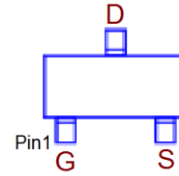
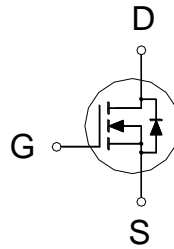




**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
20V	40m $\Omega$	3.3A



G. GATE  
D. DRAIN  
S. SOURCE

**ABSOLUTE MAXIMUM RATINGS ( $T_A = 25\text{ }^\circ\text{C}$  Unless Otherwise Noted)**

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		$V_{GS}$	$\pm 8$	V
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	$I_D$	3.3	A
	$T_A = 70\text{ }^\circ\text{C}$		2.7	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	12	
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	$P_D$	0.7	W
	$T_A = 70\text{ }^\circ\text{C}$		0.4	
Operating 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 <sup>2</sup>	$R_{\theta JA}$		170	$^\circ\text{C/W}$

<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. Copper, in a still air environment with  $T_A = 25\text{ }^\circ\text{C}$ .

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

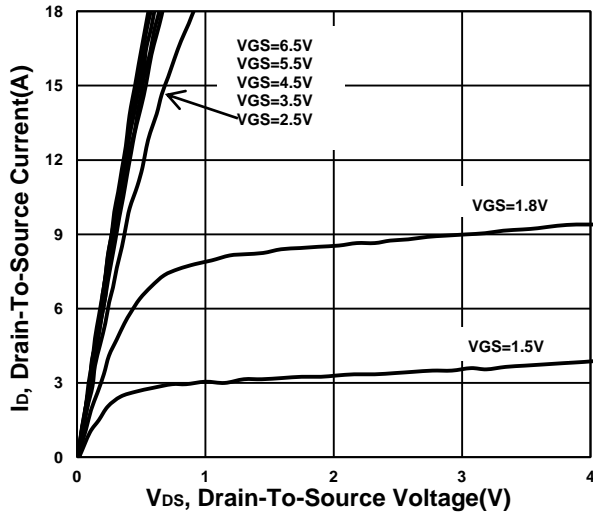
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5	0.7	1	
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 8V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 16V, V_{GS} = 0V$			1	$\mu A$
		$V_{DS} = 10V, V_{GS} = 0V, T_J = 55\text{ }^\circ\text{C}$			10	
Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = 1.8V, I_D = 2.5A$		55	80	m $\Omega$
		$V_{GS} = 2.5V, I_D = 2.8A$		36	50	
		$V_{GS} = 4.5V, I_D = 3A$		29	40	
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 5V, I_D = 3A$		16		S

DYNAMIC						
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = 10V, f = 1MHz$		331		pF
Output Capacitance	$C_{oss}$			56		
Reverse Transfer Capacitance	$C_{rss}$			44		
Total Gate Charge <sup>2</sup>	$Q_g$	$V_{DS} = 10V, V_{GS} = 4.5V,$ $I_D = 3A$		5		nC
Gate-Source Charge <sup>2</sup>	$Q_{gs}$			0.6		
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$			1.7		
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$	$V_{DD} = 10V,$ $I_D \cong 3A, V_{GEN} = 4.5V, R_G = 6\Omega$		30		nS
Rise Time <sup>2</sup>	$t_r$			30		
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$			90		
Fall Time <sup>2</sup>	$t_f$			31		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ( $T_J = 25\text{ }^\circ\text{C}$ )						
Continuous Current	$I_S$				0.7	A
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = 3A, V_{GS} = 0V$			1	V
Reverse Recovery Time	$t_{rr}$	$I_F = 3A, di_F/dt = 100A / \mu S$		10		nS
Reverse Recovery Charge	$Q_{rr}$				2	

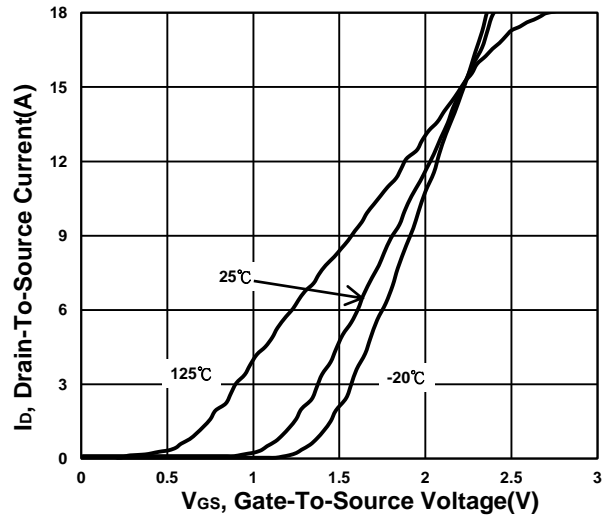
<sup>1</sup>Pulse test : Pulse Width  $\leq 300\ \mu\text{sec}$ , Duty Cycle  $\leq 2\%$ .

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

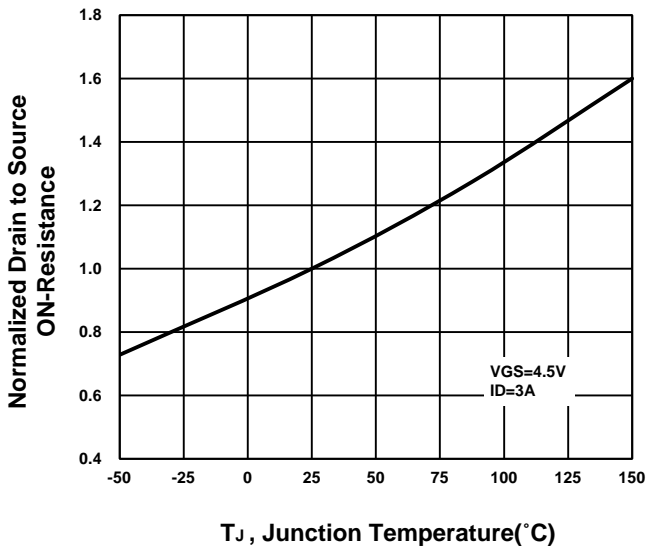
**Output Characteristics**



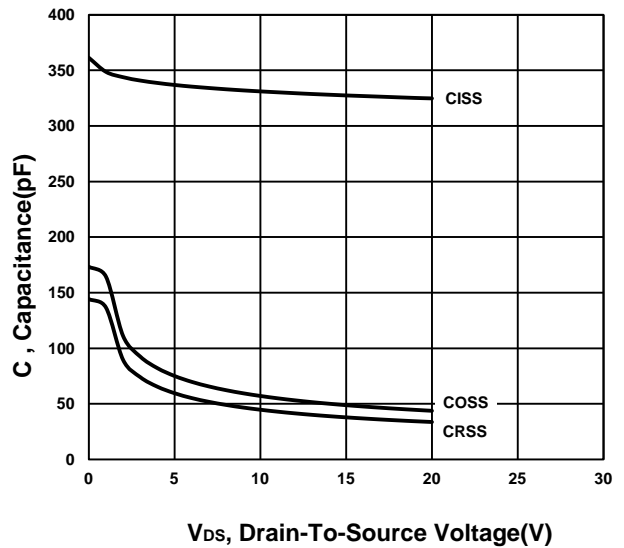
**Transfer Characteristics**



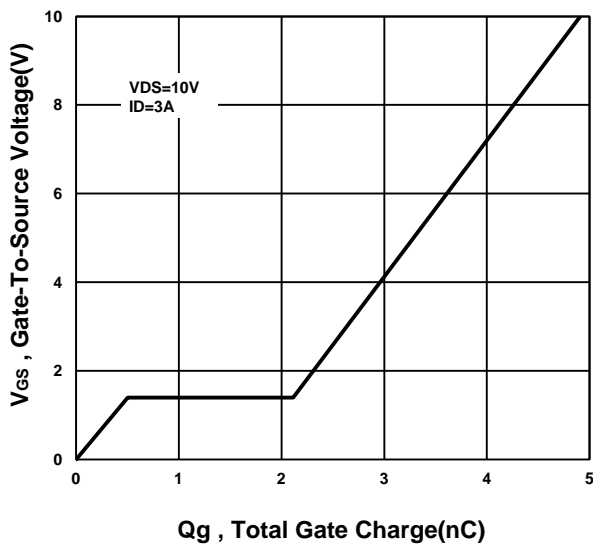
**On-Resistance VS Temperature**



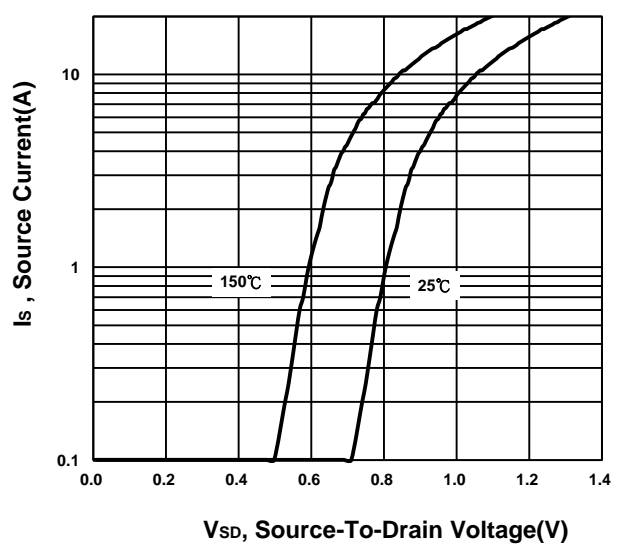
**Capacitance Characteristic**



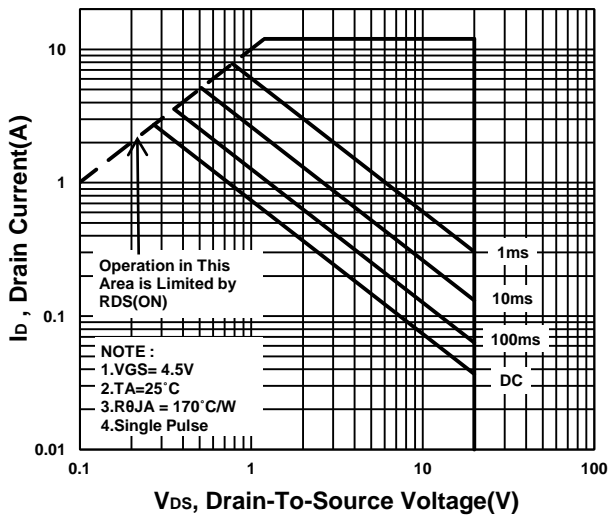
**Gate charge Characteristics**



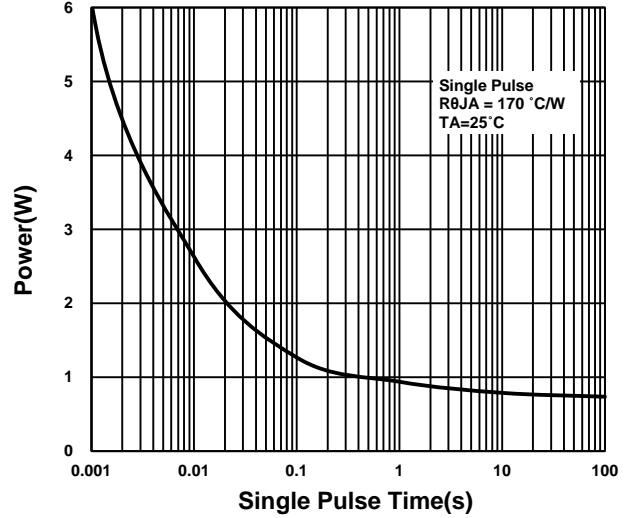
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

