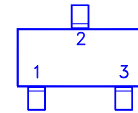
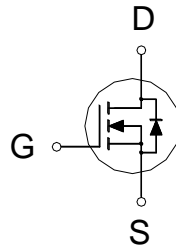




- 1. GATE
- 2. DRAIN
- 3. SOURCE

**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
20V	30mΩ	5A



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		$V_{GS}$	±8	V
Continuous Drain Current	$T_A = 25\text{ °C}$	$I_D$	5	A
	$T_A = 70\text{ °C}$		3.5	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	20	
Power Dissipation	$T_A = 25\text{ °C}$	$P_D$	0.9	W
	$T_A = 70\text{ °C}$		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	$R_{\theta JA}$		135	°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  $T_A = 25\text{ °C}$ .

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

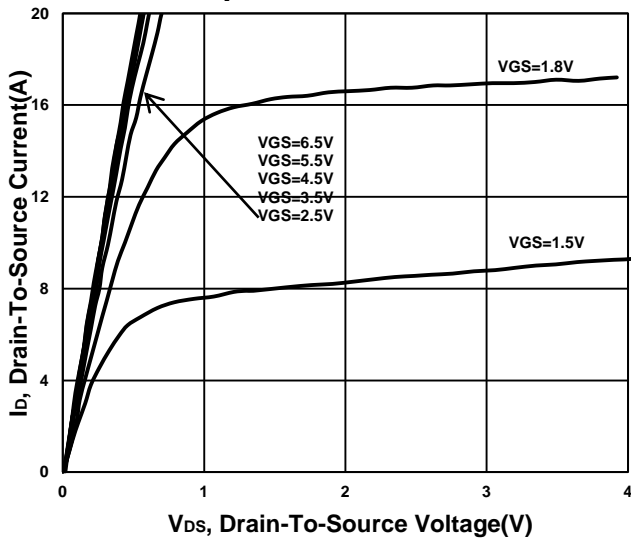
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5	0.6	1	
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 8V$			±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>	$R_{DS(ON)}$	$V_{GS} = 1.8V, I_D = 2A$		38	55	mΩ
		$V_{GS} = 2.5V, I_D = 4.5A$		30	38	
		$V_{GS} = 4.5V, I_D = 5A$		26	30	

Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 5V, I_D = 5A$		20		S
<b>DYNAMIC</b>						
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = 10V, f = 1MHz$		582		pF
Output Capacitance	$C_{oss}$			71		
Reverse Transfer Capacitance	$C_{rss}$			61		
Total Gate Charge <sup>2</sup>	$Q_g$	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 5A$		9.1		nC
Gate-Source Charge <sup>2</sup>	$Q_{gs}$			1.1		
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$			2.8		
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$	$V_{DD} = 10V, I_D \cong 5A, V_{GEN} = 4.5V, R_G = 6\Omega$		16		nS
Rise Time <sup>2</sup>	$t_r$			26		
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$			47		
Fall Time <sup>2</sup>	$t_f$			16		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (<math>T_J = 25\text{ }^\circ\text{C}</math>)</b>						
Continuous Current	$I_S$				5	A
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = 5A, V_{GS} = 0V$			1	V
Reverse Recovery Time	$t_{rr}$	$I_F = 5A, di_F/dt = 100A / \mu S$		9		nS
Reverse Recovery Charge	$Q_{rr}$			3		nC

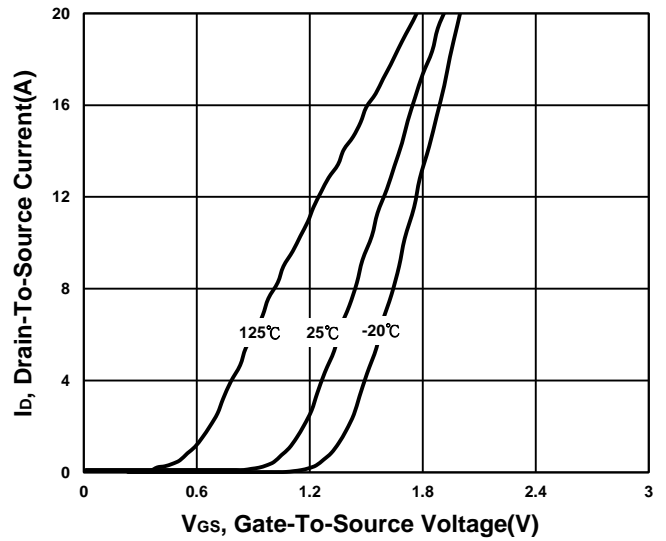
<sup>1</sup>Pulse test : Pulse Width  $\leq 300\ \mu\text{sec}$ , Duty Cycle  $\leq 2\%$ .

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

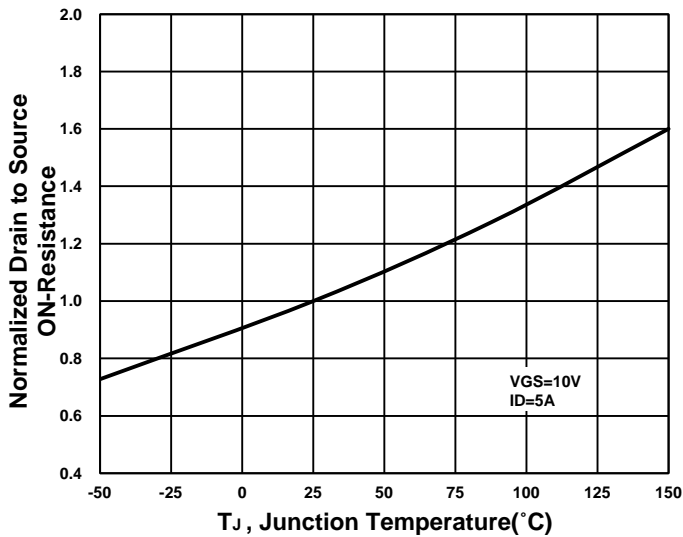
**Output Characteristics**



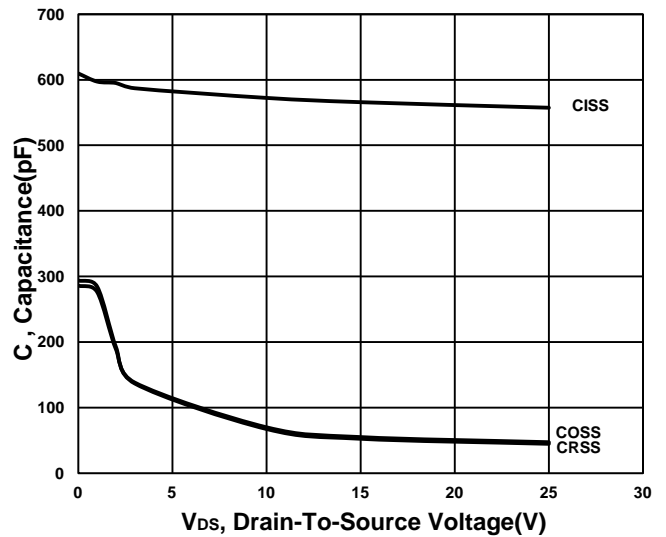
**Transfer Characteristics**



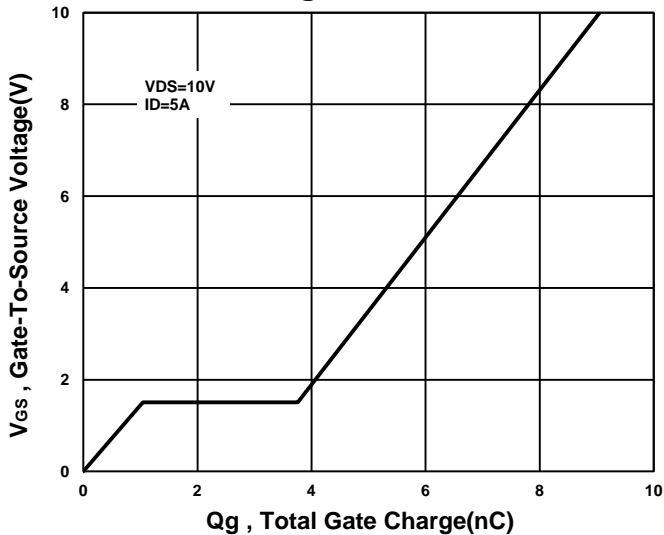
**On-Resistance VS Temperature**



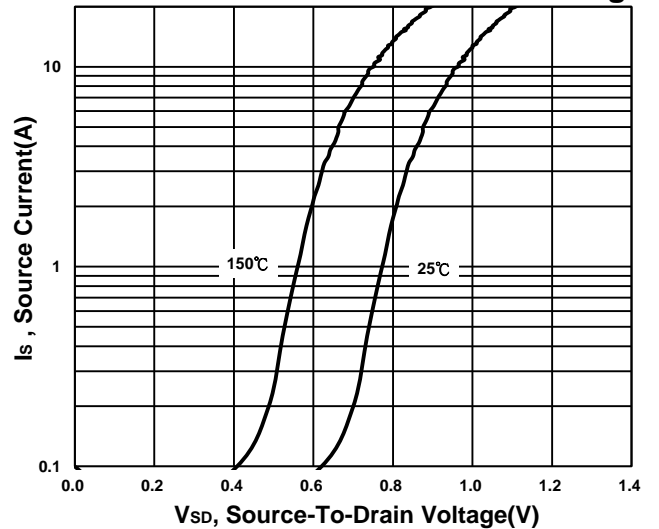
**Capacitance Characteristic**



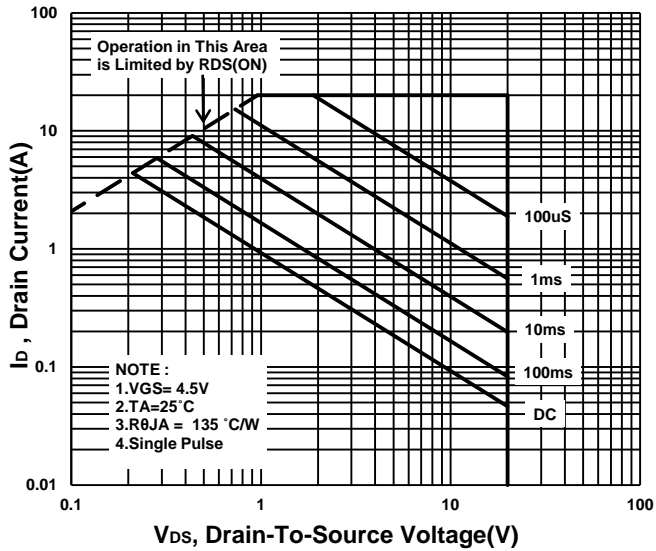
**Gate charge Characteristics**



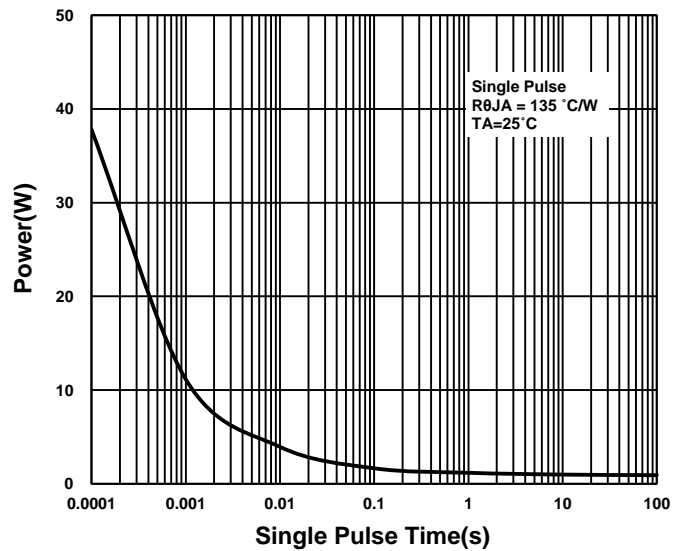
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

