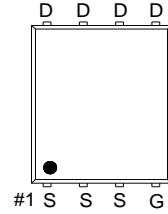
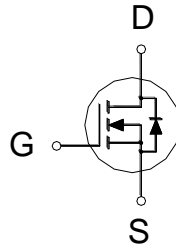




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
100V	10mΩ	58A



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}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	$T_C = 25\text{ °C}$	I_D	58	A
	$T_C = 100\text{ °C}$		41	
Pulsed Drain Current ¹		I_{DM}	120	
Continuous Drain Current	$T_A = 25\text{ °C}$	I_D	14.7	
	$T_A = 70\text{ °C}$		12	
Avalanche Current		I_{AS}	12.5	
Avalanche Energy	$L = 1\text{mH}$	E_{AS}	78.1	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	78	W
	$T_C = 100\text{ °C}$		39	
Power Dissipation ³	$T_A = 25\text{ °C}$	P_D	5	W
	$T_A = 70\text{ °C}$		3.5	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 175	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient ²	$t \leq 10\text{s}$	$R_{\theta JA}$		30	°C / W
Junction-to-Ambient ²	Steady-State	$R_{\theta JA}$		60	
Junction-to-Case	Steady-State	$R_{\theta JC}$		1.9	

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 $T_A = 25\text{ °C}$.

³The Power dissipation is based on $R_{\theta JA} t \leq 10\text{s}$ value.

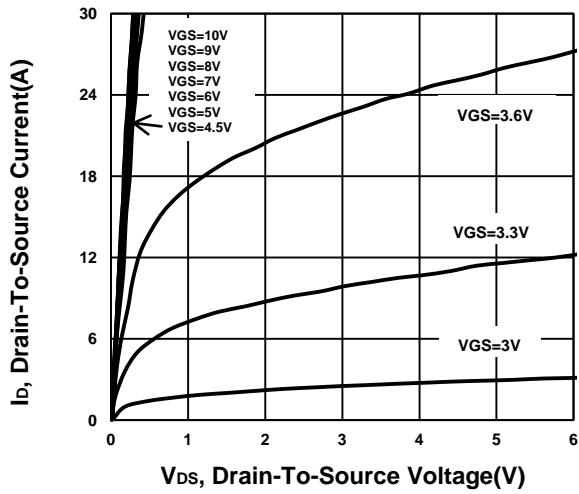
ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	100			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.4	2	3	V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 100V, V _{GS} = 0V			1	μA
		V _{DS} = 100V, V _{GS} = 0V, T _J = 125 °C			100	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 10V, I _D = 12A		8	10	mΩ
		V _{GS} = 4.5V, I _D = 10A		11	14.5	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 12A		53		S
DYNAMIC						
Input Capacitance	C _{iSS}	V _{GS} = 0V, V _{DS} = 50V, f = 1MHz		2183		pF
Output Capacitance	C _{oss}			190		
Reverse Transfer Capacitance	C _{rSS}			13		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		1.5		Ω
Total Gate Charge ²	Q _g	V _{GS} = 10V	V _{DS} = 50V, V _{GS} = 10V, I _D = 12A	40		nC
		V _{GS} = 4.5V		22		
Gate-Source Charge ²	Q _{gs}	7				
Gate-Drain Charge ²	Q _{gd}	11				
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 50V, I _D ≅ 12A, V _{GS} = 10V, R _{GEN} = 6Ω		15		
Rise Time ²	t _r		42			
Turn-Off Delay Time ²	t _{d(off)}		53			
Fall Time ²	t _f		65			
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I _S				58	A
Forward Voltage ¹	V _{SD}	I _F = 12A, V _{GS} = 0V			1.2	V
Reverse Recovery Time	t _{rr}	I _F = 12A, di _F /dt = 100A / μS		32		nS
Reverse Recovery Charge	Q _{rr}			40		nC

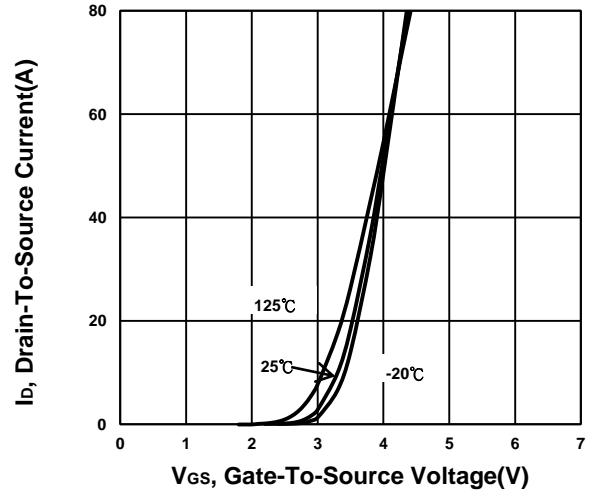
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

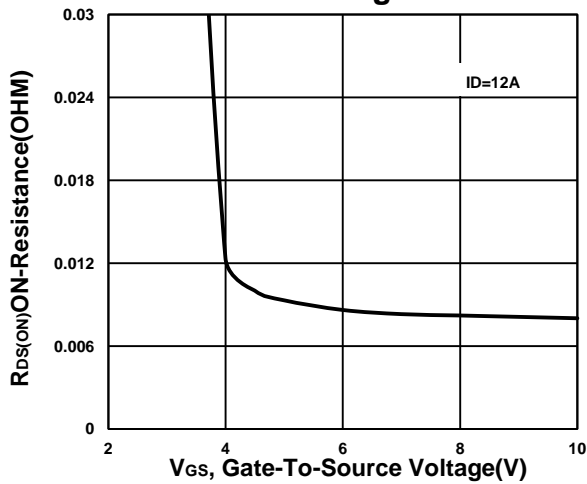
Output Characteristics



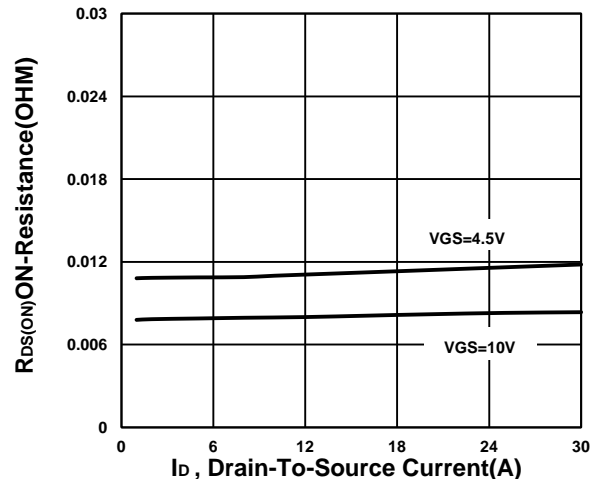
Transfer Characteristics



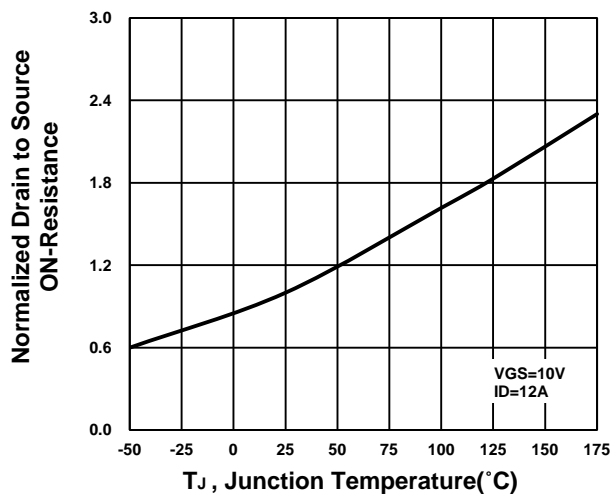
On-Resistance VS Gate-To-Source Voltage



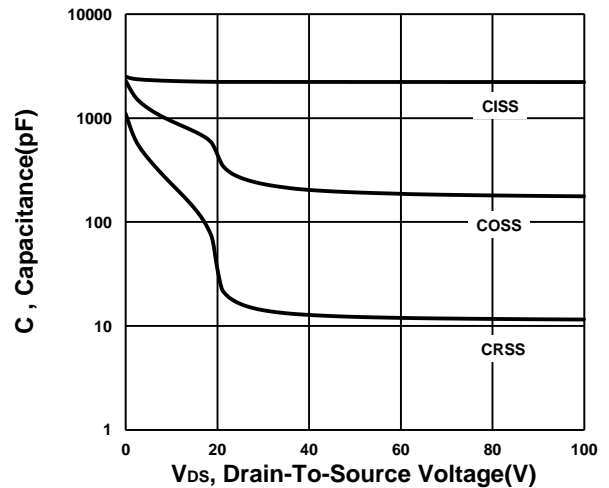
On-Resistance VS Drain Current



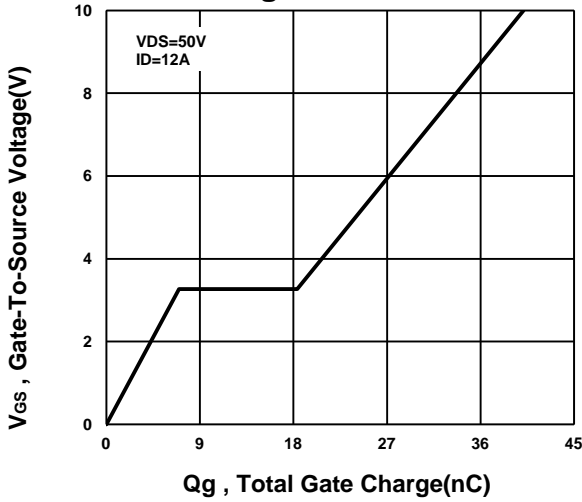
On-Resistance VS Temperature



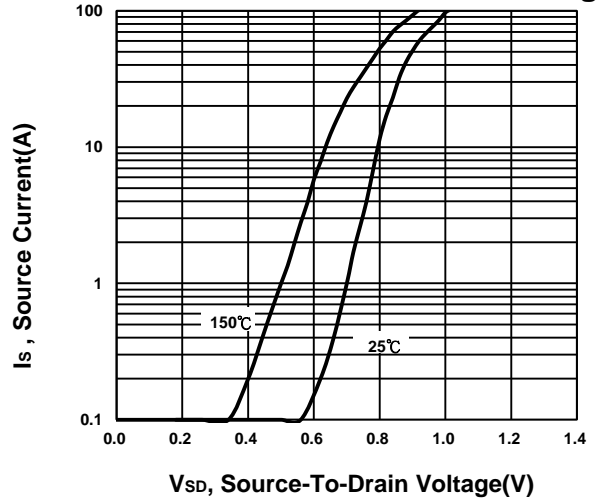
Capacitance Characteristic



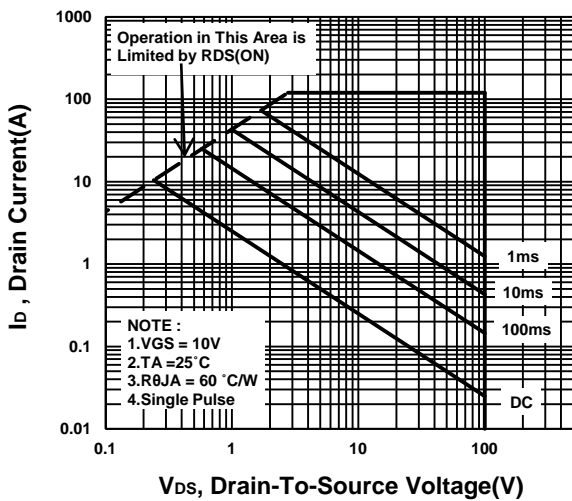
Gate charge Characteristics



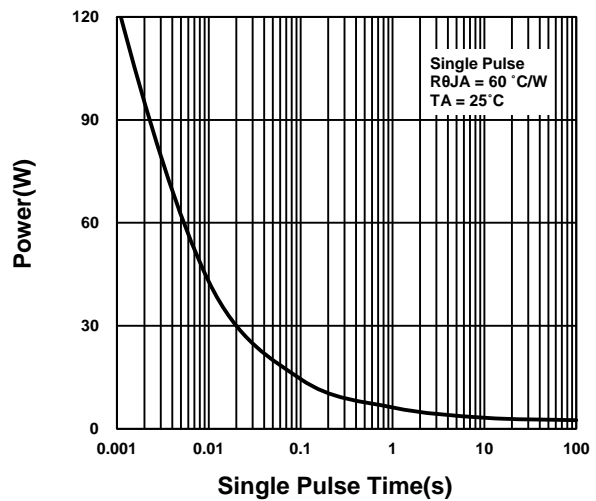
Source-Drain Diode Forward Voltage



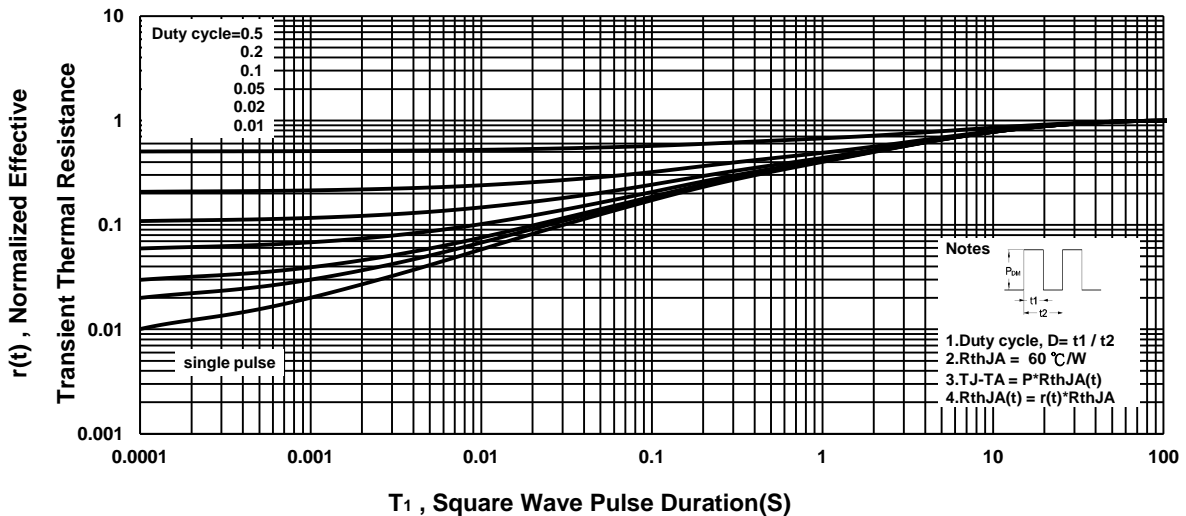
Safe Operating Area



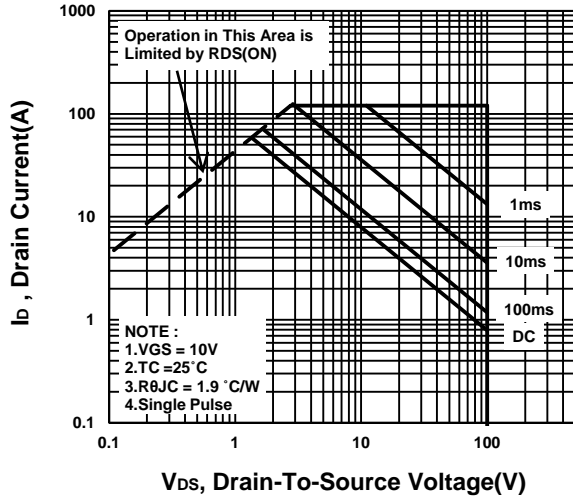
Single Pulse Maximum Power Dissipation



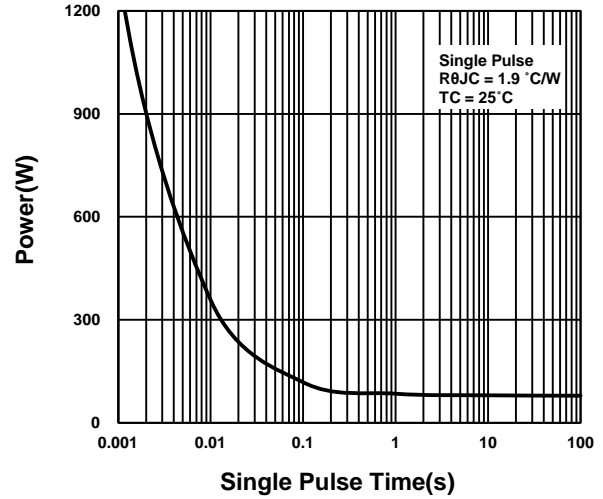
Transient Thermal Response Curve



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

