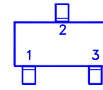
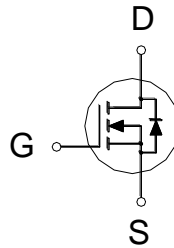




**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
30V	60mΩ	3.5A



1: GATE  
2: DRAIN  
3: SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		$V_{GS}$	±20	V
Continuous Drain Current	$T_A = 25\text{ °C}$	$I_D$	3.5	A
	$T_A = 70\text{ °C}$		2.8	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	20	
Power Dissipation <sup>3</sup>	$T_A = 25\text{ °C}$	$P_D$	1.3	W
	$T_A = 70\text{ °C}$		0.8	
Operating Junction & Storage Temperature Range		$T_j, T_{stg}$	-55 to 150	°C

**THERMAL RESISTANCE RATING**

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient <sup>2</sup>	$t \leq 10s$	$R_{\theta JA}$		90	°C / W
Junction-to-Ambient <sup>2</sup>	Steady-State	$R_{\theta JA}$		160	

<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  $T_A = 25\text{ °C}$ .

<sup>3</sup>The Power dissipation is based on  $R_{\theta JA} t \leq 10s$  value.

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

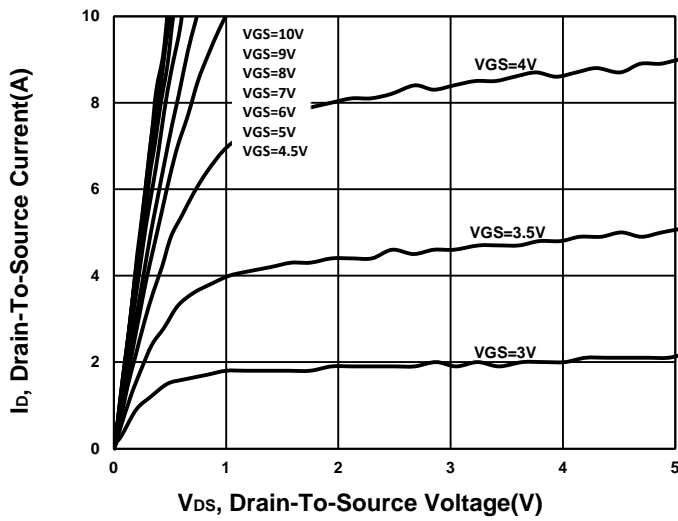
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.5	2.5	
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 20V$			±100	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 125\text{ °C}$			10	
Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 3A$		44	60	mΩ
		$V_{GS} = 4.5V, I_D = 1.5A$		68	100	

Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 5V, I_D = 3A$		6		S		
<b>DYNAMIC</b>								
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$		206		pF		
Output Capacitance	$C_{oss}$			36				
Reverse Transfer Capacitance	$C_{rss}$			25				
Total Gate Charge <sup>2</sup>	$Q_{g(VGS=10V)}$	$V_{DS} = 15V, I_D = 3A$		5		nC		
	$Q_{g(VGS=4.5V)}$			2.9				
Gate-Source Charge <sup>2</sup>	$Q_{gs}$			0.8				
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$			1.7				
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$		$V_{DD} = 15V,$ $I_D \cong 3A, V_{GS} = 10V, R_{GEN} = 6\Omega$		6			nS
Rise Time <sup>2</sup>	$t_r$				13			
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$			37				
Fall Time <sup>2</sup>	$t_f$			9				
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>J</sub> = 25 °C)</b>								
Continuous Current <sup>2</sup>	$I_S$			0.8		A		
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = 3A, V_{GS} = 0V$		1.5		V		
Reverse Recovery Time	$t_{rr}$	$I_F = 3A, di_F/dt = 100A / \mu S$ $V_{GS} = 0V$		11.5		nS		
Reverse Recovery Charge	$Q_{rr}$			3.5		nC		

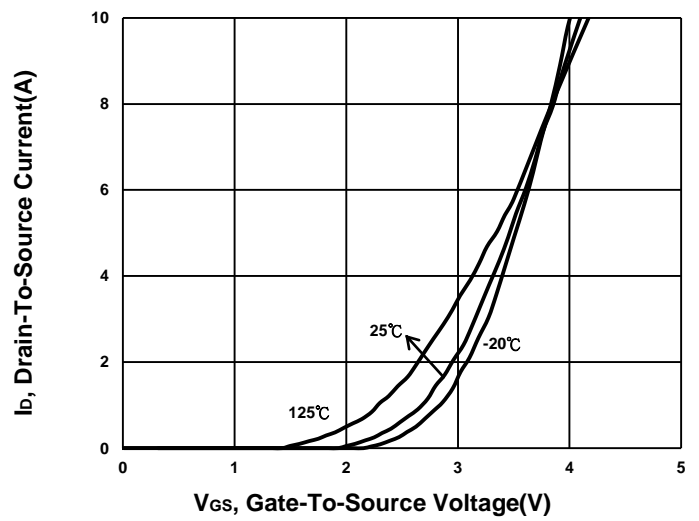
<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

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

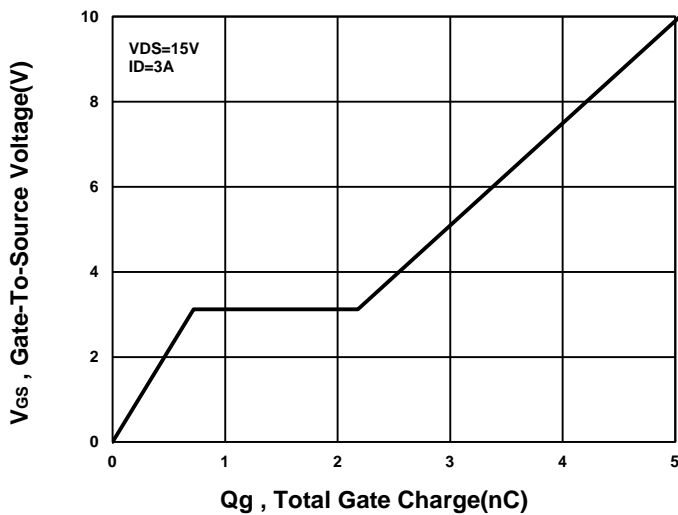
**Output Characteristics**



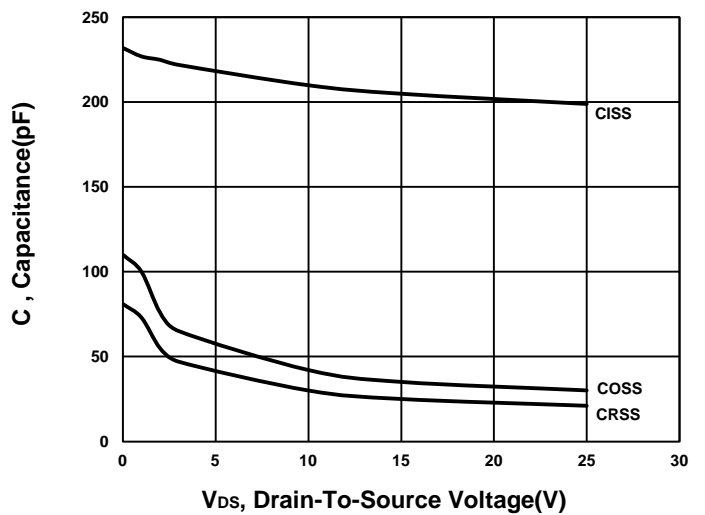
**Transfer Characteristics**



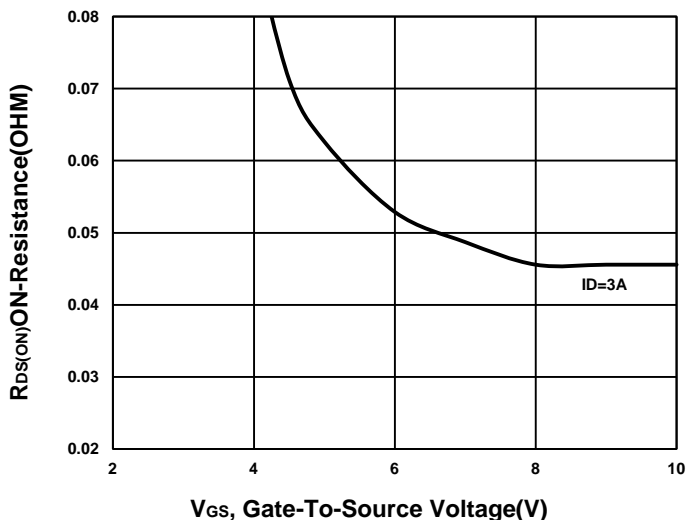
**Gate charge Characteristics**



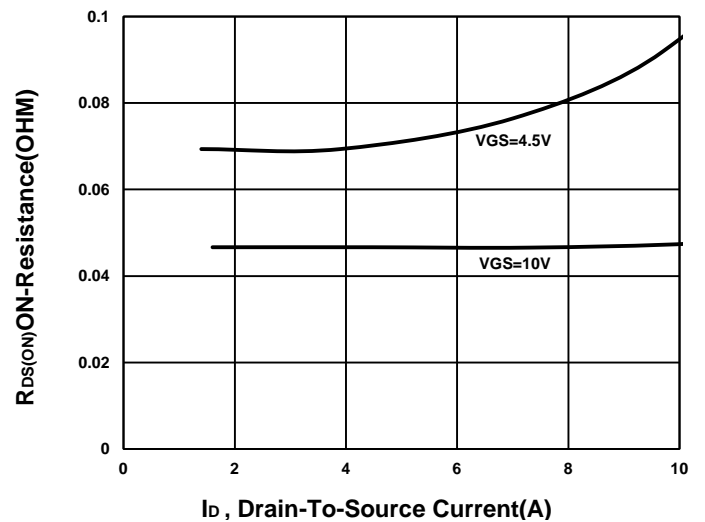
**Capacitance Characteristic**



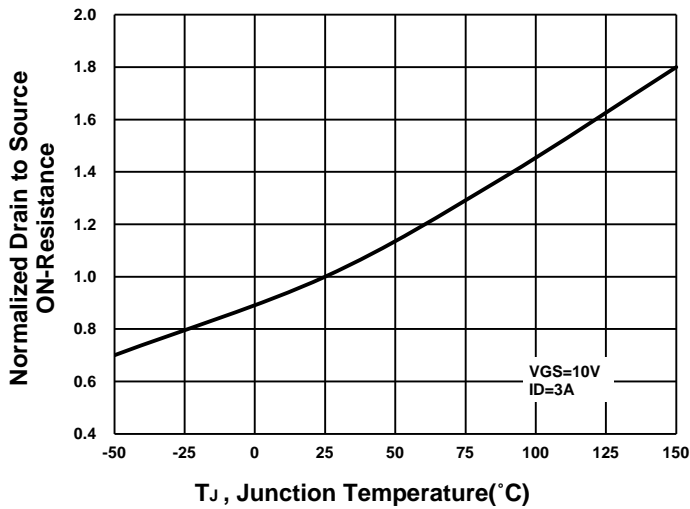
**On-Resistance VS Gate-To-Source**



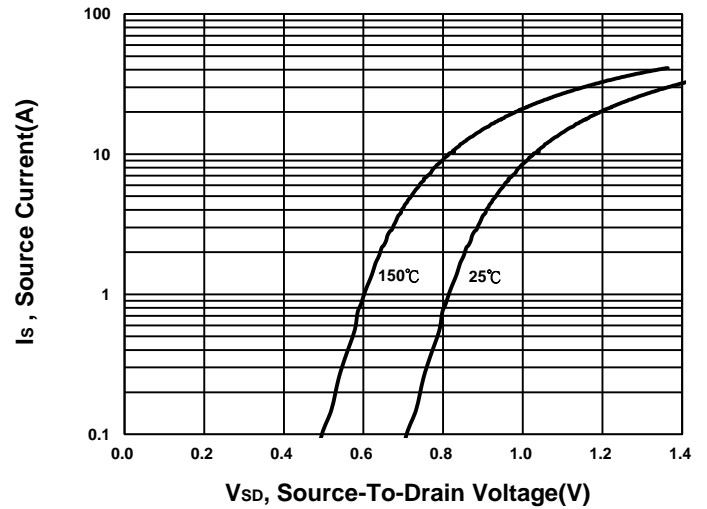
**On-Resistance VS Drain Current**



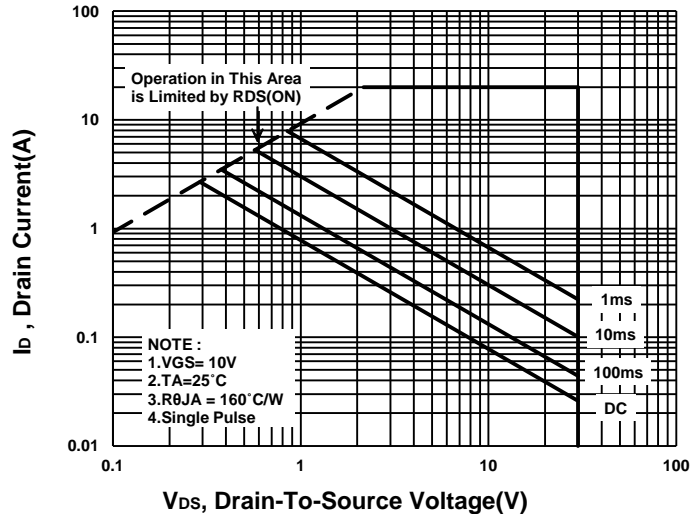
**On-Resistance VS Temperature**



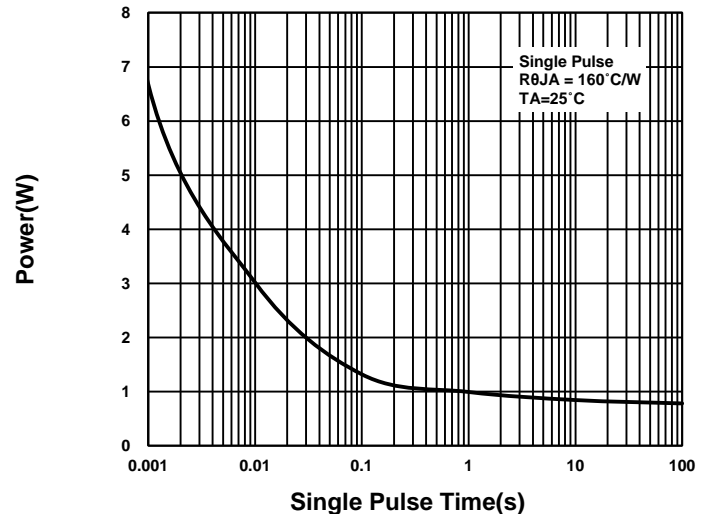
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

