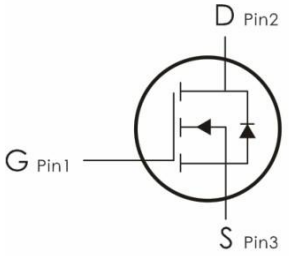
Description：

This N-Channel MOSFET uses advanced SGT 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=70A,$R_{DS(ON)}$<8mΩ @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- [1]	70	A
	Pulsed Drain Current [2]	210	
E_{AS}	Single Pulse Avalanche Energy[5]	60	mJ
P_D	Power Dissipation[3]	125	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case	1	℃/W
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient[4]	62	

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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	---	---	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						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	1	---	2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance	V_{GS}=10V,I_D=12A	---	6.6	8	mΩ
		V_{GS}=4.5V,I_D=10A	---	8.5	10	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=40V, V_{GS}=0V, f=1MHz	---	3056.3	---	pF
C_{oss}	Output Capacitance		---	963.5	---	
C_{rss}	Reverse Transfer Capacitance		---	45.9	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DD}=50V, R_{GEN}=2Ω .V_{GS}=10V I_D=25A	---	20.2	---	ns
t_r	Rise Time		---	20.2	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	53.5	---	ns
t_f	Fall Time		---	71.5	---	ns
Q_g	Total Gate Charge	V_{GS}=10V, V_{DS}=50V, I_D=25A	---	43.1	---	nC
Q_{gs}	Gate-Source Charge		---	5.9	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	11.6	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage	V_{GS}=0V,I_S=12A	---	---	1.3	V
Ls	Diode Forward Current	---	---	---	70	A

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Trr	Reverse Recovery Time	Tj=25℃,I_F=25A di/dt=100A/μs (Note3)	---	68.5	---	NS
Qrr	Reverse Recovery Charge		---	138.3	---	NC

Notes:

1) Calculated continuous current based on maximum allowable junction temperature.
2) Repetitive rating; pulse width limited by max. junction temperature.
3) Pd is based on max. junction temperature, using junction-case thermal resistance.
4) The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with T_a=25 ℃.
5) V_{DD}=50 V, R_G=25 Ω, L=0.3 mH, starting T_j=25℃.

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

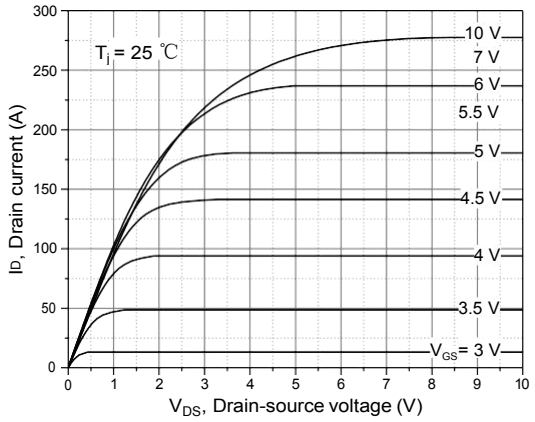


Figure 1, Typ. output characteristics

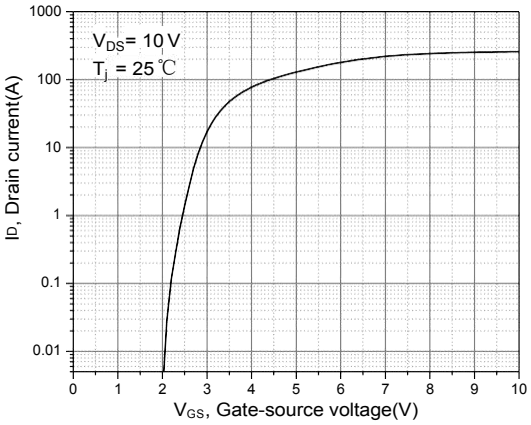


Figure 2, Typ. transfer characteristics

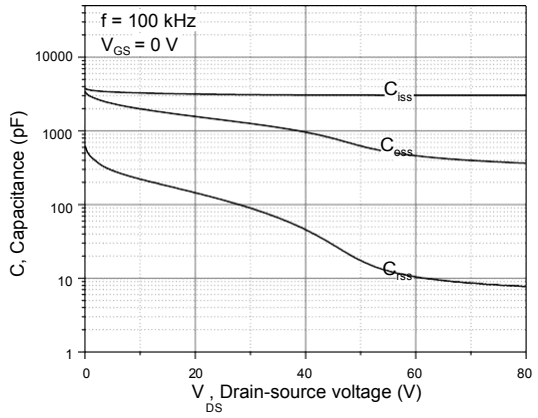


Figure 3, Typ. capacitances

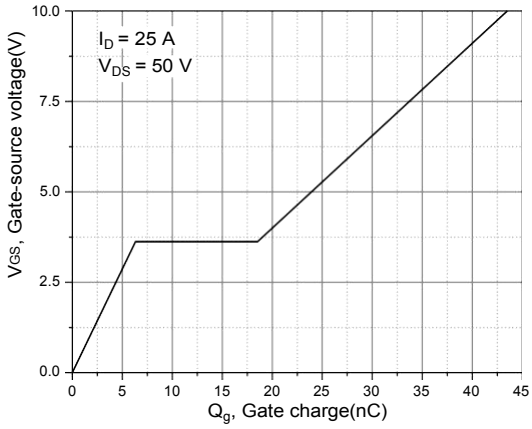


Figure 4, Typ. gate charge

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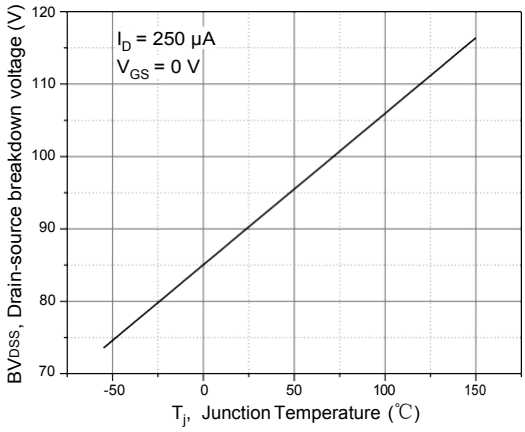


Figure 5, Drain-source breakdown voltage

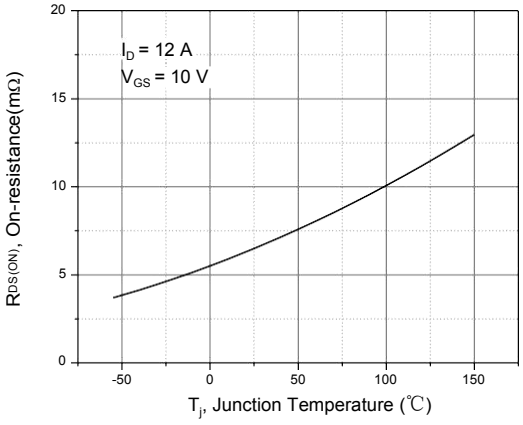


Figure 6, Drain-source on-state resistance

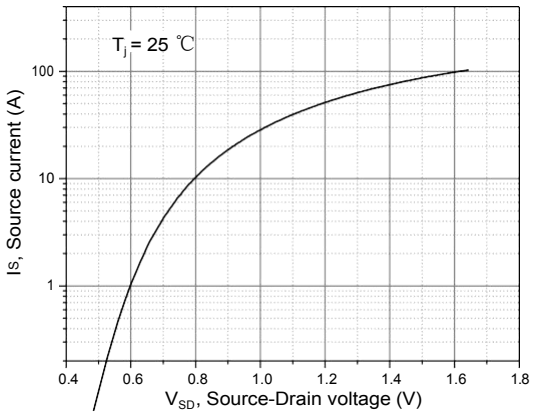


Figure 7, Forward characteristic of body diode

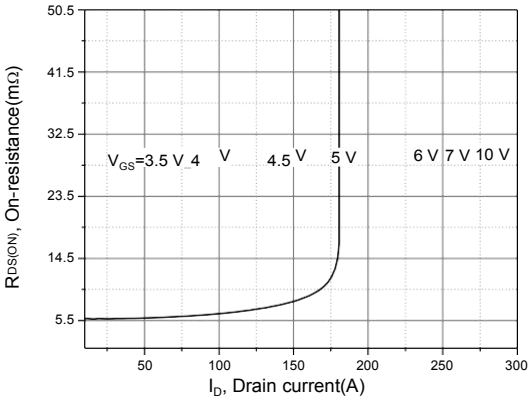


Figure 8, Drain-source on-state resistance

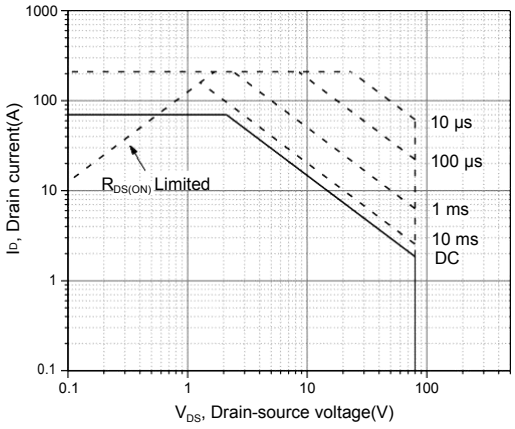


Figure 9, Safe operation area T_C=25 ℃

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