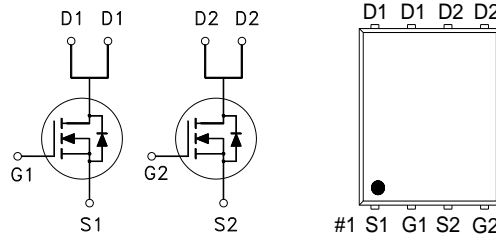


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
60V	38mΩ	15A



G. GATE
D. DRAIN
S. SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ °C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current ³	$T_C = 25\text{ °C}$	I_D	15	A
	$T_C = 100\text{ °C}$		10	
Pulsed Drain Current ¹		I_{DM}	40	
Continuous Drain Current	$T_A = 25\text{ °C}$	I_D	5	
	$T_A = 70\text{ °C}$		4	
Avalanche Current		I_{AS}	18.6	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	17.3	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	20.8	W
	$T_C = 100\text{ °C}$		8	
Power Dissipation	$T_A = 25\text{ °C}$	P_D	2.3	W
	$T_A = 70\text{ °C}$		1.5	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient ²	$R_{\theta JA}$		55	°C / W
Junction-to-Case	$R_{\theta JC}$		6	

¹Pulse width limited by maximum junction temperature.

²The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25\text{ °C}$.

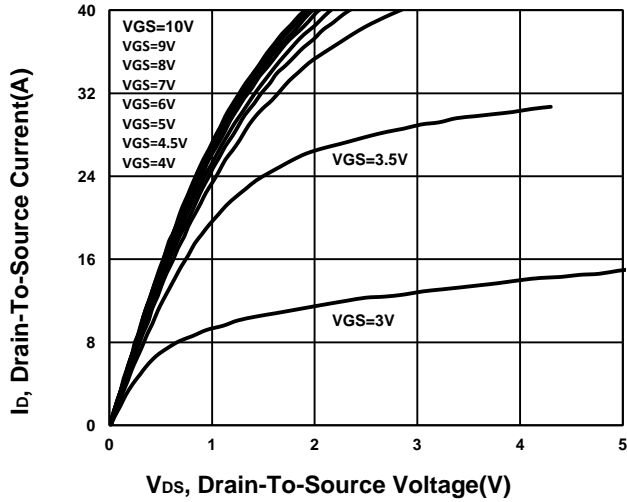
ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.3	1.8	2.3	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 48V, V _{GS} = 0V			1	μA
		V _{DS} = 40V, V _{GS} = 0V, T _J = 55 °C			10	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 5A		36	47	mΩ
		V _{GS} = 10V, I _D = 5A		33	38	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 5A		29		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz		541		pF
Output Capacitance	C _{oss}			75		
Reverse Transfer Capacitance	C _{rss}			45		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		1.3		Ω
Total Gate Charge ²	Q _g	V _{GS} = 10V		13.3		nC
		V _{GS} = 4.5V		7.7		
Gate-Source Charge ²	Q _{gs}	V _{DS} = 30V, I _D = 5A		1.7		
Gate-Drain Charge ²	Q _{gd}			4.6		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 30V , I _D ≅ 5A, V _{GS} = 10V, R _{GEN} = 6Ω		16		nS
Rise Time ²	t _r			10		
Turn-Off Delay Time ²	t _{d(off)}			34		
Fall Time ²	t _f			10		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current ³	I _S				15	A
Forward Voltage ¹	V _{SD}	I _F = 5A, V _{GS} = 0V			1.3	V
Reverse Recovery Time	t _{rr}	I _F = 5A, dI _F /dt = 100A / μS		14.6		nS
Reverse Recovery Charge	Q _{rr}				5	

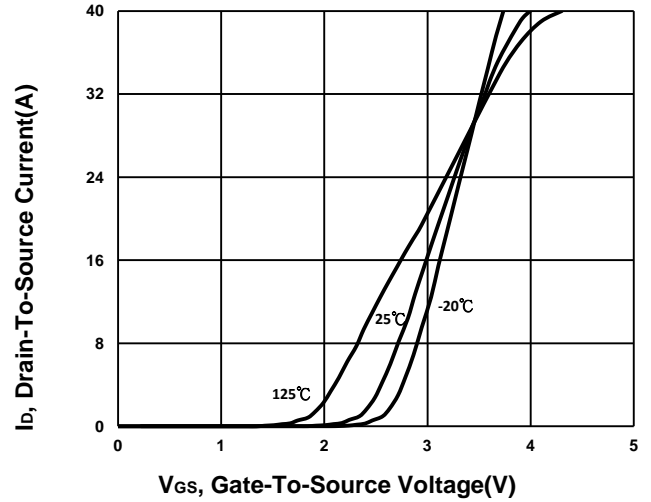
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

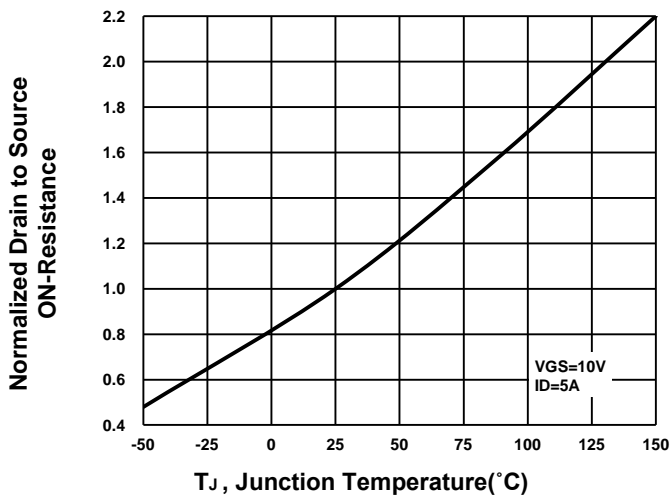
Output Characteristics



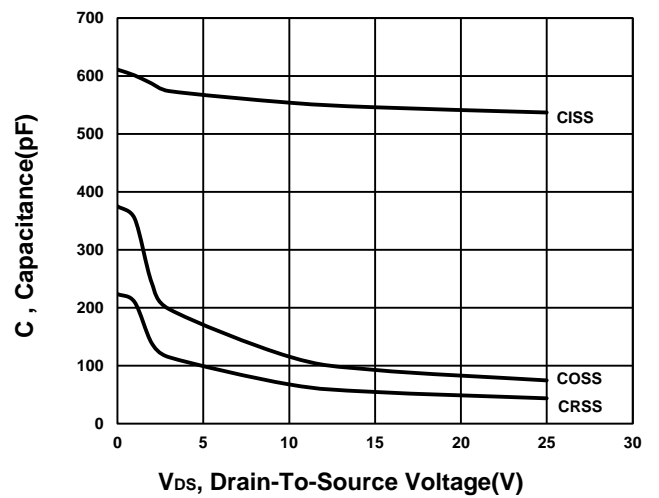
Transfer Characteristics



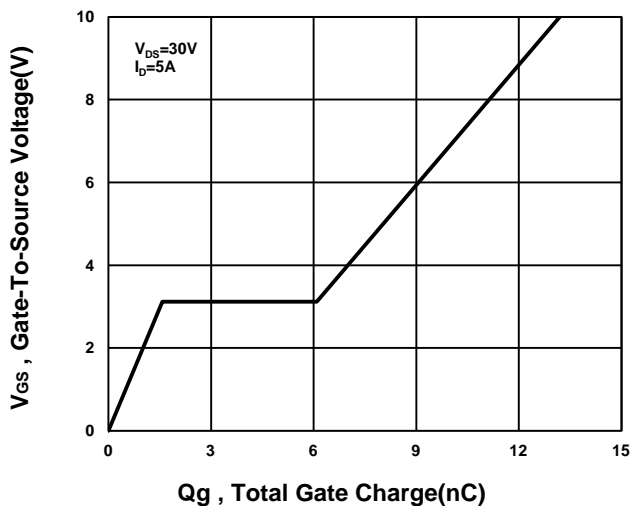
On-Resistance VS Temperature



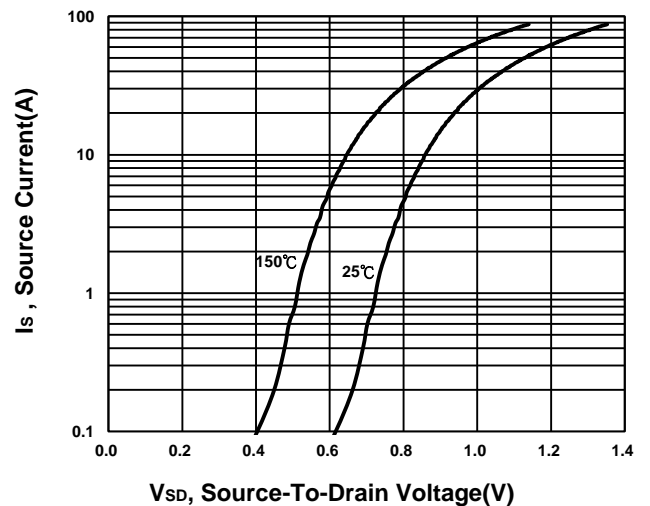
Capacitance Characteristic



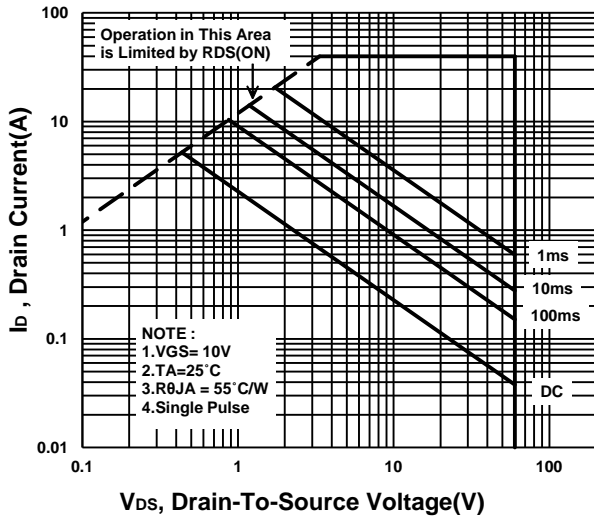
Gate charge Characteristics



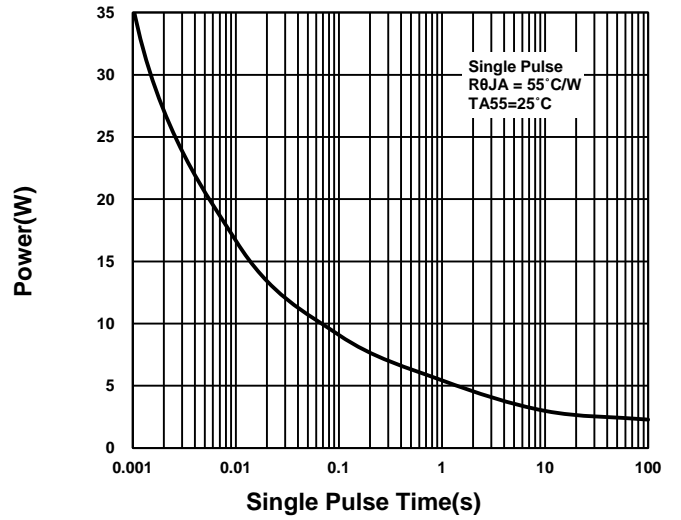
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

