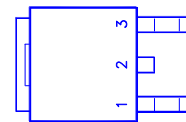
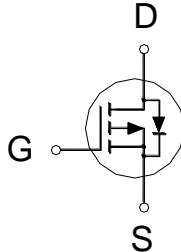




**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
-60V	90mΩ	-13A



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

**ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25 °C Unless Otherwise Noted)**

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		$V_{DS}$	-60	V
Gate-Source Voltage		$V_{GS}$	±25	V
Continuous Drain Current <sup>2</sup>	T <sub>C</sub> = 25 °C	$I_D$	-13	A
	T <sub>C</sub> = 100 °C		-8.3	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	-37	
Avalanche Current		$I_{AS}$	-17.2	
Avalanche Energy	L = 0.1mH	$E_{AS}$	14.7	mJ
Power Dissipation	T <sub>C</sub> = 25 °C	$P_D$	31.2	W
	T <sub>C</sub> = 100 °C		12.5	
Junction & Storage Temperature Range		T <sub>J</sub> , T <sub>stg</sub>	-55 to 150	°C

**THERMAL RESISTANCE RATINGS**

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		4	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

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

**ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25 °C, Unless Otherwise Noted)**

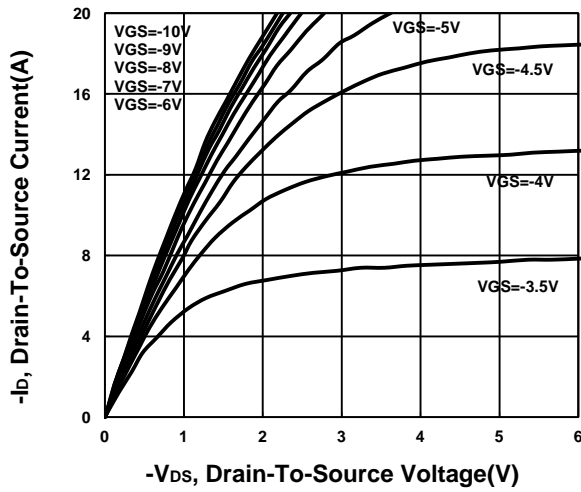
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.3	-1.8	-2.3	
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 25V$			±100	nA

Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -48V, V_{GS} = 0V$			-1	$\mu A$
		$V_{DS} = -40V, V_{GS} = 0V, T_J = 125\text{ }^\circ C$			-10	
Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = -4.5V, I_D = -6A$		110	135	$m\Omega$
		$V_{GS} = -10V, I_D = -7A$		78	90	
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = -5V, I_D = -7A$		10		S
<b>DYNAMIC</b>						
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = -25V, f = 1MHz$		535		$pF$
Output Capacitance	$C_{oss}$			61		
Reverse Transfer Capacitance	$C_{rss}$			40		
Gate Resistance	$R_g$	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		9.2		$\Omega$
Total Gate Charge <sup>2</sup>	$Q_g(V_{GS}=-10V)$	$V_{DS} = -30V, V_{GS} = -10V, I_D = -7A$		11.6		$nC$
	$Q_g(V_{GS}=-4.5V)$			6.3		
Gate-Source Charge <sup>2</sup>	$Q_{gs}$			1.6		
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$			3.4		
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$		$V_{DS} = -30V, I_D \cong -7A, V_{GS} = -10V, R_{GEN} = 6\Omega$		12.3	
Rise Time <sup>2</sup>	$t_r$			33		
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$			47		
Fall Time <sup>2</sup>	$t_f$			51		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (<math>T_J = 25\text{ }^\circ C</math>)</b>						
Continuous Current <sup>3</sup>	$I_S$				-13	A
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = -7A, V_{GS} = 0V$			-1	V
Reverse Recovery Time	$t_{rr}$	$I_F = -7A, di_F/dt = 100A / \mu S$		19		nS
Reverse Recovery Charge	$Q_{rr}$			16		nC

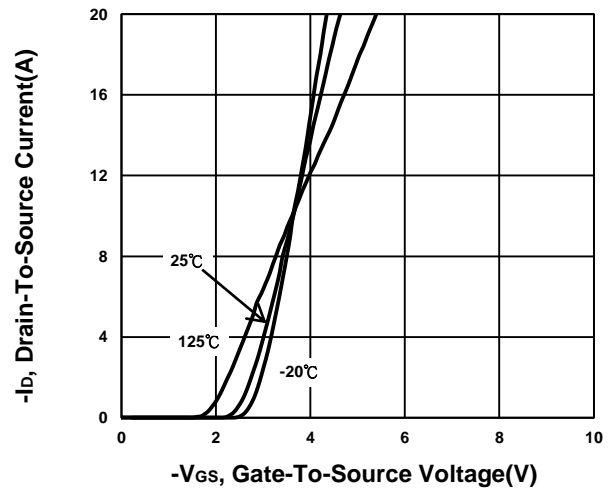
<sup>1</sup>Pulse test : Pulse Width  $\leq 300\ \mu sec$ , Duty Cycle  $\leq 2\%$ .

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

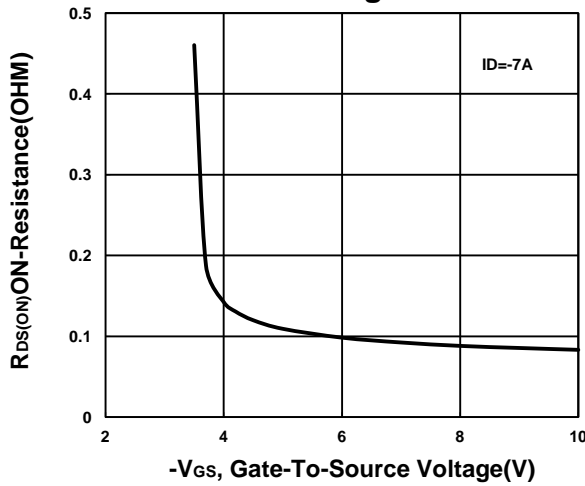
**Output Characteristics**



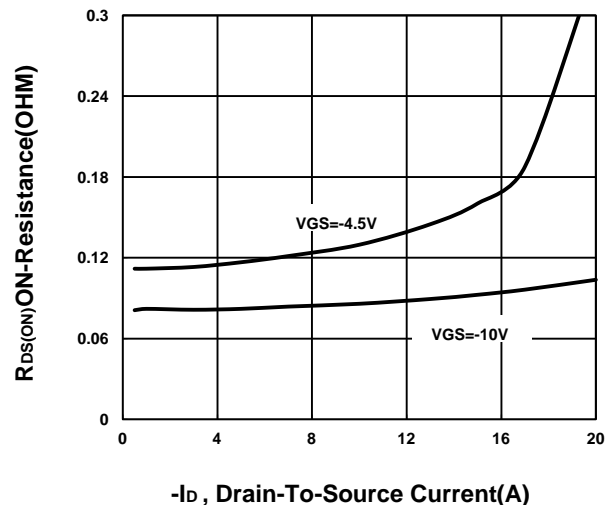
**Transfer Characteristics**



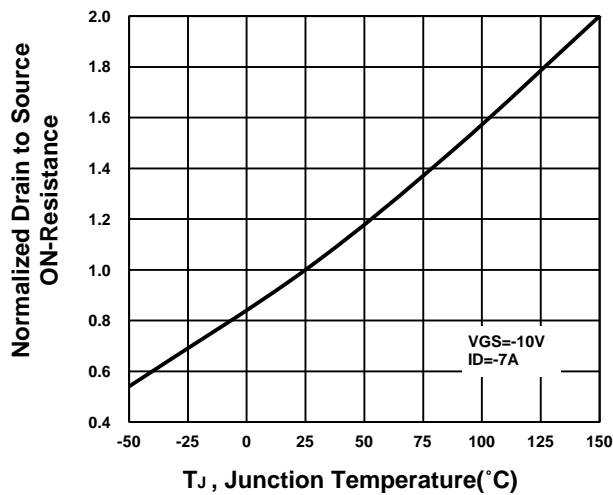
**On-Resistance VS Gate-To-Source Voltage**



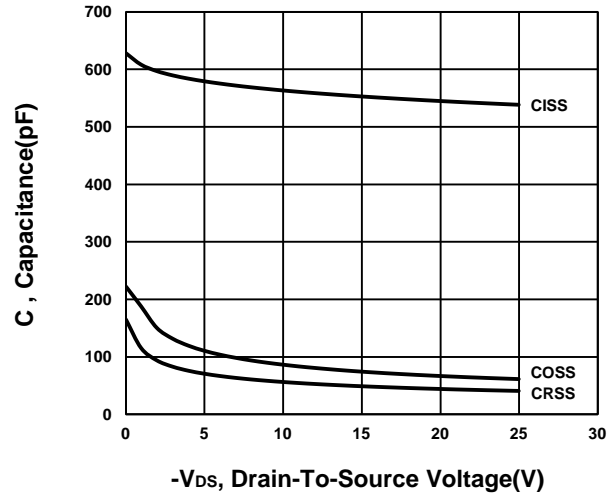
**On-Resistance VS Drain Current**



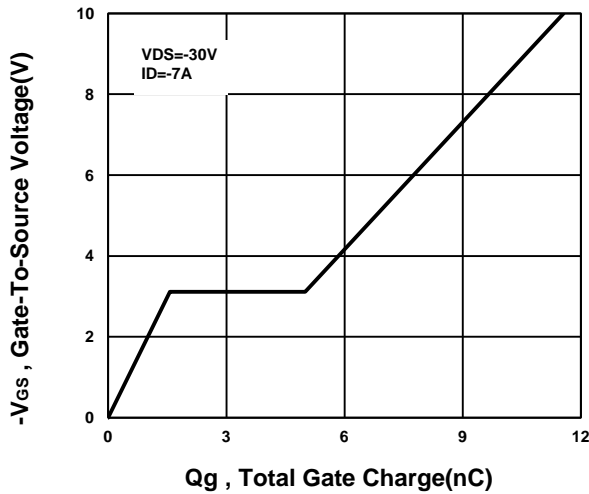
**On-Resistance VS Temperature**



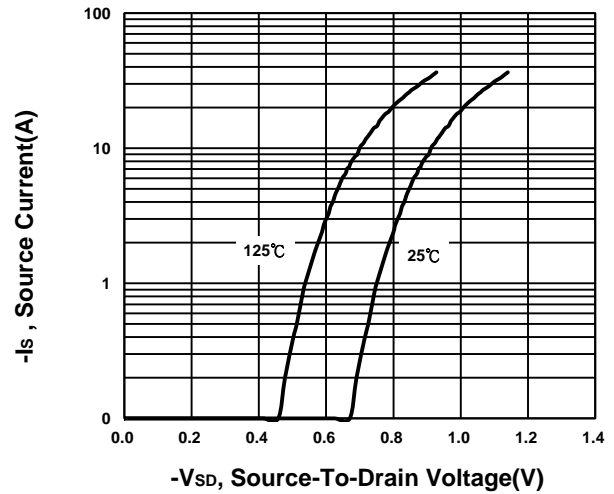
**Capacitance Characteristic**



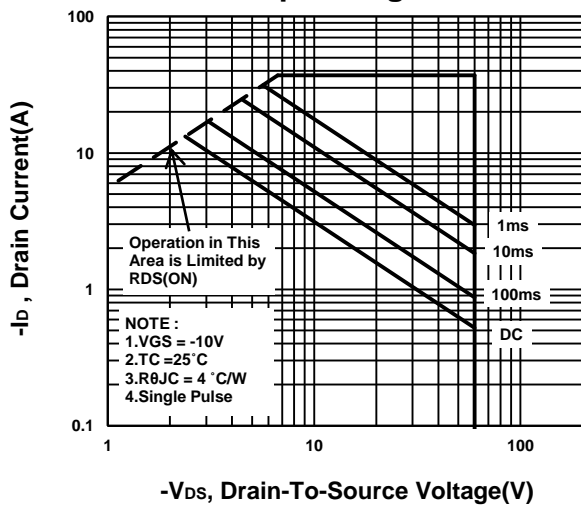
**Gate charge Characteristics**



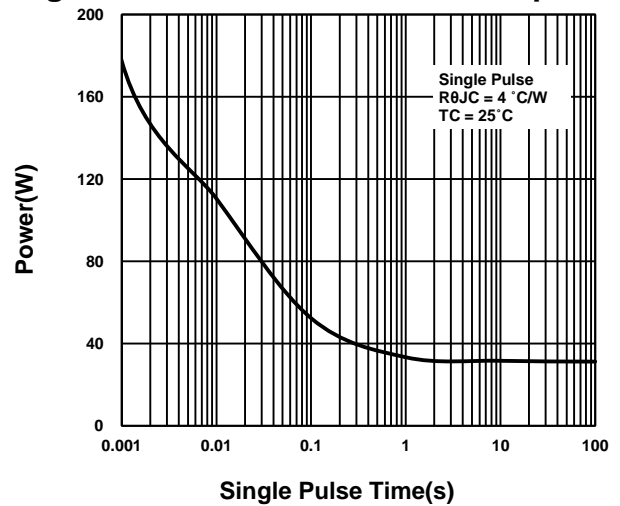
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

