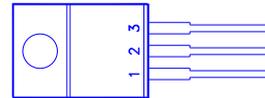
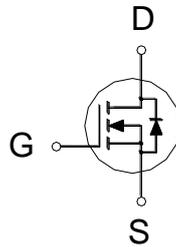




- 1. GATE
- 2. DRAIN
- 3. SOURCE

**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
100V	10.5mΩ	69A



**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	$T_C = 25\text{ °C}$	$I_D$	69	A
	$T_C = 100\text{ °C}$		49	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	211	
Avalanche Current		$I_{AS}$	12.5	
Avalanche Energy	L = 1mH	$E_{AS}$	78.1	mJ
Power Dissipation	$T_C = 25\text{ °C}$	$P_D$	115	W
	$T_C = 100\text{ °C}$		58	
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	$R_{\theta JC}$		1.3	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

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

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

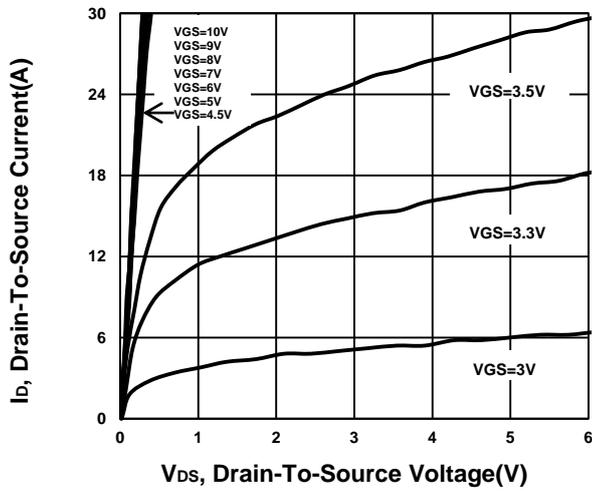
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.4	2	3	V
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 20V$			±100	nA

Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 100V, V_{GS} = 0V$			1	$\mu A$	
		$V_{DS} = 100V, V_{GS} = 0V, T_J = 125^\circ C$			100		
Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 10A$		11	15	$m\Omega$	
		$V_{GS} = 10V, I_D = 12A$		8.5	10.5		
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 5V, I_D = 12A$		48		S	
<b>DYNAMIC</b>							
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = 50V, f = 1MHz$		2154		$pF$	
Output Capacitance	$C_{oss}$			201			
Reverse Transfer Capacitance	$C_{rss}$			13			
Gate Resistance	$R_g$	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		1.7		$\Omega$	
Total Gate Charge <sup>2</sup>	$Q_g$	$V_{GS} = 10V$	$V_{DS} = 50V, I_D = 12A$		39	$nC$	
		$V_{GS} = 4.5V$			23		
Gate-Source Charge <sup>2</sup>	$Q_{gs}$			6.9			
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$			11			
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$	$V_{DD} = 50V,$ $I_D \cong 12A, V_{GS} = 10V, R_{GEN} = 6\Omega$			12		$nS$
Rise Time <sup>2</sup>	$t_r$				28		
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$			49			
Fall Time <sup>2</sup>	$t_f$			48			
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (<math>T_J = 25^\circ C</math>)</b>							
Continuous Current	$I_S$				69	A	
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = 12A, V_{GS} = 0V$			1.2	V	
Reverse Recovery Time	$t_{rr}$	$I_F = 12A, di_F/dt = 100A/\mu s$		30		nS	
Reverse Recovery Charge	$Q_{rr}$			32		nC	

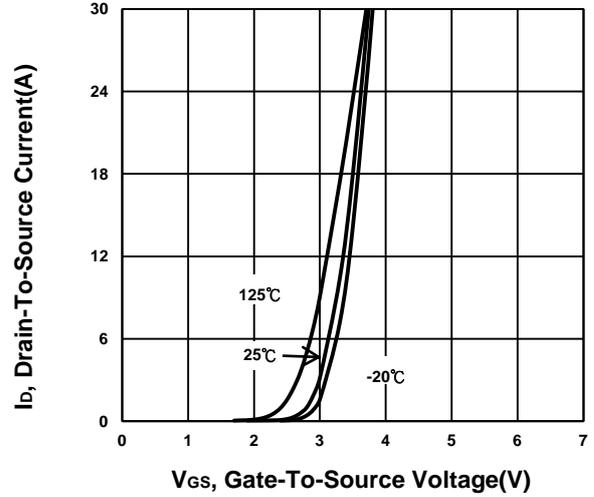
<sup>1</sup>Pulse test : Pulse Width  $\leq 300 \mu sec$ , Duty Cycle  $\leq 2\%$ .

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

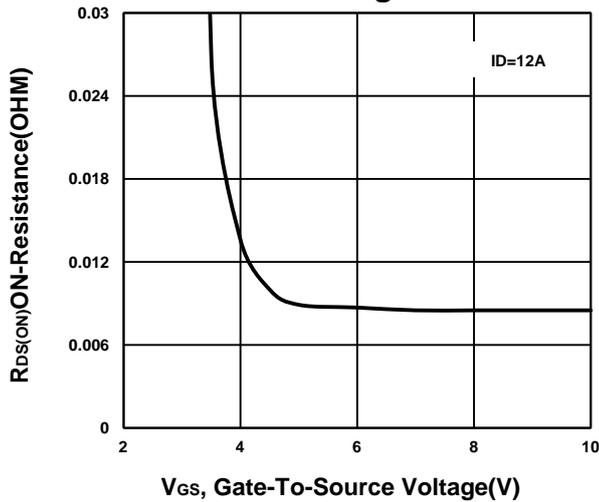
**Output Characteristics**



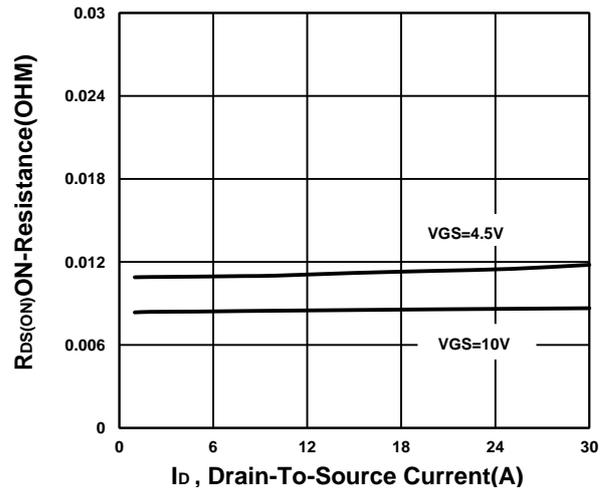
**Transfer Characteristics**



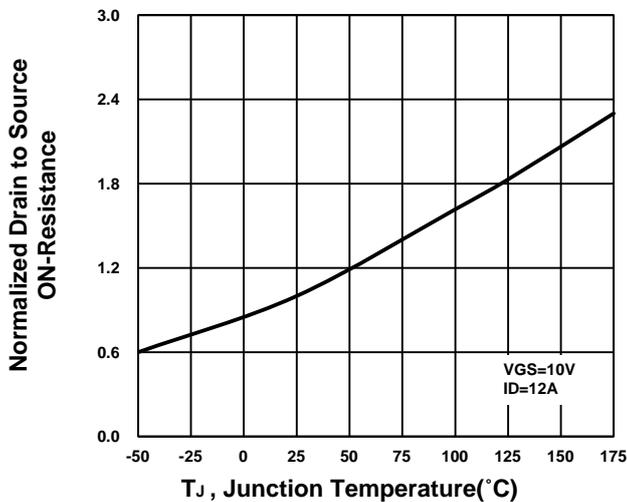
**On-Resistance VS Gate-To-Source Voltage**



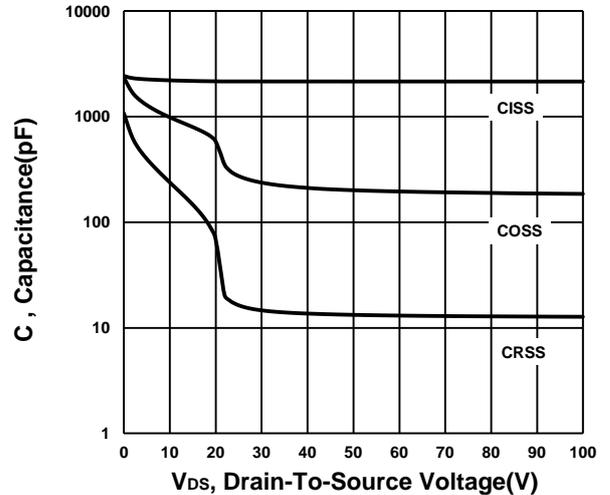
**On-Resistance VS Drain Current**



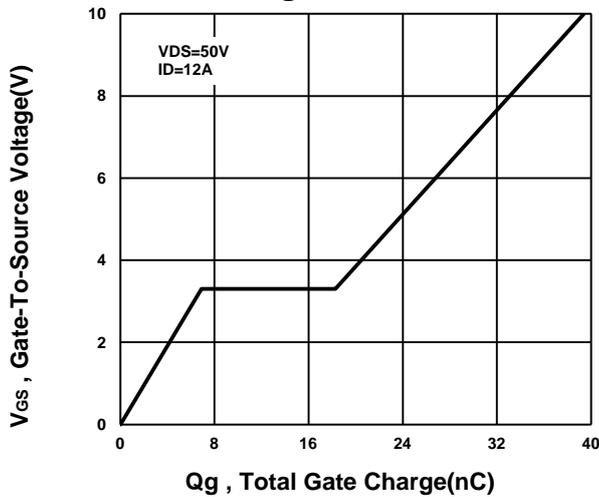
**On-Resistance VS Temperature**



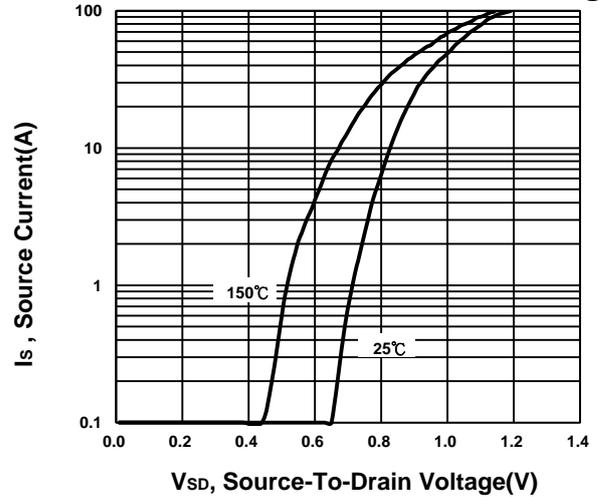
**Capacitance Characteristic**



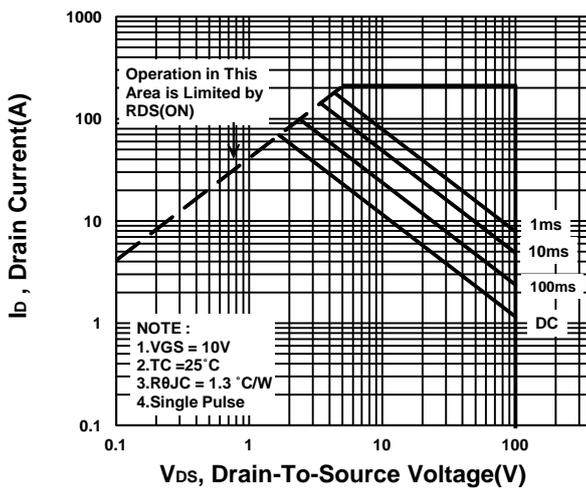
**Gate charge Characteristics**



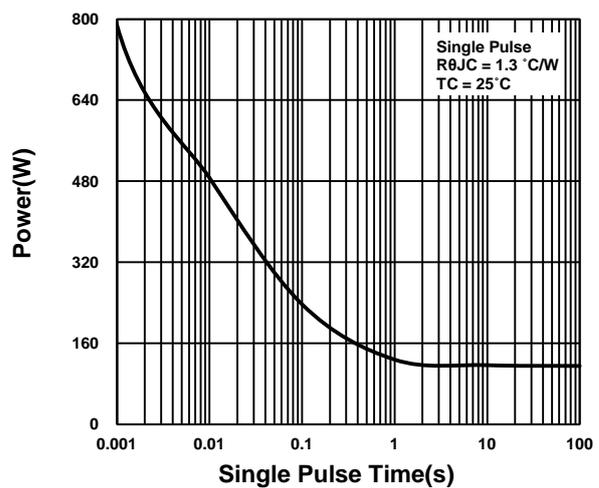
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

