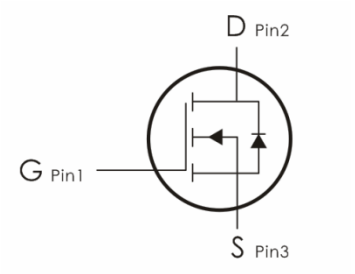
Description：

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}=80V,I_D=160A,$R_{DS(ON)}$<4.7mΩ @V_{GS}=10V
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra $R_{DS(ON)}$.
5) Excellent package for good heat dissipation.

Absolute Maximum Ratings： (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	80	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current-TC=25℃	160	A
	Continuous Drain Current-TC=100℃	113	
	Pulsed Drain Current	500	
E_{AS}	Single Pulse Avalanche Energy[5]	1936	mJ
P_D	Power Dissipation	285	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +175	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case[2]	0.53	℃/W

Electrical Characteristics: (T_C=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	80	88	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=80V	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0A	---	---	±100	nA
On Characteristics[3]						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	2	3	4	V
$R_{DS(ON)}$	Drain-Source On Resistance	V_{GS}=10V,I_D=20A	---	3.7	4.7	mΩ
G_{FS}	Forward Transconductance	V_{DS}=5V, I_D=20A	60	---	---	S
Dynamic Characteristics[4]						
C_{iss}	Input Capacitance	V_{DS}=25V, V_{GS}=0V, f=1MHz	---	6500	---	pF
C_{oss}	Output Capacitance		---	810	---	
C_{rss}	Reverse Transfer Capacitance		---	310	---	
Switching Characteristics[4]						
$t_{d(on)}$	Turn-On Delay Time	V_{DD}=40V,I_D=2A,R_L=15Ω V_{GS}=10V,R_G=2.5Ω	---	31.5	---	ns
t_r	Rise Time		---	33	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	46	---	ns
t_f	Fall Time		---	17.5	---	ns
Q_g	Total Gate Charge	V_{GS}=10V, V_{DS}=40V, I_D=20A	---	130	---	nC
Q_{gs}	Gate-Source Charge		---	36	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	46	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage[3]	V_{GS}=0V,I_S=40A	---	---	1.2	V

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 ≤ 300 μ s, Duty Cycle ≤ 2%.

4. Guaranteed by design, not subject to production

5. EAS condition：Tj=25℃,VDD=40V,VG=10V,L=0.5mH,Rg=25Ω

Typical Characteristics：

(T_C=25℃ unless otherwise noted)

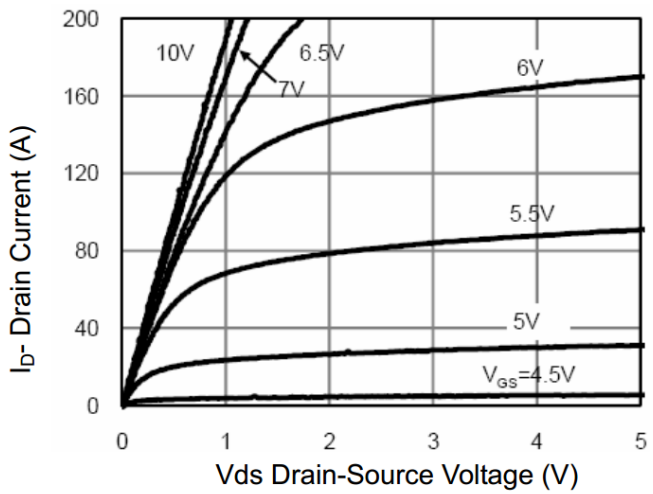


Figure 1 Output Characteristics

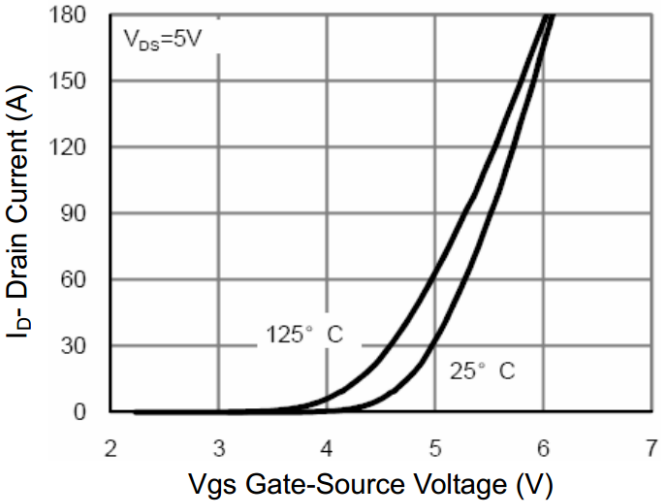


Figure 2 Transfer Characteristics

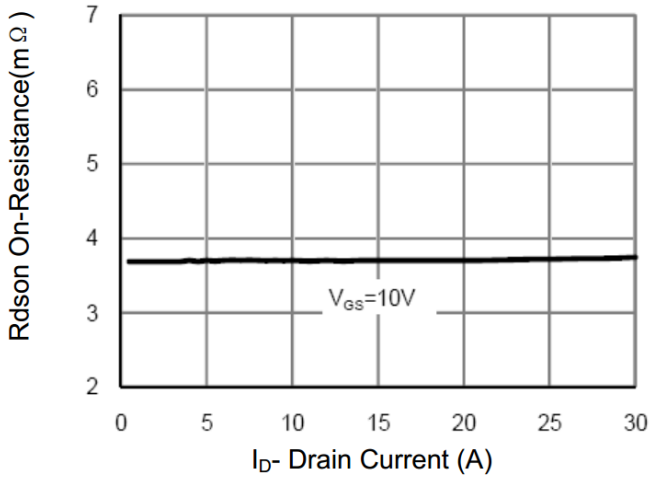


Figure 3 Rdson- Drain Current

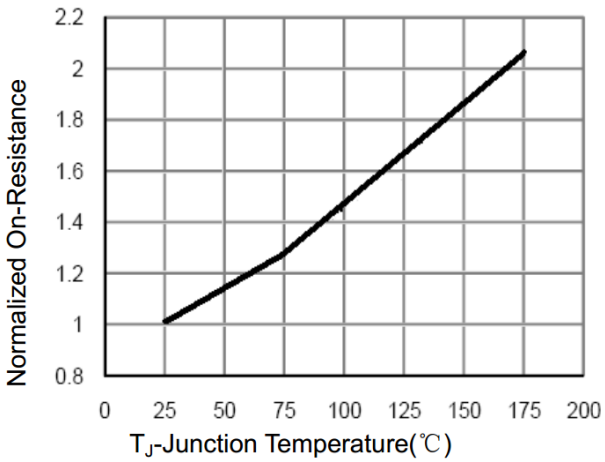


Figure 4 Rdson-JunctionTemperature

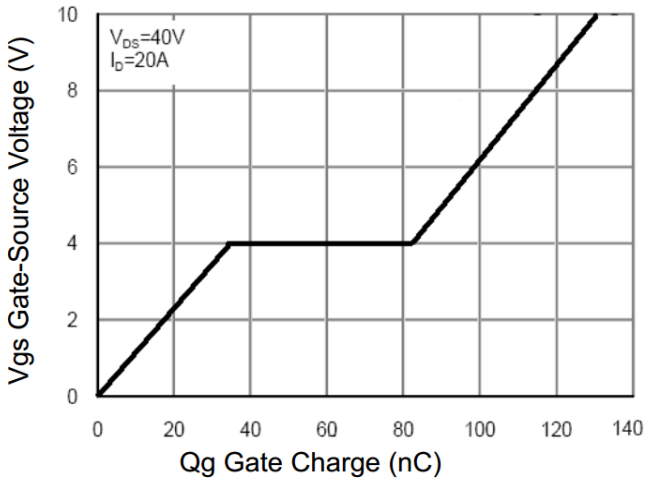


Figure 5 Gate Charge

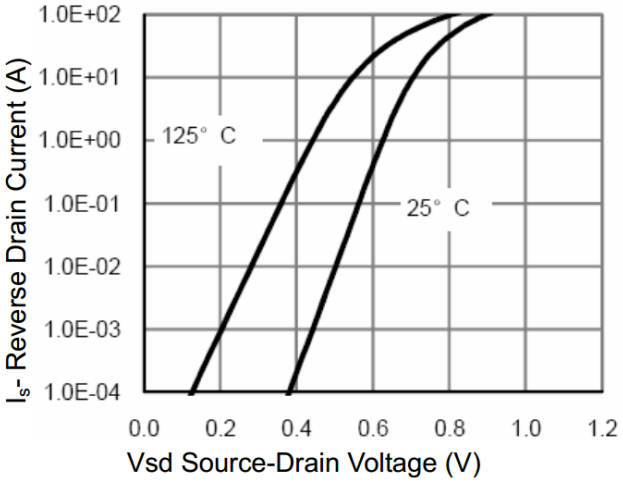


Figure 6 Source- Drain Diode Forward

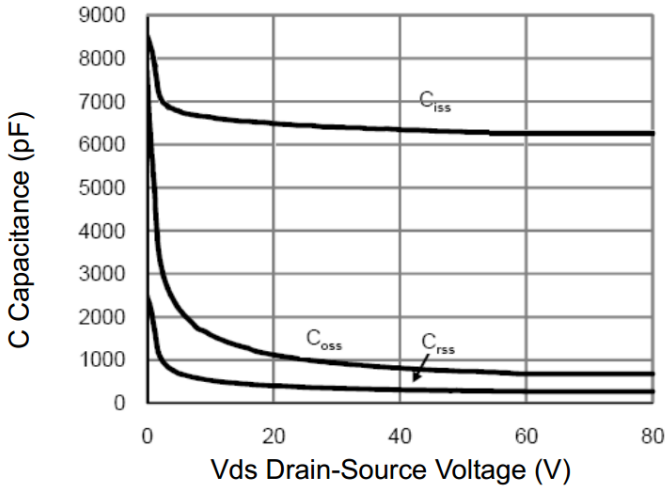


Figure 7 Capacitance vs Vds

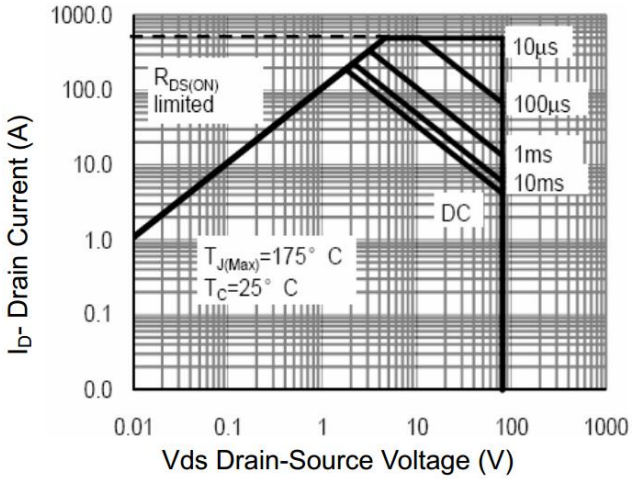


Figure 8 Safe Operation Area

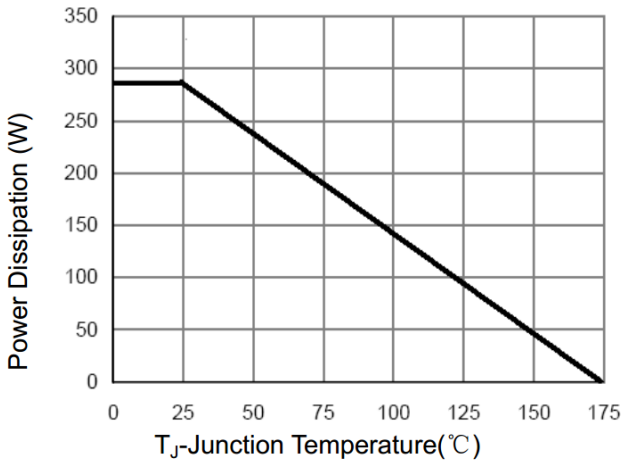


Figure 9 Power De-rating

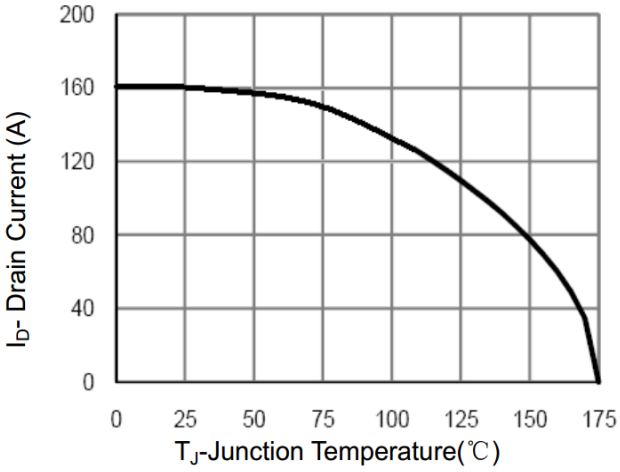


Figure 10 Current De-rating

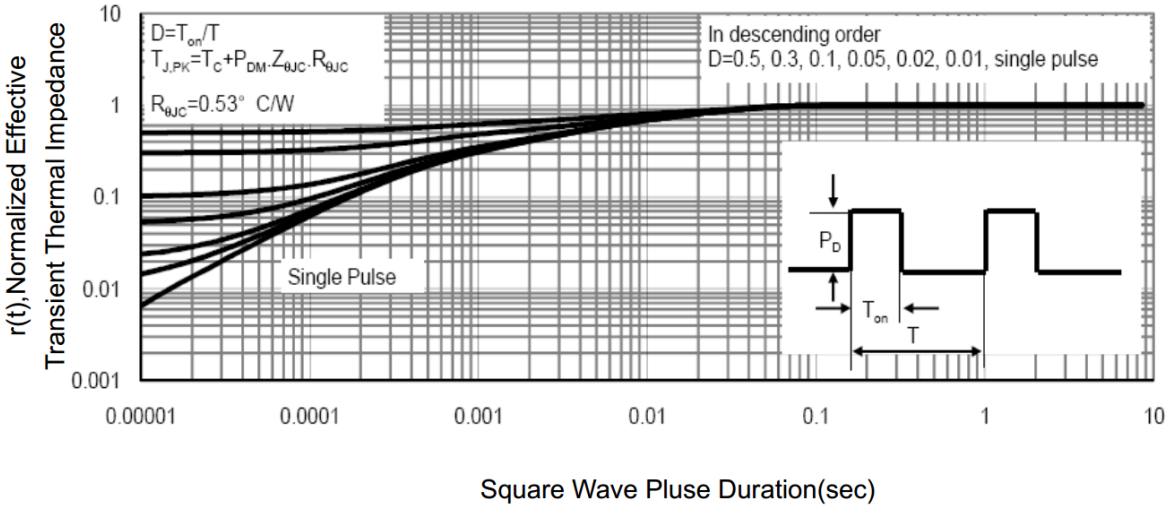


Figure 11 Normalized Maximum Transient Thermal Impedance