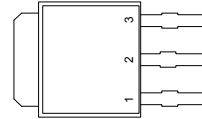
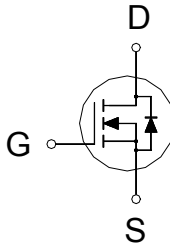




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
60V	65m Ω	18A



1. GATE
2. DRAIN
3. SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$ 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	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	18	A
	$T_C = 100\text{ }^{\circ}\text{C}$		11.8	
Pulsed Drain Current ¹		I_{DM}	34	
Avalanche Current		I_{AS}	18	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	16	mJ
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	50	W
	$T_C = 100\text{ }^{\circ}\text{C}$		20	
Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^{\circ}\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		2.5	$^{\circ}\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

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

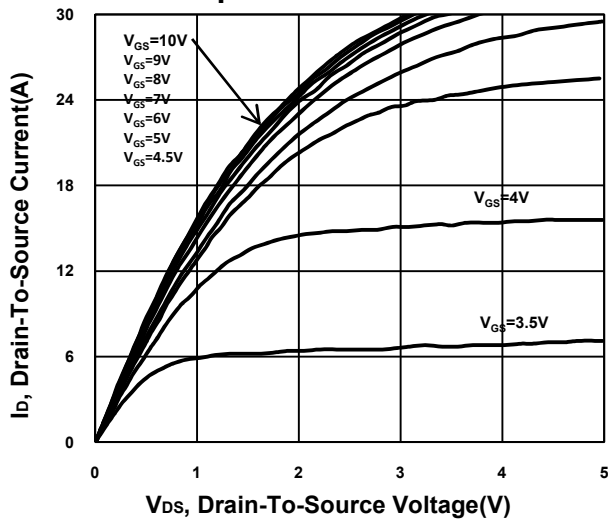
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.6	2.5	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 48V, V_{GS} = 0V$			1	μA
		$V_{DS} = 40V, V_{GS} = 0V, T_J = 125\text{ }^{\circ}C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 5V, I_D = 8A$		63	80	mΩ
		$V_{GS} = 10V, I_D = 12A$		53	65	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 15V, I_D = 12A$		22		S

DYNAMIC							
Input Capacitance	C _{iss}		V _{GS} = 0V, V _{DS} = 15V, f = 1MHz		601		pF
Output Capacitance	C _{oss}				48		
Reverse Transfer Capacitance	C _{rss}				33		
Gate Resistance	R _g		V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		2.2		Ω
Total Gate Charge ²	Q _g	V _{GS} = 10V	V _{DS} = 0.5V _{(BR)DSS} , I _D = 12A		13		nC
		V _{GS} = 5V			7.6		
Gate-Source Charge ²	Q _{gs}				4.5		
Gate-Drain Charge ²	Q _{gd}				2.4		
Turn-On Delay Time ²	t _{d(on)}			V _{DS} = 30V , I _D ≅ 12A, V _{GS} = 10V, R _{GEN} =6Ω		8.3	
Rise Time ²	t _r				37		
Turn-Off Delay Time ²	t _{d(off)}				44		
Fall Time ²	t _f				53		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _J = 25 °C)							
Continuous Current	I _S					18	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		23		nS
Reverse Recovery Charge	Q _{rr}				19		nC

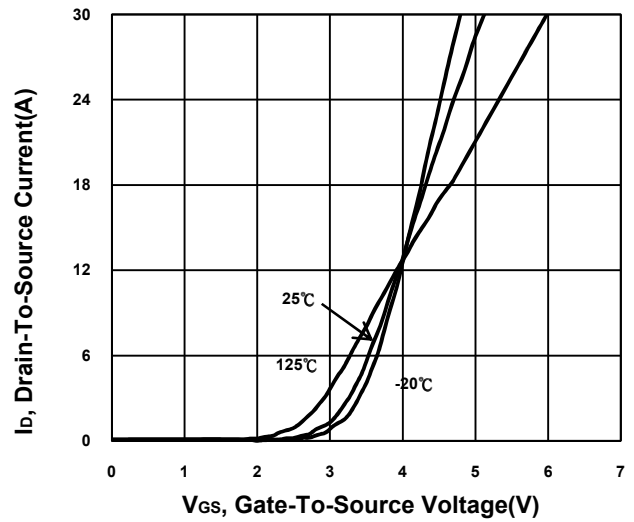
¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

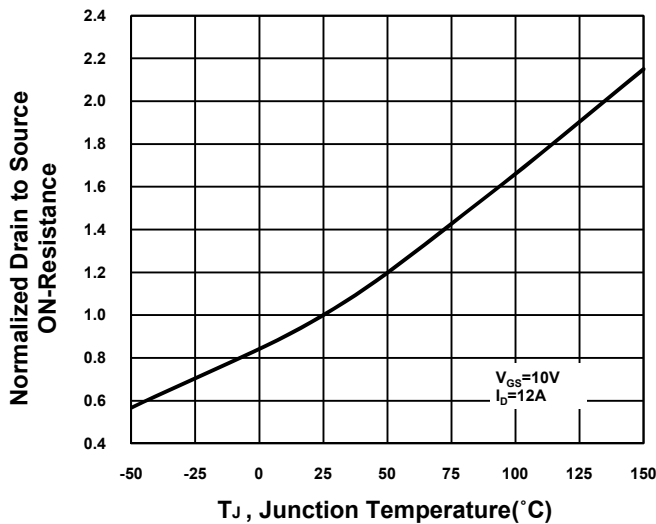
Output Characteristics



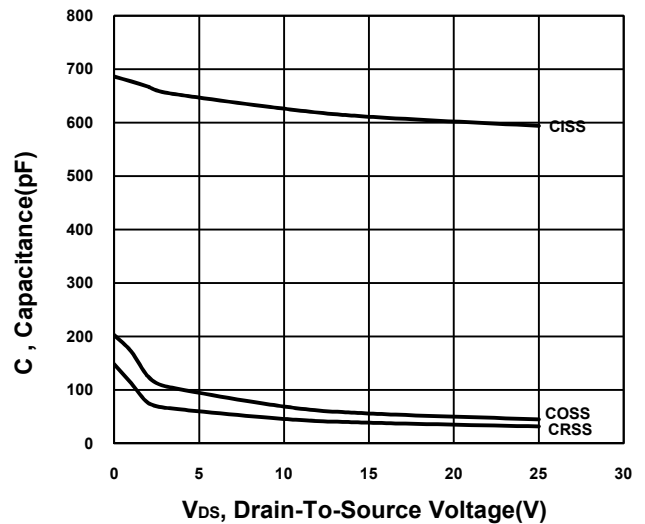
Transfer Characteristics



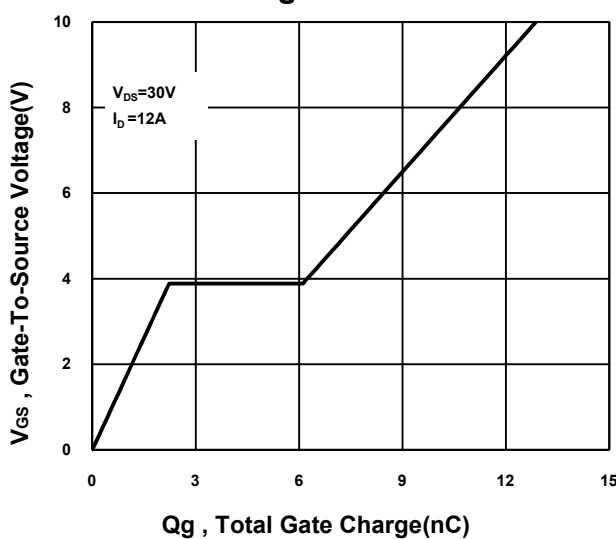
On-Resistance VS Temperature



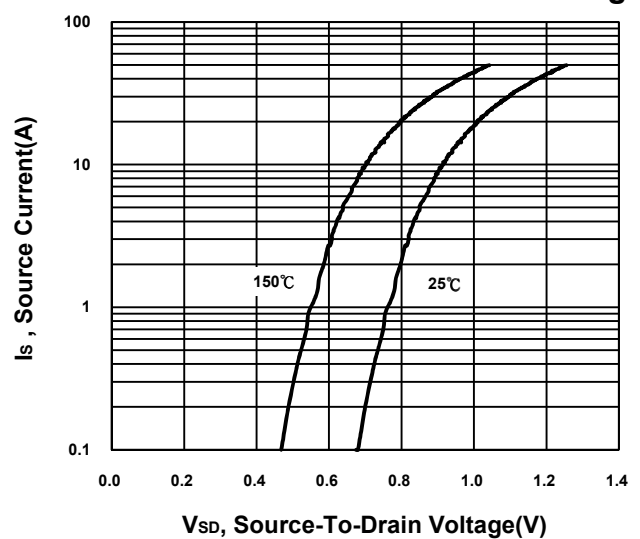
Capacitance Characteristic



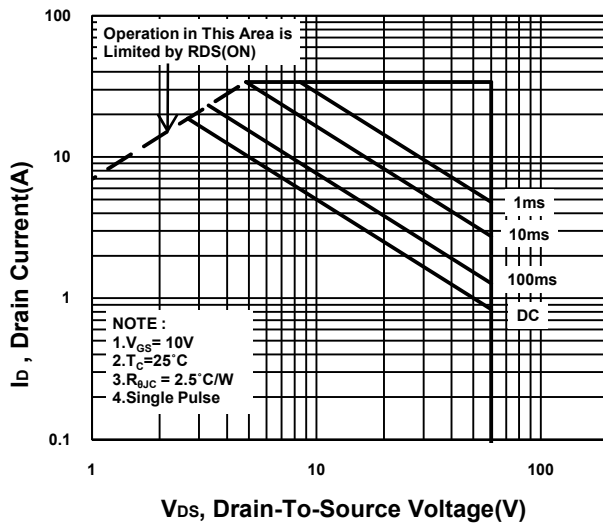
Gate charge Characteristics



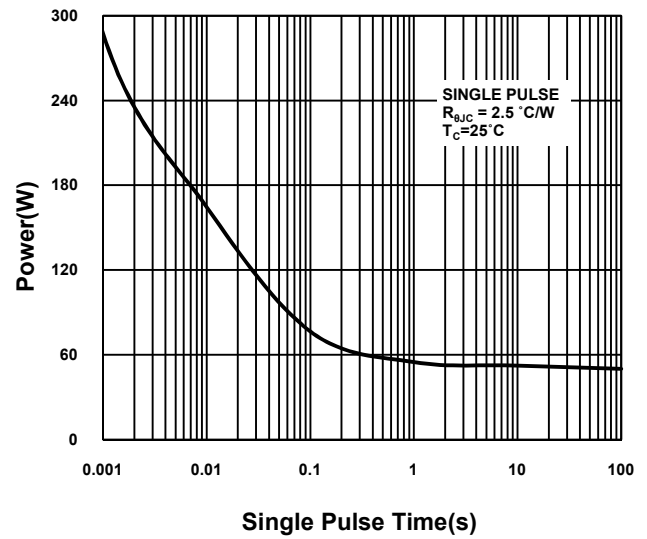
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

