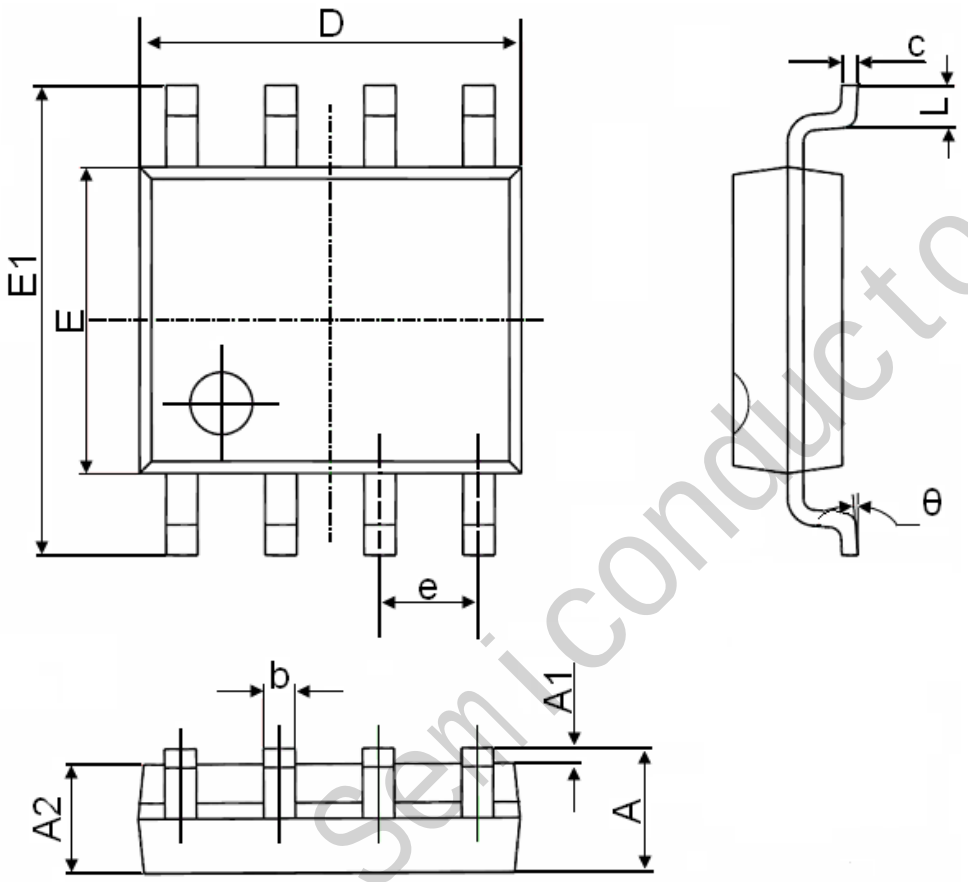


Figure 11 Normalized Maximum Transient Thermal Impedance

SOP-8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°