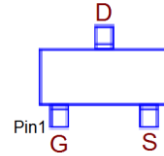
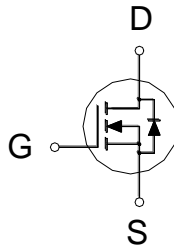




**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
60V	88mΩ	2A



G. GATE  
D. DRAIN  
S. SOURCE

**ABSOLUTE MAXIMUM RATINGS ( $T_A = 25\text{ °C}$  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	$T_C = 25\text{ °C}$	$I_D$	2	A
	$T_C = 70\text{ °C}$		1.6	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	11	
Power Dissipation	$T_A = 25\text{ °C}$	$P_D$	0.78	
	$T_A = 70\text{ °C}$		0.5	
Operating Junction & Storage Temperature Range		$T_j, T_{stg}$	-55 to 150	°C

**THERMAL RESISTANCE RATINGS**

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient <sup>2</sup>	$R_{\theta JA}$		159	°C / W
Junction-to-Case	$R_{\theta JC}$		57	

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

<sup>2</sup>The value of  $R_{\theta JA}$  is measured with the device mounted on 1in<sup>2</sup> FR-4 board with 2oz. Copper, in a still air environment with  $T_A = 25\text{ °C}$ .

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

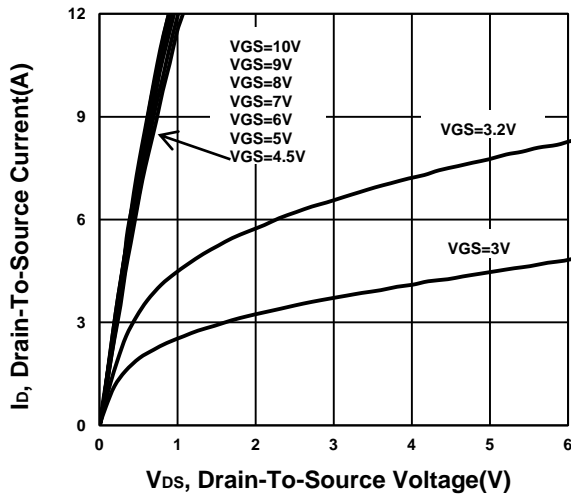
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.3	1.9	2.3	
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 20V$			±100	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 48V, V_{GS} = 0V$			1	μA
		$V_{DS} = 40V, V_{GS} = 0V, T_J = 55\text{ °C}$			10	

Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 2A$	71	108	$m\Omega$	
		$V_{GS} = 10V, I_D = 2A$	59	88		
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 5V, I_D = 2A$	10		S	
<b>DYNAMIC</b>						
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$	228	286	343	$pF$
Output Capacitance	$C_{oss}$		30	38	45.6	
Reverse Transfer Capacitance	$C_{rss}$		16	28	39	
Total Gate Charge <sup>2</sup>	$Q_g$	$V_{DS} = 30V, V_{GS} = 10V, I_D = 2A$	6.8	8.5	10.2	$nC$
Gate-Source Charge <sup>2</sup>	$Q_{gs}$		0.6	0.8	1	
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$		2	3.3	4.6	
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$	$V_{DS} = 30V, I_D \cong 2A, V_{GS} = 10V, R_{GEN} = 6\Omega$		8.3		$nS$
Rise Time <sup>2</sup>	$t_r$			10		
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$			20		
Fall Time <sup>2</sup>	$t_f$			4.5		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (<math>T_J = 25^\circ C</math>)</b>						
Continuous Current	$I_S$			0.6	A	
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = 2A, V_{GS} = 0V$		1.2	V	
Reverse Recovery Time	$t_{rr}$	$I_F = 2A, di_F/dt = 100A / \mu S$	9	18	27	$nS$
Reverse Recovery Charge	$Q_{rr}$		5	10	15	$nC$

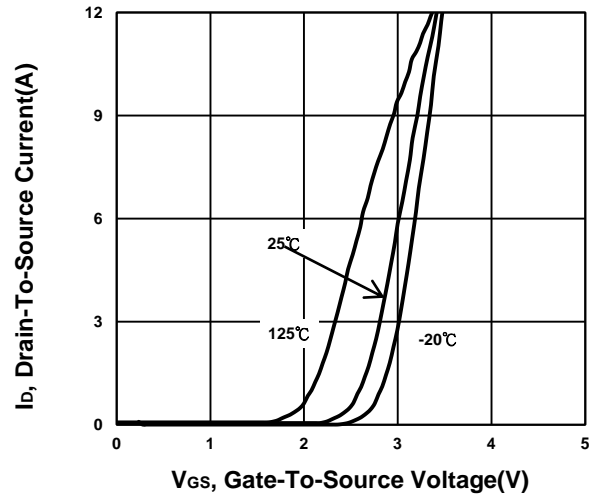
<sup>1</sup>Pulse test : Pulse Width  $\leq 300 \mu sec$ , Duty Cycle  $\leq 2\%$ .

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

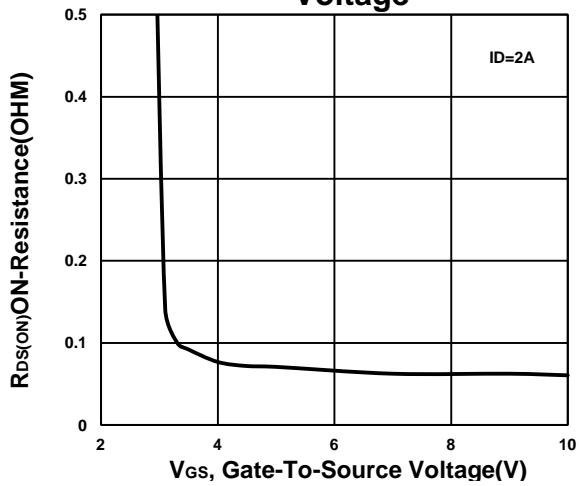
**Output Characteristics**



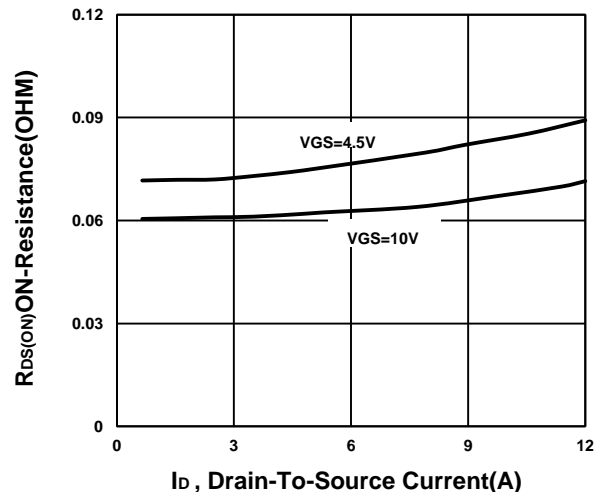
**Transfer Characteristics**



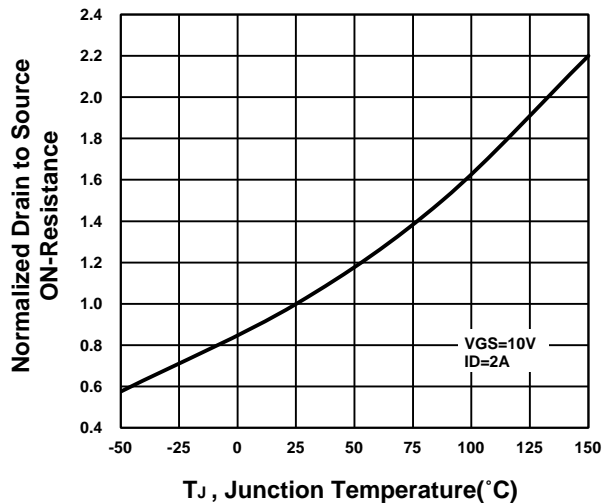
**On-Resistance VS Gate-To-Source Voltage**



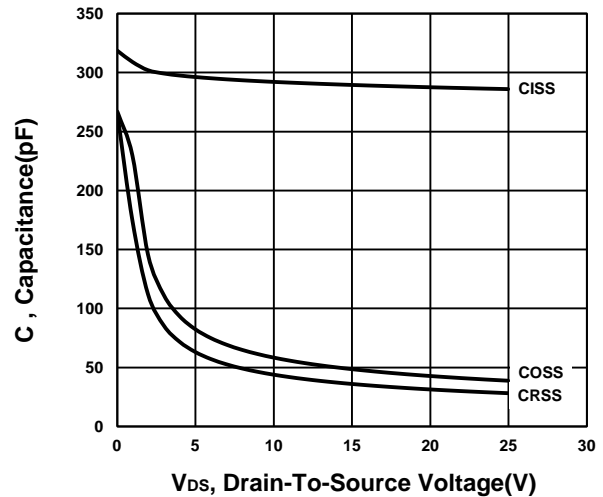
**On-Resistance VS Drain Current**



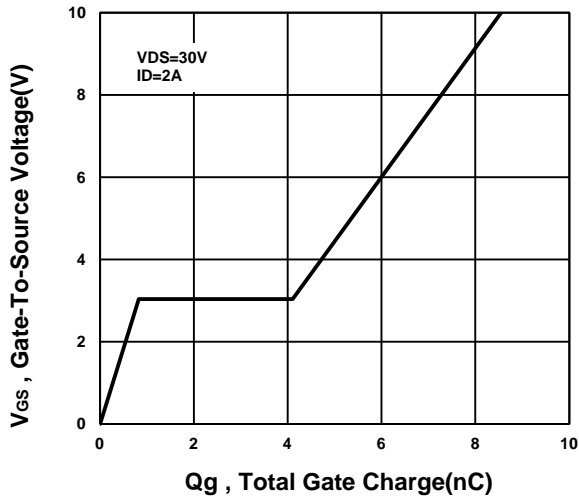
**On-Resistance VS Temperature**



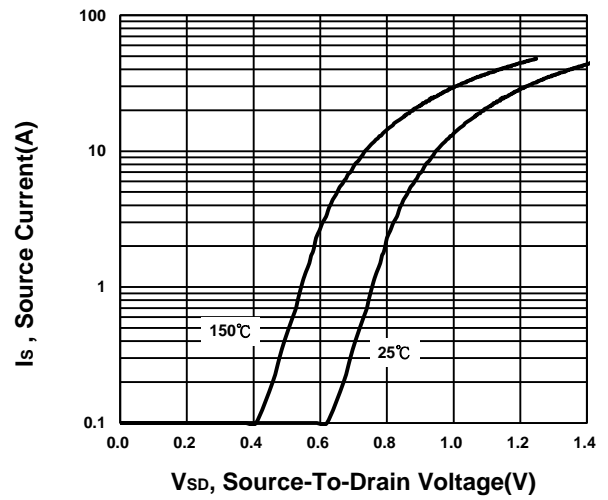
**Capacitance Characteristic**



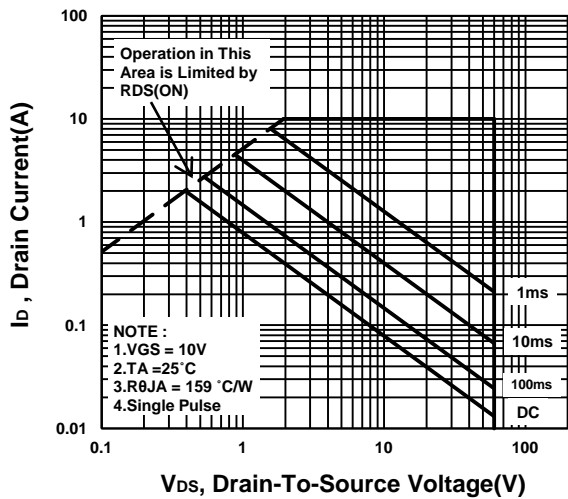
**Gate charge Characteristics**



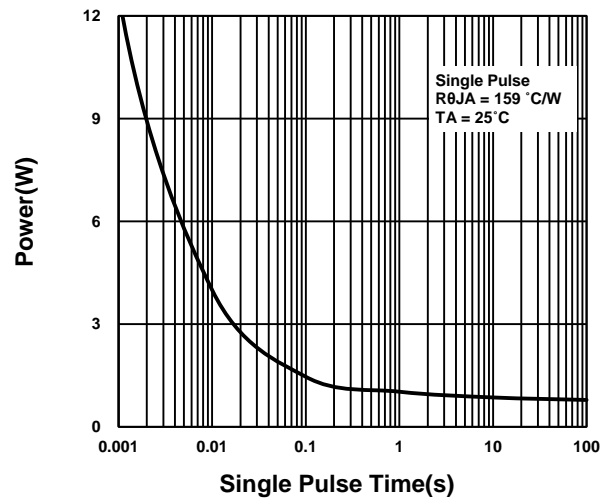
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

