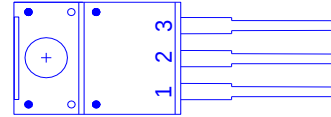
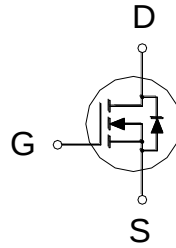


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
60V	10m Ω	47A



1: GATE
2: DRAIN
3: SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ 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	$T_C = 25^\circ\text{C}$	I_D	47	A
	$T_C = 100^\circ\text{C}$		29	
Pulsed Drain Current ¹		I_{DM}	150	
Avalanche Current		I_{AS}	38	
Avalanche Energy		E_{AS}	72.7	mJ
Power Dissipation	$T_C = 25^\circ\text{C}$	P_D	48	W
	$T_C = 100^\circ\text{C}$		19	
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-Ambient	$R_{\theta JA}$		62.5	$^\circ\text{C} / \text{W}$
Junction-to-Case	$R_{\theta JC}$		2.6	

¹Pulse width limited by maximum junction temperature.

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

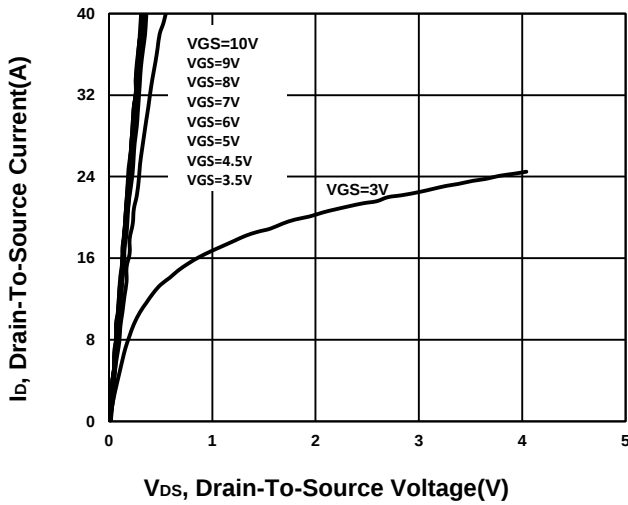
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.3	1.8	2.3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 48V, V_{GS} = 0V$			1	μA
		$V_{DS} = 40V, V_{GS} = 0V, T_J = 125^\circ C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 20A$		8.2	13	$m\Omega$
		$V_{GS} = 10V, I_D = 20A$		7	10	

Forward Transconductance ¹	g_{fs}	$V_{DS} = 10V, I_D = 20A$		60		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		1836		pF
Output Capacitance	C_{oss}			224		
Reverse Transfer Capacitance	C_{rss}			136		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		0.7		Ω
Total Gate Charge ²	$Q_{g(VGS=10V)}$	$V_{DS} = 30V, I_D = 20A$		41		nC
	$Q_{g(VGS=4.5V)}$			22		
Gate-Source Charge ²	Q_{gs}			5.5		
Gate-Drain Charge ²	Q_{gd}			11.6		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 30V, I_D \cong 20A,$ $V_{GS} = 10V, R_{GEN} = 6\Omega$		31		nS
Rise Time ²	t_r			32		
Turn-Off Delay Time ²	$t_{d(off)}$			52		
Fall Time ²	t_f			34		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)						
Continuous Current	I_S				47	A
Forward Voltage ¹	V_{SD}	$I_F = 20A, V_{GS} = 0V$			1.3	V
Diode Reverse Recovery Time	t_{rr}	$I_F = 20A, di/dt = 100A/\mu s$		34		nS
Diode Reverse Recovery Charge	Q_{rr}			36		uC

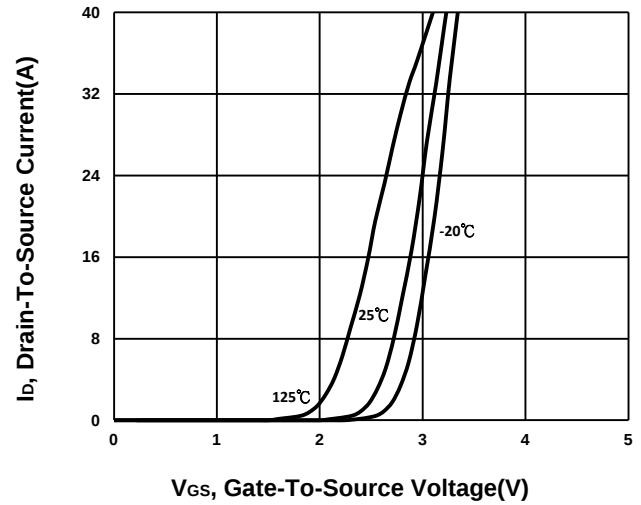
¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

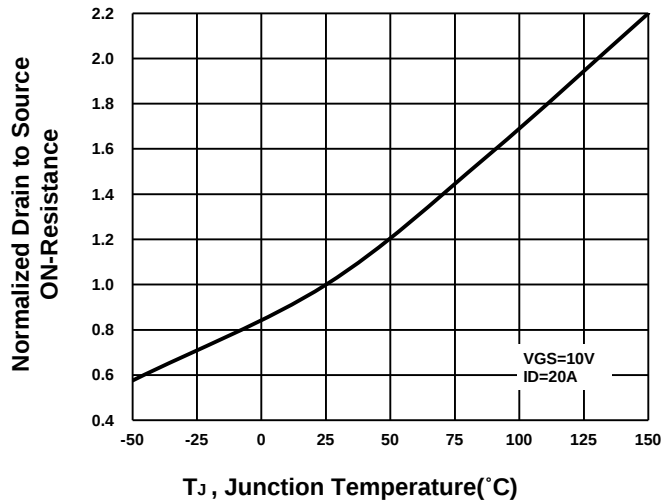
Output Characteristics



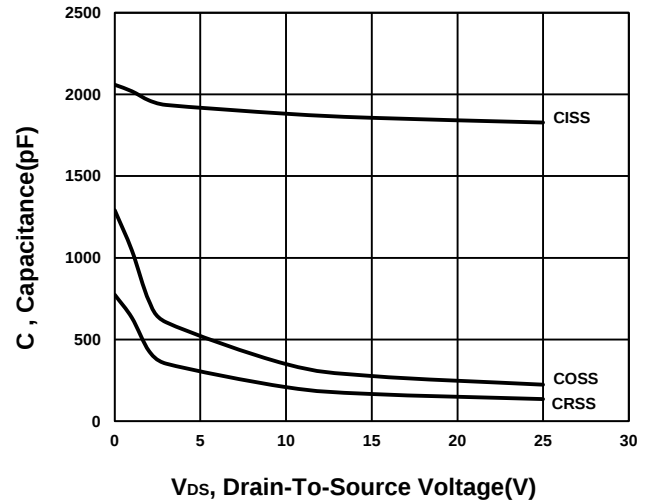
Transfer Characteristics



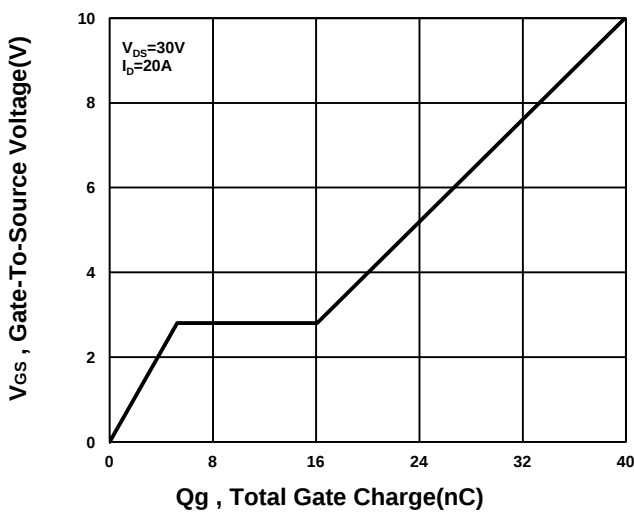
On-Resistance VS Temperature



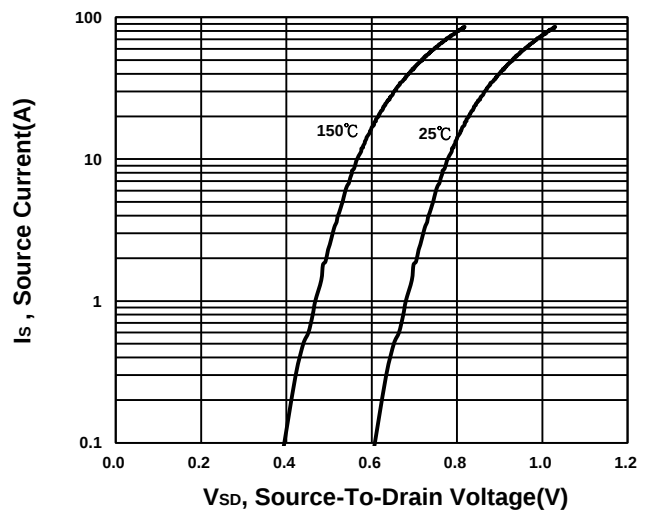
Capacitance Characteristic



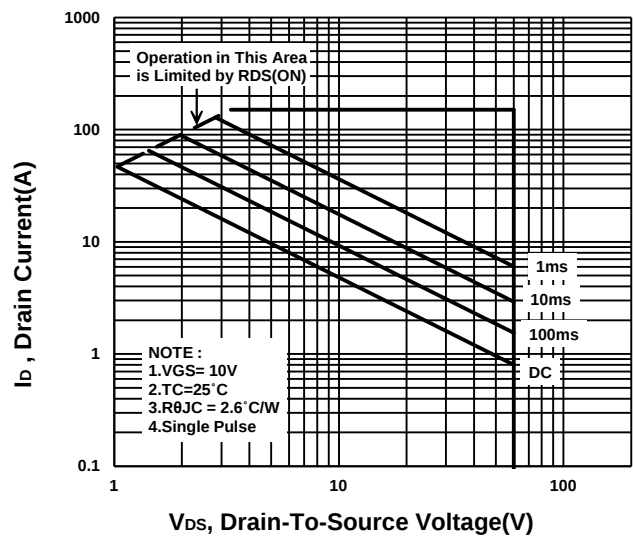
Gate charge Characteristics



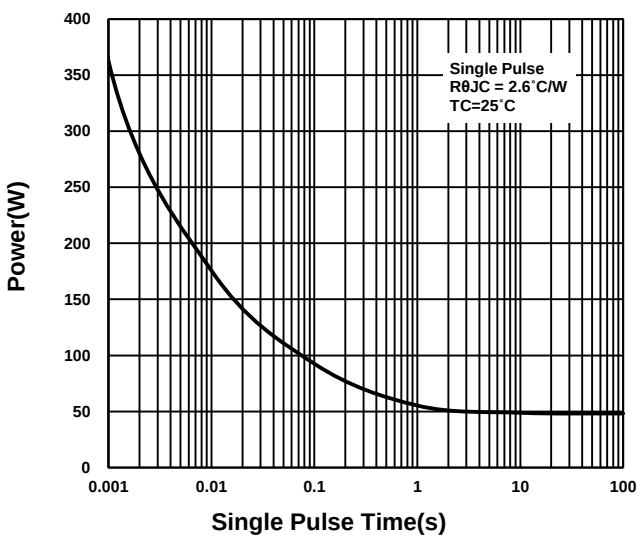
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

