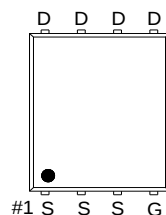
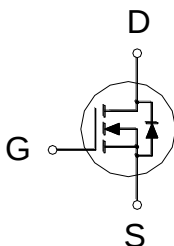


PRODUCT SUMMARY

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

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$ 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	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	58	A
	$T_C = 100\text{ }^{\circ}\text{C}$		41	
Pulsed Drain Current ¹		I_{DM}	120	
Continuous Drain Current	$T_A = 25\text{ }^{\circ}\text{C}$	I_D	14.7	
	$T_A = 70\text{ }^{\circ}\text{C}$		12	
Avalanche Current		I_{AS}	12.5	
Avalanche Energy	$L = 1\text{mH}$	E_{AS}	78.1	mJ
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	78	W
	$T_C = 100\text{ }^{\circ}\text{C}$		39	
Power Dissipation ³	$T_A = 25\text{ }^{\circ}\text{C}$	P_D	5	W
	$T_A = 70\text{ }^{\circ}\text{C}$		3.5	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 175	$^{\circ}\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient ²	$t \leq 10\text{s}$	$R_{\theta JA}$		30	$^{\circ}\text{C} / \text{W}$
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 $T_A = 25^{\circ}\text{C}$.³The Power dissipation is based on $R_{\theta JA}$ $t \leq 10\text{s}$ value.

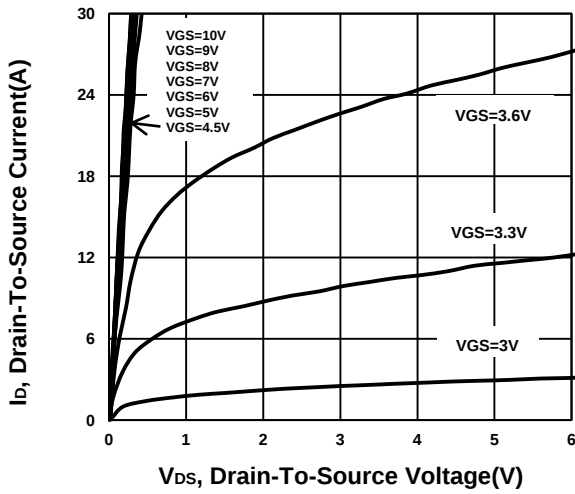
ELECTRICAL CHARACTERISTICS ($T_J = 25\text{ }^{\circ}\text{C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.4	2	3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$			1	μA
		$V_{DS} = 100V, V_{GS} = 0V, T_J = 125\text{ }^{\circ}C$			100	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 12A$		8	10	m Ω
		$V_{GS} = 4.5V, I_D = 10A$		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	$V_{DS} = 50V, V_{GS} = 10V, I_D = 12A$	$V_{GS} = 10V$	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	$t_{d(on)}$		$V_{DS} = 50V, I_D \cong 12A, V_{GS} = 10V, R_{GEN} = 6\Omega$		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 ($T_J = 25\text{ }^{\circ}C$)						
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}	$I_F = 12A, di_F/dt = 100A / \mu S$		32		nS
Reverse Recovery Charge	Q_{rr}			40		nC

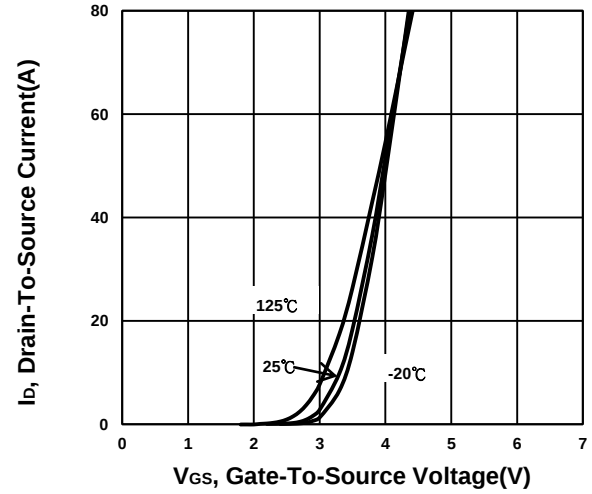
¹Pulse test : Pulse Width $\leq 300\text{ }\mu\text{sec}$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

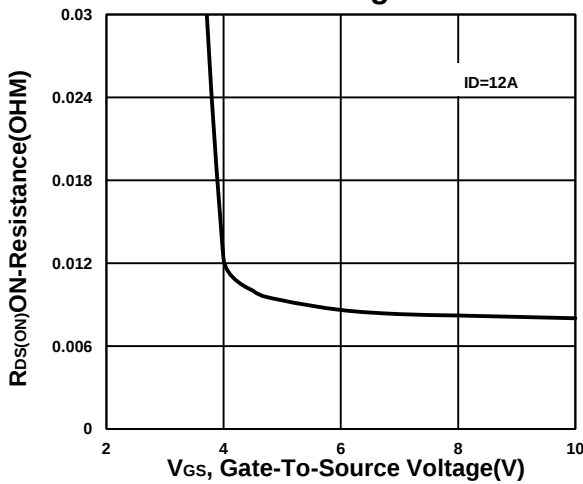
Output Characteristics



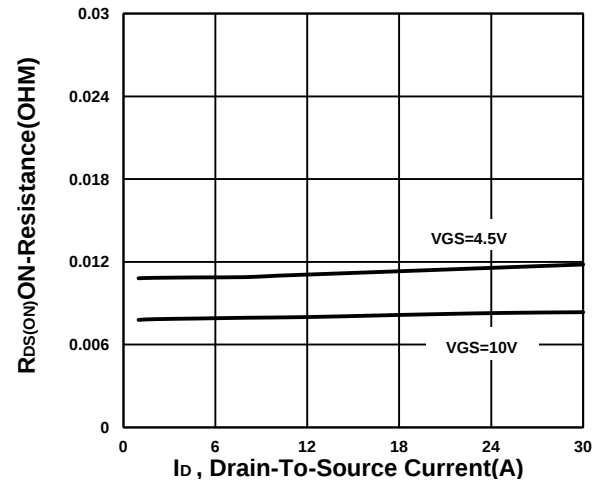
Transfer Characteristics



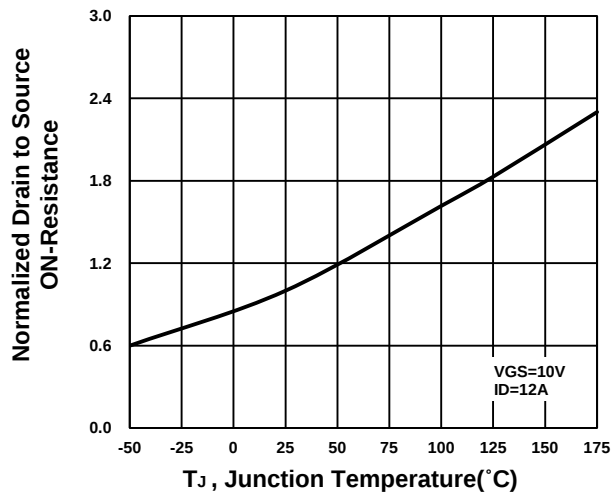
On-Resistance VS Gate-To-Source Voltage



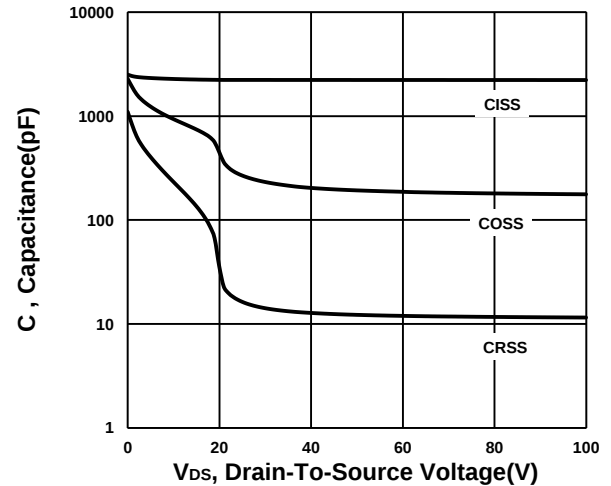
On-Resistance VS Drain Current



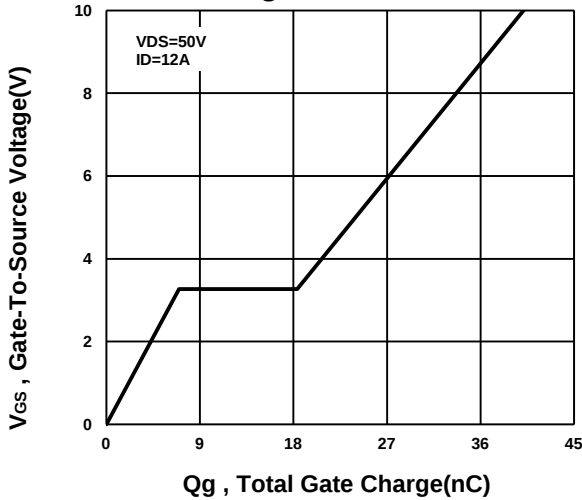
On-Resistance VS Temperature



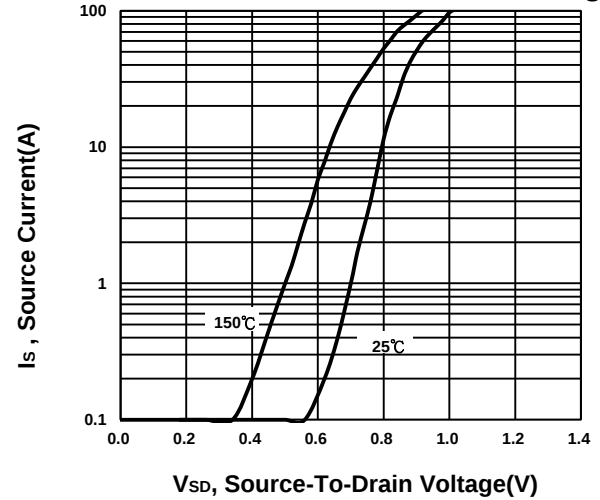
Capacitance Characteristic



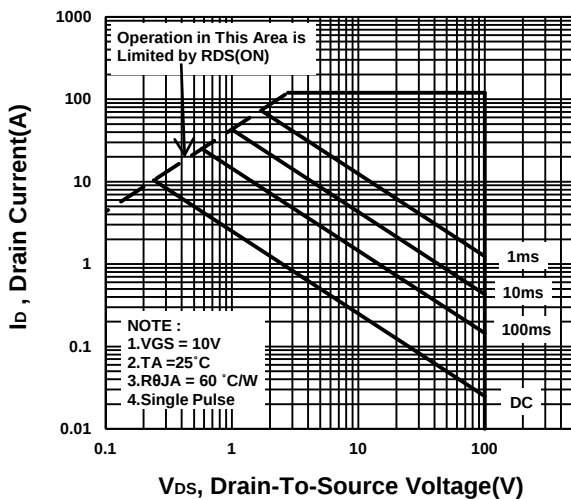
Gate charge Characteristics



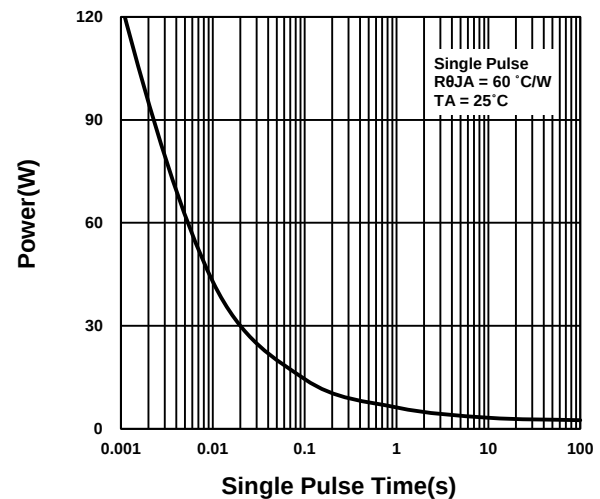
Source-Drain Diode Forward Voltage



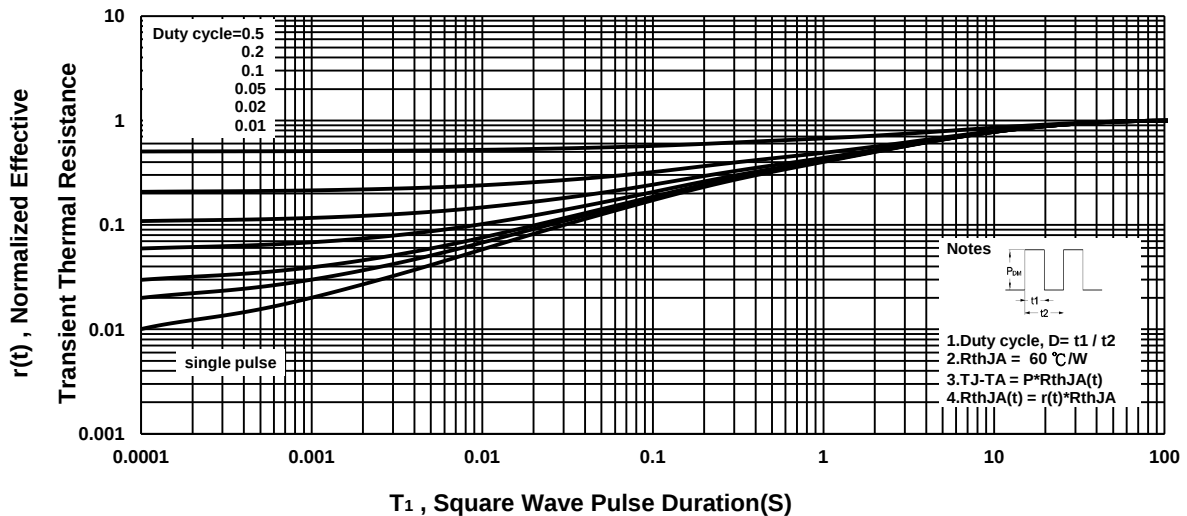
Safe Operating Area



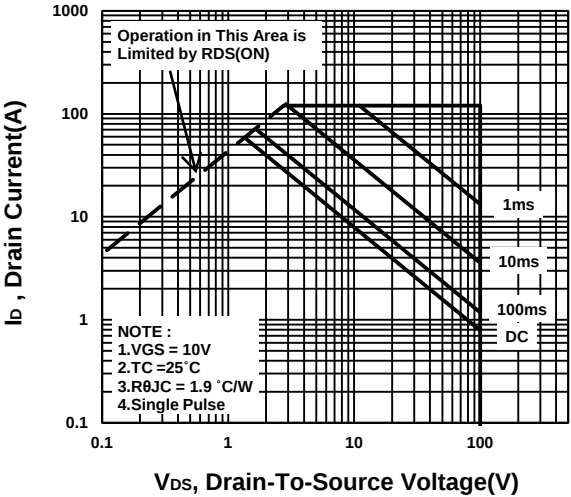
Single Pulse Maximum Power Dissipation



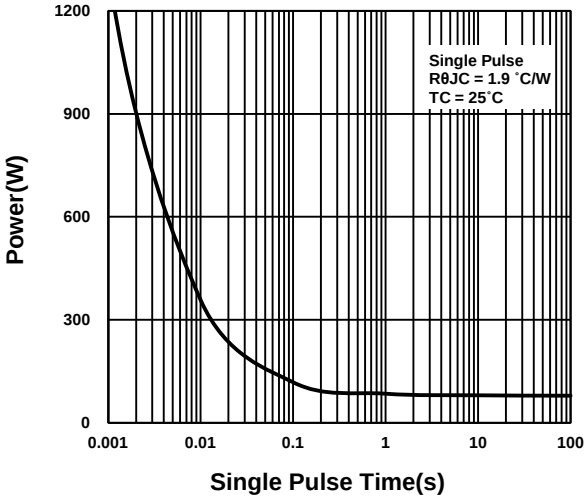
Transient Thermal Response Curve



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

