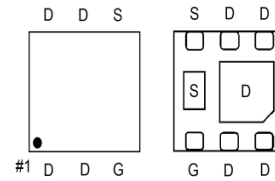
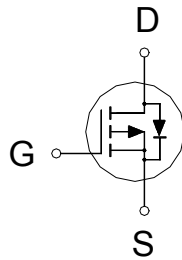


**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
-20V	21mΩ	-8A



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		$V_{DS}$	-20	V
Gate-Source Voltage		$V_{GS}$	±10	V
Continuous Drain Current	$T_A = 25\text{ °C}$	$I_D$	-8	A
	$T_A = 70\text{ °C}$		-6.4	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	29	
Power Dissipation	$T_A = 25\text{ °C}$	$P_D$	2.1	W
	$T_A = 70\text{ °C}$		1.4	
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>	$R_{\theta JA}$		57	°C/W

<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. Coppe.

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

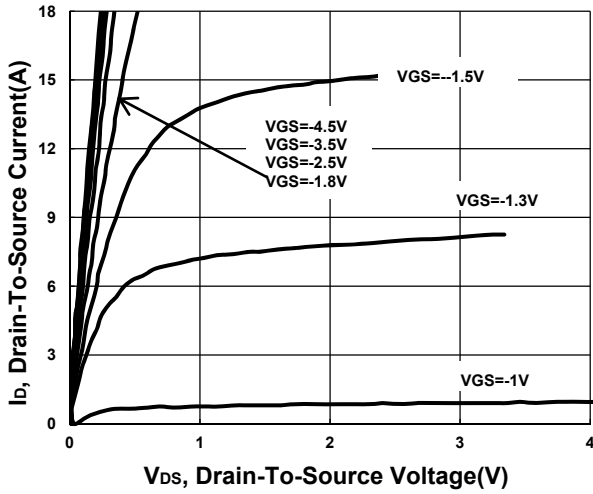
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.45	-0.6	-0.85	
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 10V$			±100	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -16V, V_{GS} = 0V$			-1	μA
		$V_{DS} = -10V, V_{GS} = 0V, T_j = 55\text{ °C}$			-10	
Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = -1.8V, I_D = -1A$		24	40	mΩ
		$V_{GS} = -2.5V, I_D = -2A$		19	28	
		$V_{GS} = -4.5V, I_D = -2.5A$		15	21	
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = -10V, I_D = -2.5A$		21		S

DYNAMIC					
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = -10V, f = 1MHz$		1727	pF
Output Capacitance	$C_{oss}$			179	
Reverse Transfer Capacitance	$C_{rss}$			155	
Gate Resistance	$R_g$	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		10	$\Omega$
Total Gate Charge <sup>2</sup>	$Q_g$	$V_{DS} = -10V, V_{GS} = -4.5V, I_D = -2.5A$		21	nC
Gate-Source Charge <sup>2</sup>	$Q_{gs}$			1.8	
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$			4.9	
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$	$V_{DD} = -10V, I_D \cong -2.5A, V_{GEN} = -4.5V, R_G = 6\Omega$		28	nS
Rise Time <sup>2</sup>	$t_r$			21	
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$			81	
Fall Time <sup>2</sup>	$t_f$			48	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ( $T_J = 25^\circ C$ )					
Continuous Current	$I_S$			-1.7	A
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = -2.5A, V_{GS} = 0V$		-1.2	V
Reverse Recovery Time	$t_{rr}$	$I_F = -2.5A, di_F/dt = 100A / \mu S$		35	nS
Reverse Recovery Charge	$Q_{rr}$			18	nC

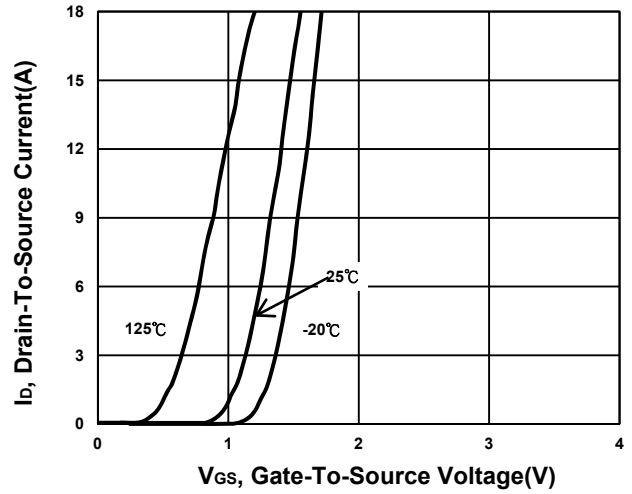
<sup>1</sup>Pulse test : Pulse Width  $\leq 300 \mu sec$ , Duty Cycle  $\leq 2\%$ .

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

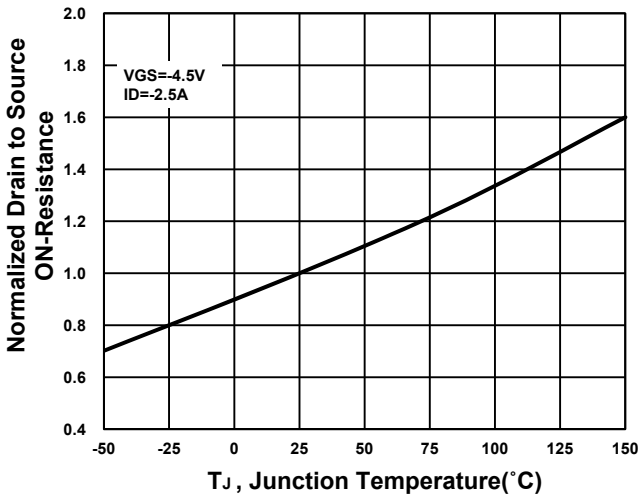
**Output Characteristics**



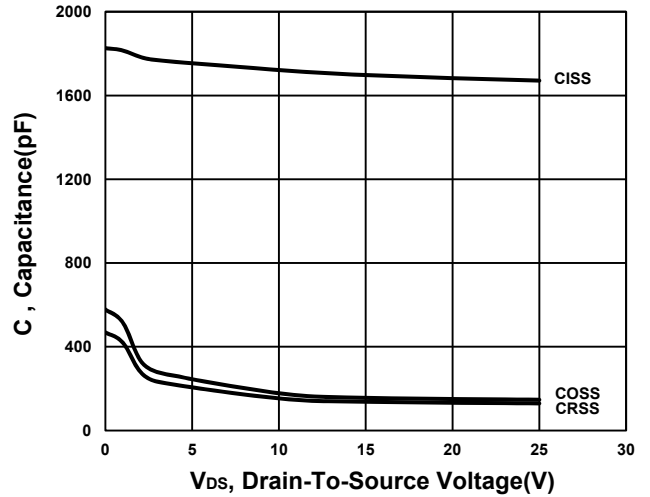
**Transfer Characteristics**



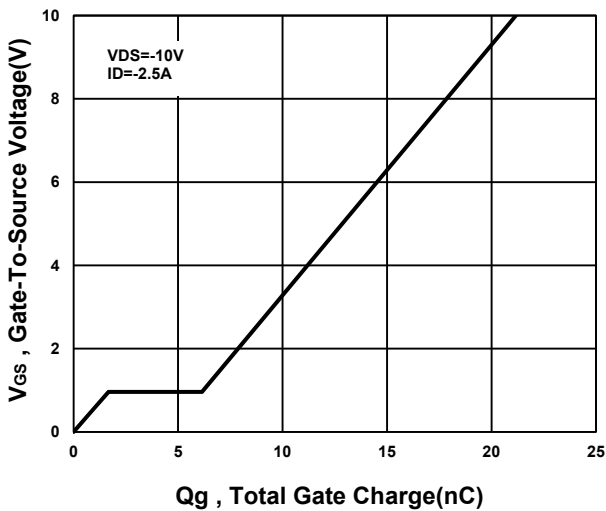
**On-Resistance VS Temperature**



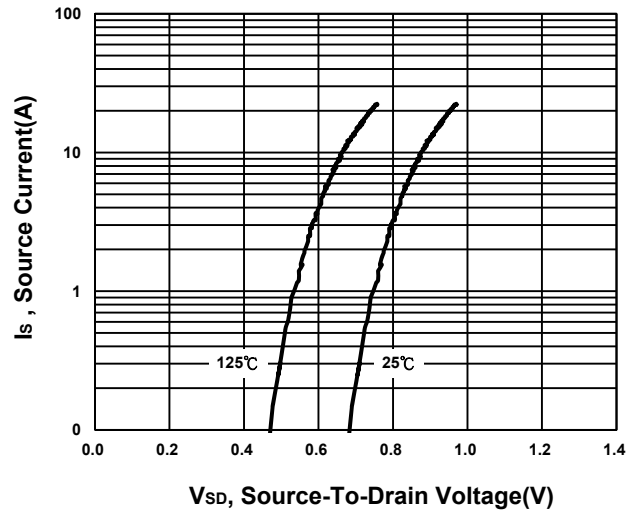
**Capacitance Characteristic**



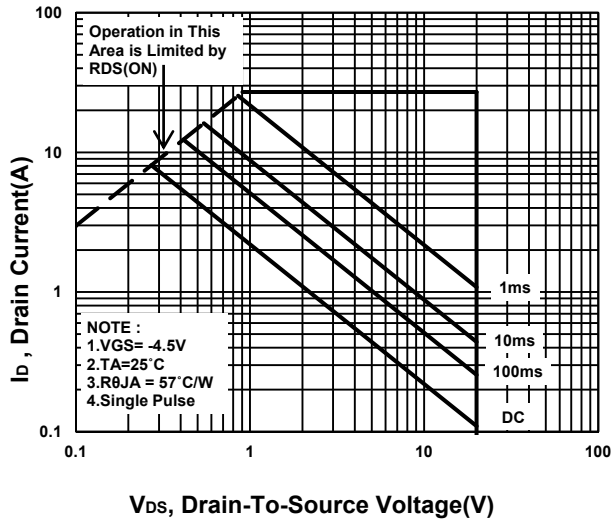
**Gate charge Characteristics**



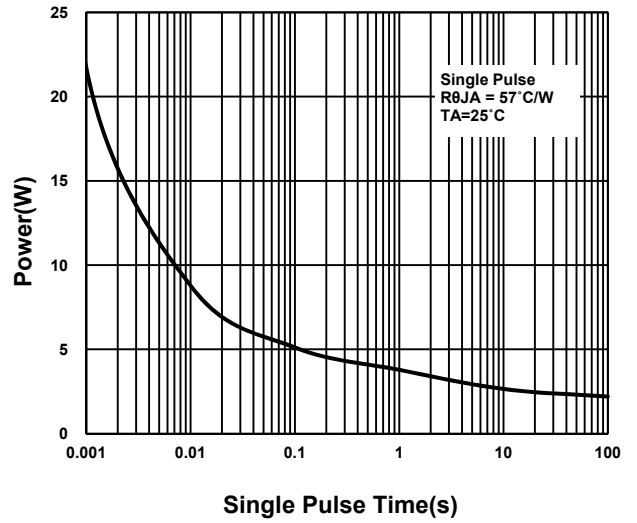
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

