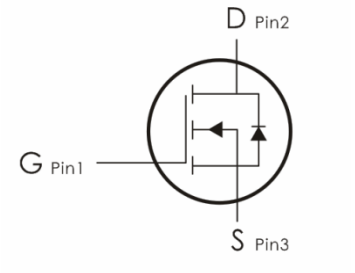
Description：

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}=100V,I_D=120A,$R_{DS(ON)}$<6mΩ @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	100	V
V_{GS}	Gate-Source Voltage	±20	V
I_D***	Continuous Drain Current T_C=25℃	120	A
	Continuous Drain Current-T_C=100℃	80	
I_{DM}****	Pulsed Drain Current	350	
I_S	Continuous-Source Current	80	
P_D	Power Dissipation	150	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	0.85	℃/W

$R_{\theta JA}$ **	Thermal Resistance,Junction to Ambient	62.5	℃/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	100	---	---	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	---	---	±30	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	1	---	3	V
$R_{DS(ON)}$ [a]	Drain-Source On Resistance	V_{GS}=10V,I_D=20A	---	5	6	mΩ
		V_{GS}=4.5V,I_D=10A	---	7	8	
Dynamic Characteristics [b]						
C_{iss}	Input Capacitance	V_{DS}=25V, V_{GS}=0V, f=1MHz	---	3390	---	pF
C_{oss}	Output Capacitance		---	1940	---	
C_{rss}	Reverse Transfer Capacitance		---	210	---	
Switching Characteristics [b]						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=80V, I_D=20A, R_{GEN}=3.3Ω	---	14	---	ns
t_r	Rise Time		---	58	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	38	---	ns
t_f	Fall Time		---	64	---	ns
Q_g	Total Gate Charge	V_{GS}=10V, V_{DS}=80V, I_D=20A	---	59	---	nC
Q_{gs}	Gate-Source Charge		---	11	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	15	---	nC
Drain-Source Diode Characteristics						

V_{SD} [a]	Source-Drain Diode Forward Voltage	V_{GS}=0V,I_S=20A	---	---	1.2	V
Trr	Reverse Recovery Time	I_{DS} = 20 A, V_{GS} = 0 V dI_{SD}/dt = 100 A/μs	---	61	---	nS
Qrr	Reverse Recovery Charge		---	105	---	μC

Notes:

* Pulse width ≤ 300 μs, duty cycle ≤ 2 %

** Mounted on Large Heat Sink

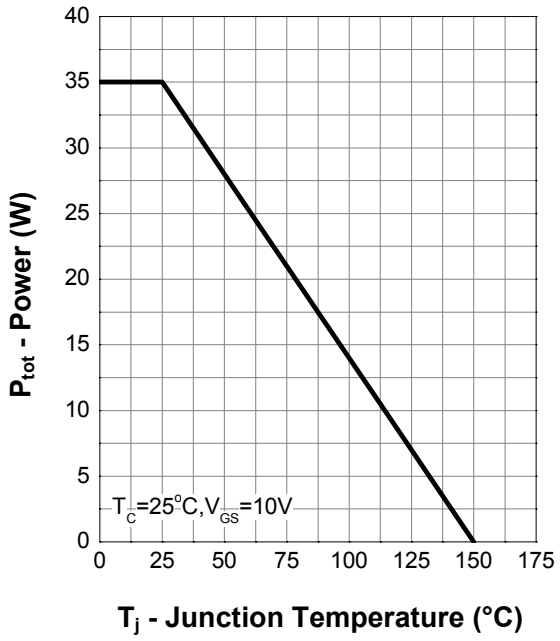
*** limited by bonding wire

a : Pulse test ; pulse width ≤ 300 μs, duty cycle ≤ 2%

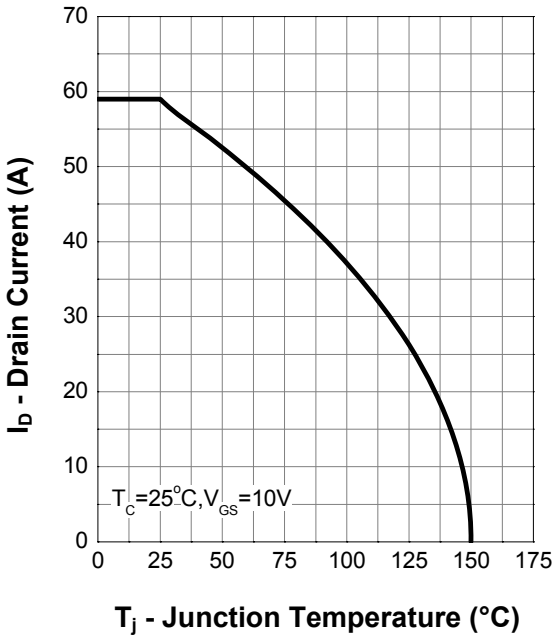
b : Guaranteed by design, not subject to production testing

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

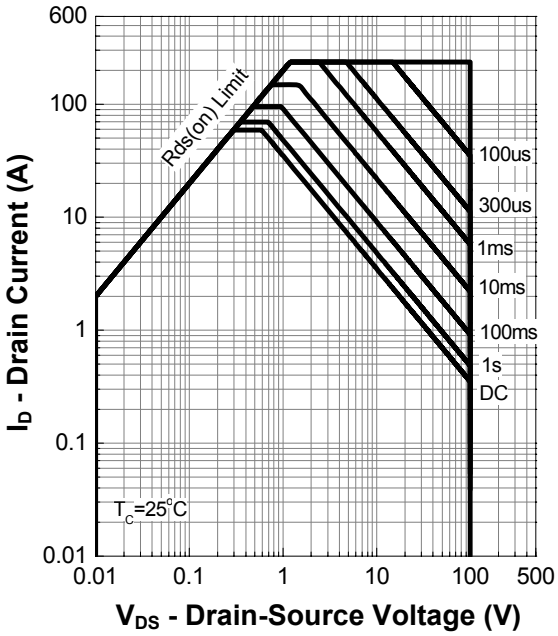
Power Capability



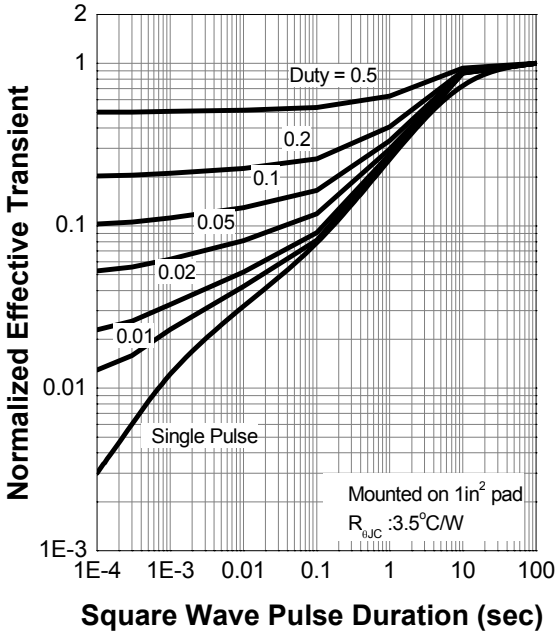
Current Capability



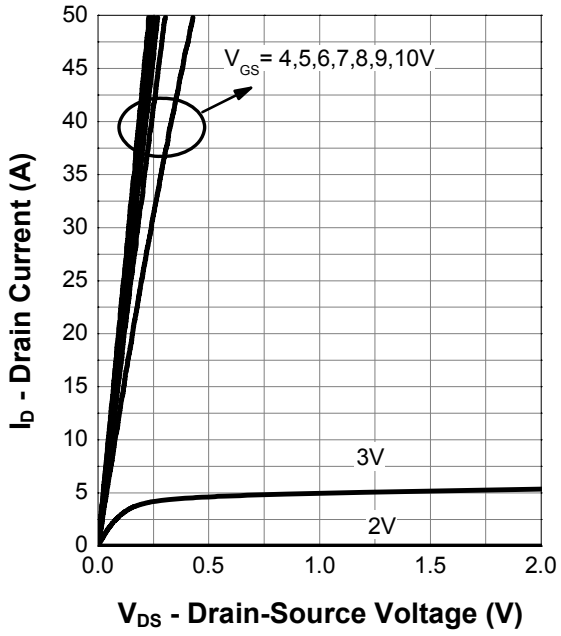
Safe Operation Area



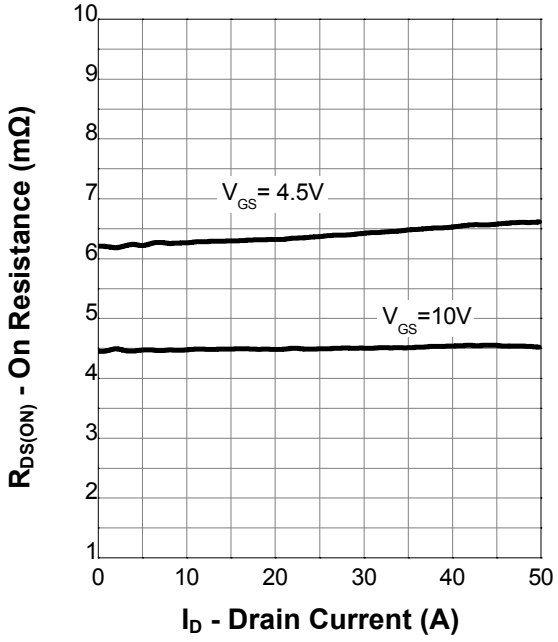
Transient Thermal Impedance



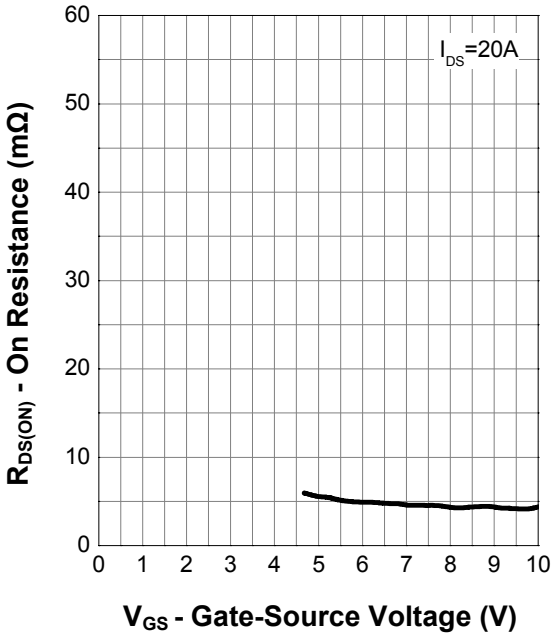
Output Characteristics



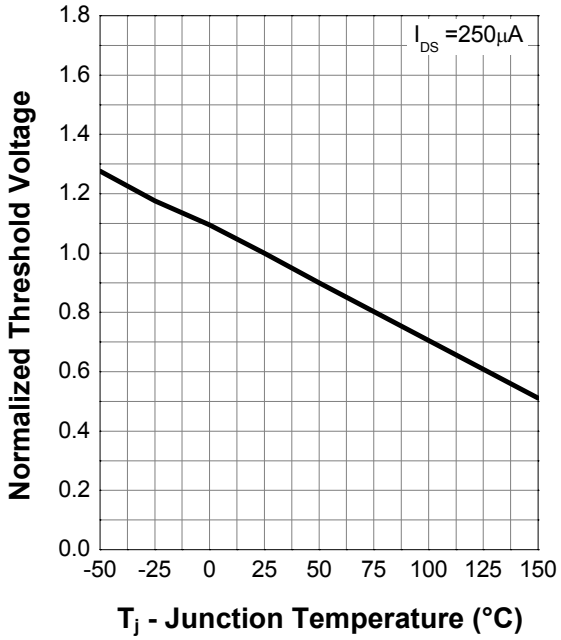
On Resistance



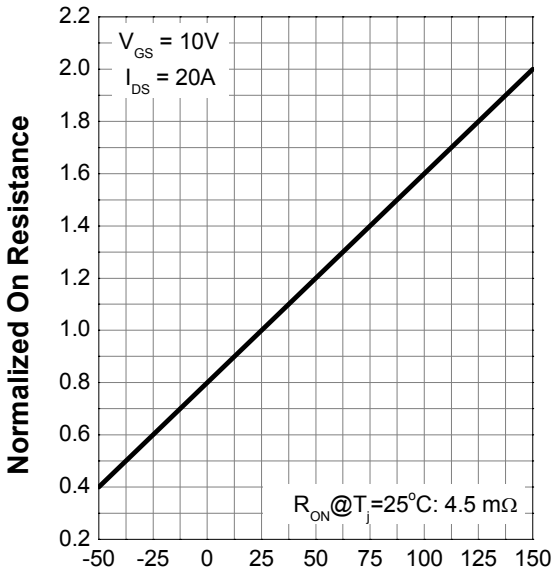
Transfer Characteristics



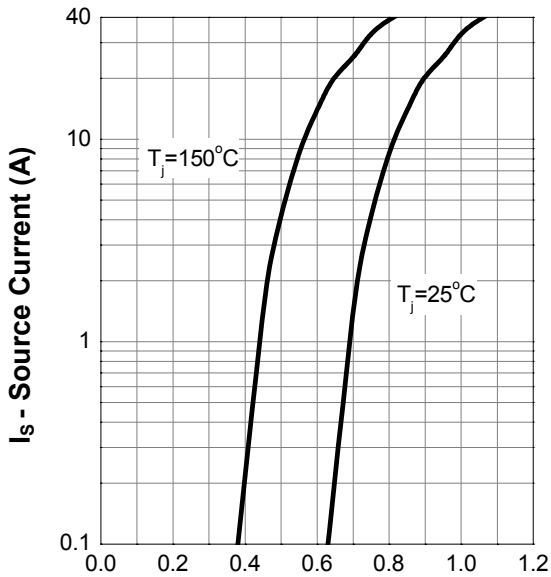
Normalized Threshold Voltage



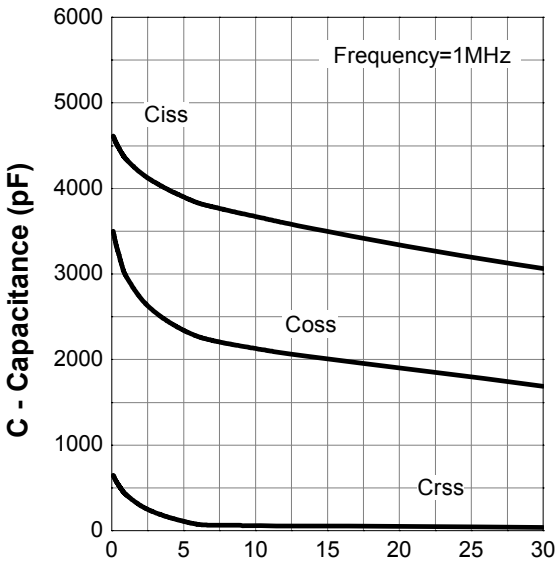
Normalized On Resistance



Diode Forward Current



Capacitance



Gate Charge