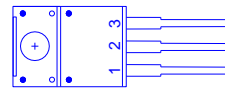
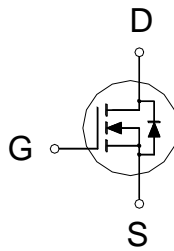




**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
100V	10.7mΩ	48A



1. GATE
2. DRAIN
3. 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		$V_{GS}$	±25	V
Continuous Drain Current	$T_C = 25\text{ ° C}$	$I_D$	48	A
	$T_C = 100\text{ ° C}$		34	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	135	
Avalanche Current		$I_{AS}$	24	
Avalanche Energy	$L = 1\text{mH}$	$E_{AS}$	288	mJ
Power Dissipation	$T_C = 25\text{ ° C}$	$P_D$	60	W
	$T_C = 100\text{ ° C}$		30	
Operating Junction & Storage Temperature Range		$T_j, T_{stg}$	-55 to 175	° C

**THERMAL RESISTANCE RATINGS**

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		2.5	° C / W
Junction-to-Ambient	$R_{\theta JA}$		50	

<sup>1</sup>Pulse width limited by maximum junction temperature.

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

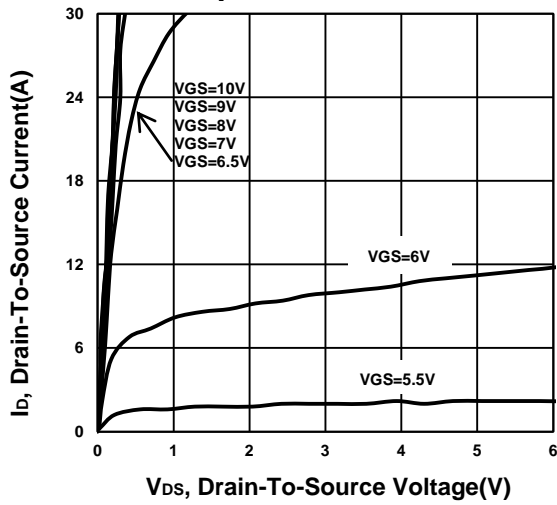
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.5	3.5	4.5	V
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 25V$			±100	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 80V, V_{GS} = 0V$			1	μA
		$V_{DS} = 80V, V_{GS} = 0V, T_J = 125\text{ ° C}$			10	

Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 20A$	8.4	10.7	mΩ
		$V_{GS} = 7V, I_D = 20A$	10.2	13.8	
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 5V, I_D = 20A$	29		S
<b>DYNAMIC</b>					
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$	4837		pF
Output Capacitance	$C_{oss}$		384		
Reverse Transfer Capacitance	$C_{rss}$		286		
Gate Resistance	$R_g$	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$	0.8		Ω
Total Gate Charge <sup>2</sup>	$Q_g$	$V_{DS} = 50V, I_D = 20A$	$V_{GS} = 10V$	103	nC
			$V_{GS} = 7V$	77	
Gate-Source Charge <sup>2</sup>	$Q_{gs}$		30		
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$		42		
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$		43	nS	
Rise Time <sup>2</sup>	$t_r$		107		
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$		79		
Fall Time <sup>2</sup>	$t_f$		63		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (<math>T_J = 25\text{ °C}</math>)</b>					
Continuous Current	$I_S$			48	A
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = 20A, V_{GS} = 0V$		1.2	V
Reverse Recovery Time	$t_{rr}$	$I_F = 20A, di_F/dt = 100A/\mu s$		46	nS
Reverse Recovery Charge	$Q_{rr}$			68	nC

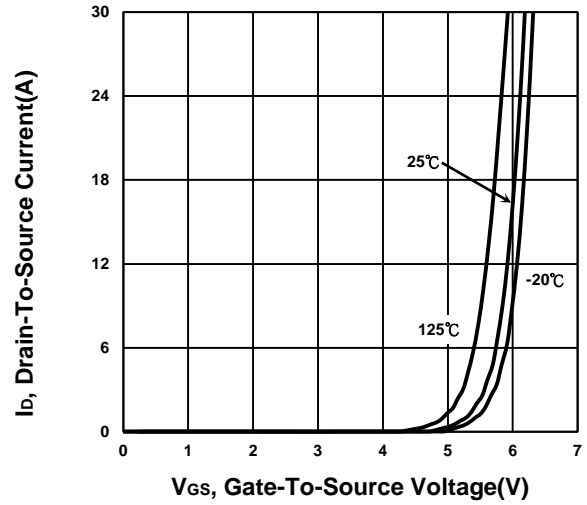
<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

<sup>2</sup>Independent of operating temperature.

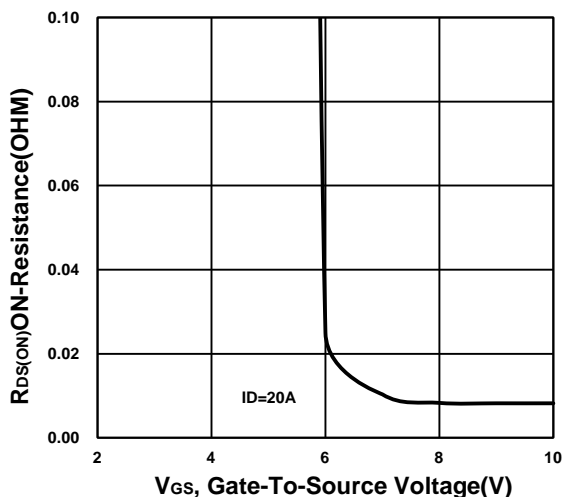
**Output Characteristics**



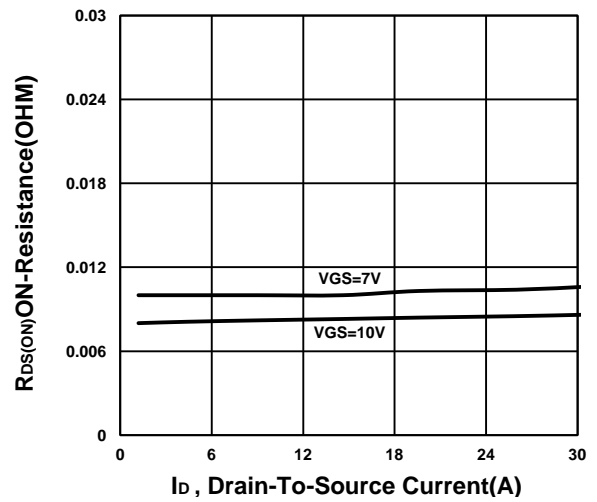
**Transfer Characteristics**



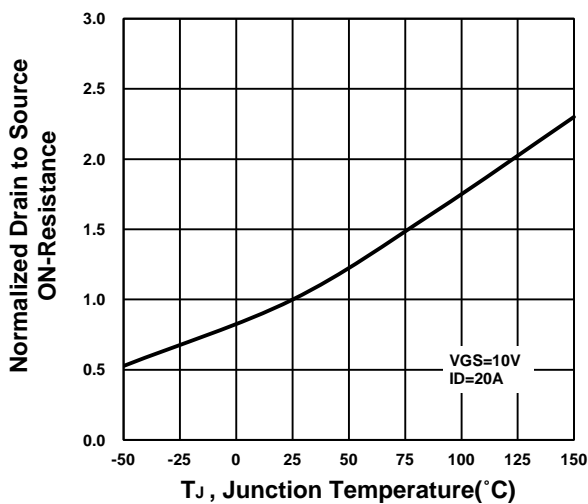
**On-Resistance VS Gate-To-Source**



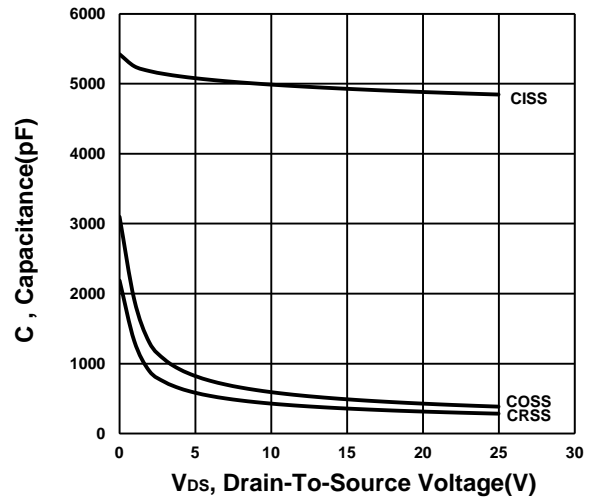
**On-Resistance VS Drain Current**



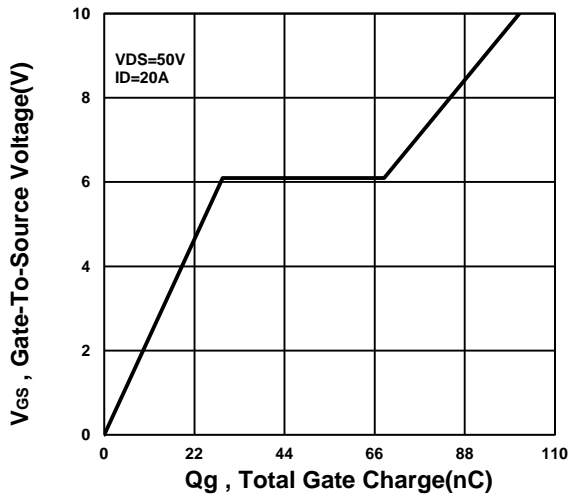
**On-Resistance VS Temperature**



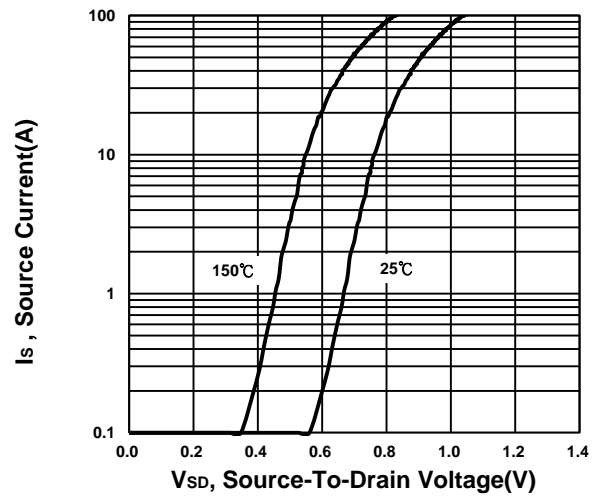
**Capacitance Characteristic**



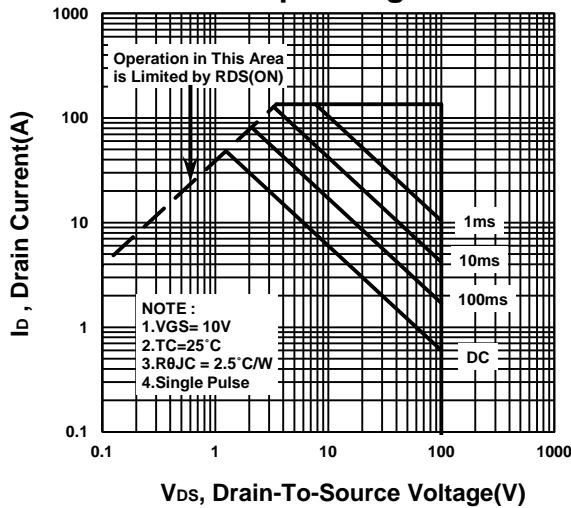
**Gate charge Characteristics**



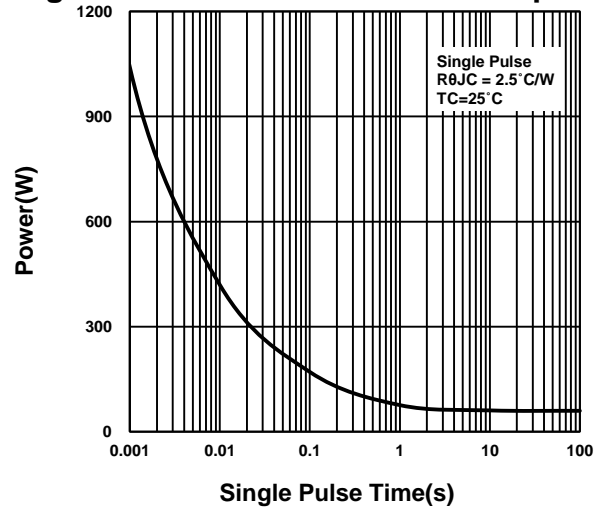
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

