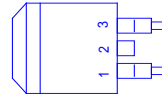
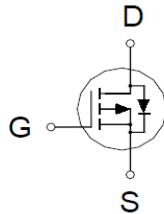


**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
-40V	16mΩ	-65A



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		$V_{DS}$	-40	V
Gate-Source Voltage		$V_{GS}$	±20	V
Continuous Drain Current <sup>2</sup>	T <sub>C</sub> = 25 °C	$I_D$	-65	A
	T <sub>C</sub> = 100°C		-42	
Pulsed Drain Current <sup>1,2</sup>		$I_{DM}$	-120	
Avalanche Current		$I_{AS}$	-46	
Avalanche Energy	L = 0.1 mH	$E_{AS}$	107	mJ
Power Dissipation	T <sub>C</sub> = 25 °C	$P_D$	104	W
	T <sub>C</sub> = 100°C		41	
Operating 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 <sub>θJC</sub>		1.2	°C / W

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

<sup>2</sup>Limited only by maximum temperature allowed.

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

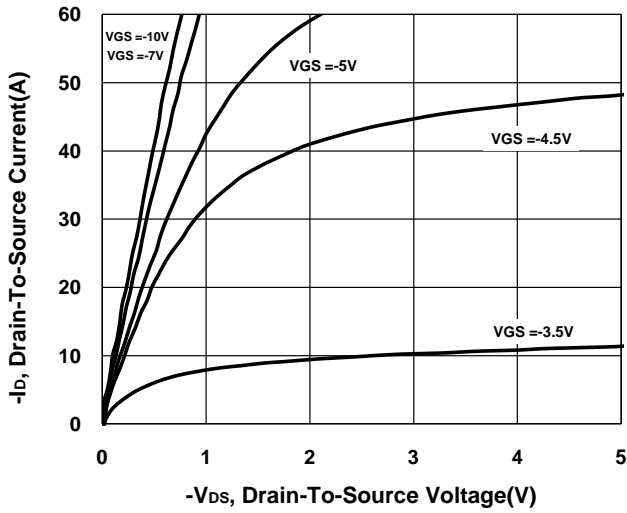
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-40			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.5	-2.2	-3	
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 20V$			±100	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -32V, V_{GS} = 0V$			1	μA
		$V_{DS} = -30V, V_{GS} = 0V, T_J = 70 °C$			10	
On-State Drain Current <sup>1</sup>	$I_{D(ON)}$	$V_{DS} = -5V, V_{GS} = -10V$	-120			A
Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = -7V, I_D = -15A$		14	20	mΩ
		$V_{GS} = -10V, I_D = -25A$		12	16	
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = -10V, I_D = -25A$		29		S

DYNAMIC					
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = -15V, f = 1MHz$		2229	
Output Capacitance	$C_{oss}$			334	pF
Reverse Transfer Capacitance	$C_{rss}$			293	
Gate Resistance	$R_g$	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		4.3	$\Omega$
Total Gate Charge <sup>2</sup>	$Q_g$	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = -10V, I_D = -25A$		48	nC
Gate-Source Charge <sup>2</sup>	$Q_{gs}$			9	
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$			15	
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$	$V_{DS} = 0.5V_{(BR)DSS}, I_D \cong -25A, V_{GS} = -10V, R_{GEN} = 6\Omega$		15	nS
Rise Time <sup>2</sup>	$t_r$			43	
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$			62	
Fall Time <sup>2</sup>	$t_f$			50	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS					
Continuous Current	$I_S$			-65	A
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = -25A, V_{GS} = 0V$		-1.3	V
Reverse Recovery Time	$t_{rr}$	$I_F = -25A, di_F/dt = 100A / \mu S$		27	nS
Reverse Recovery Charge	$Q_{rr}$			16	nC

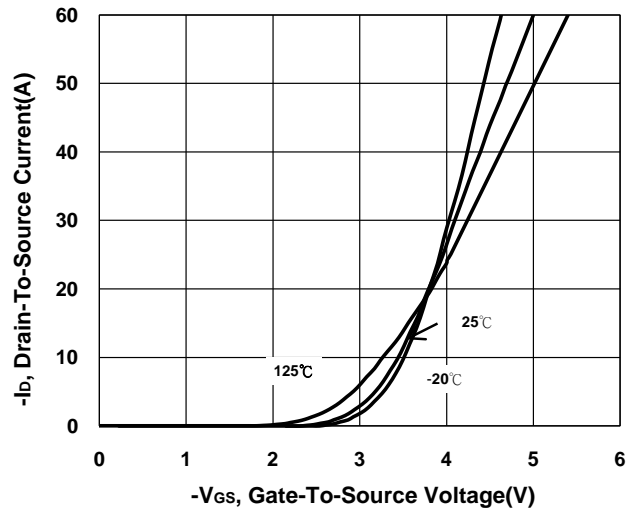
<sup>1</sup>Pulse test : Pulse Width  $\leq 300 \mu sec$ , Duty Cycle  $\leq 2\%$ .

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

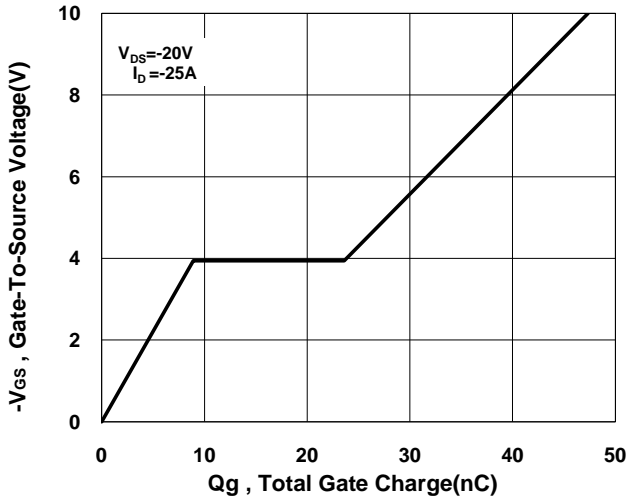
Output Characteristics



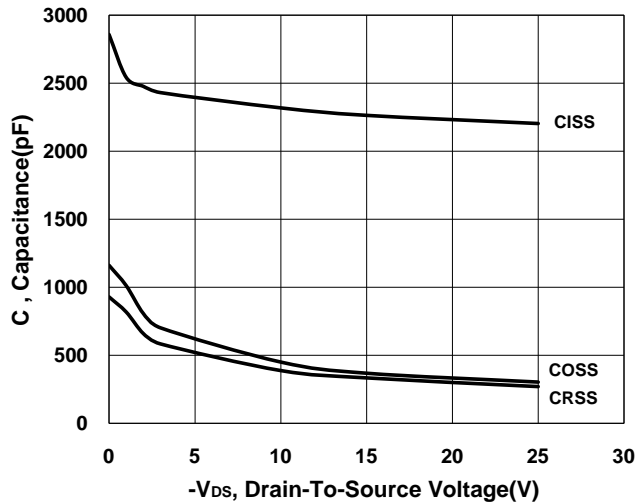
Transfer Characteristics



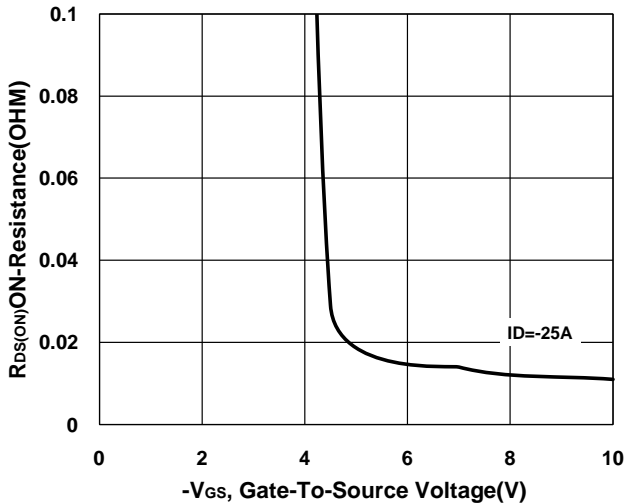
Gate charge Characteristics



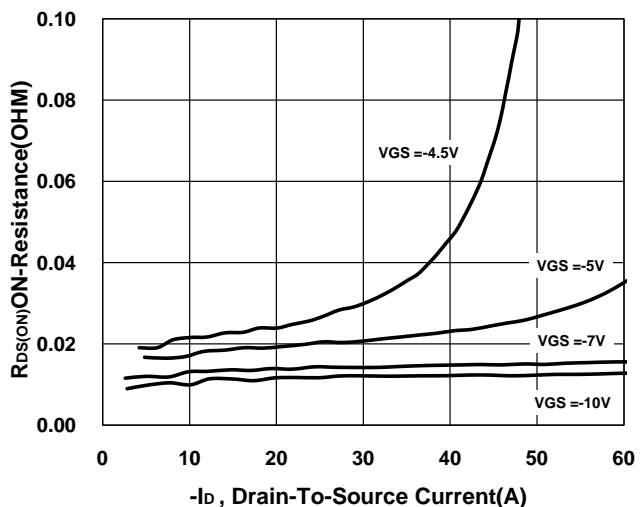
Capacitance Characteristic



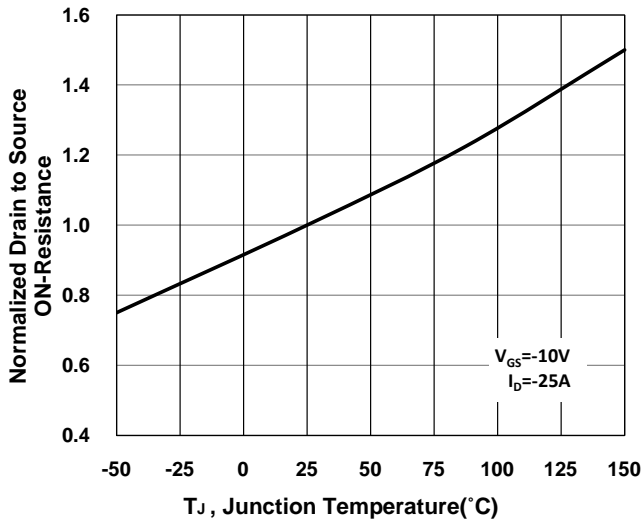
On-Resistance VS Temperature



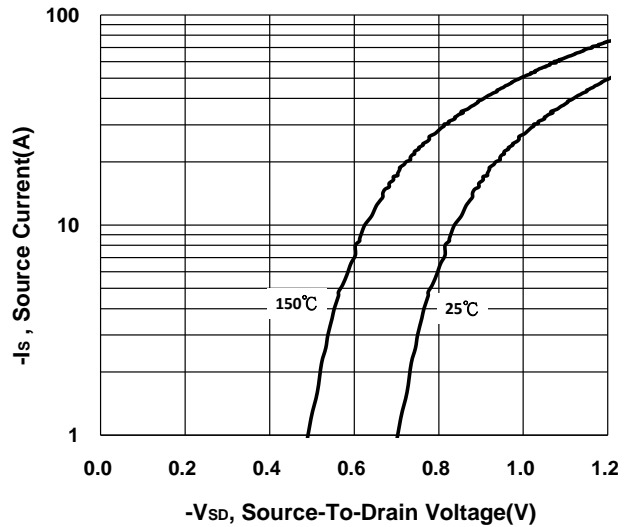
On-Resistance VS Drain Current



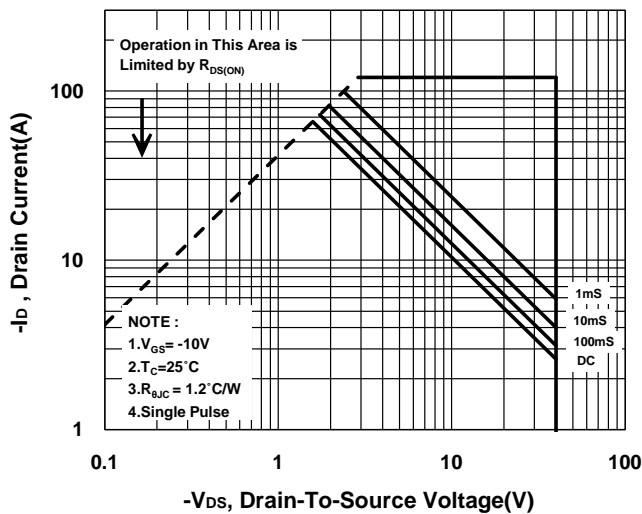
**On-Resistance VS Gate-To-Source**



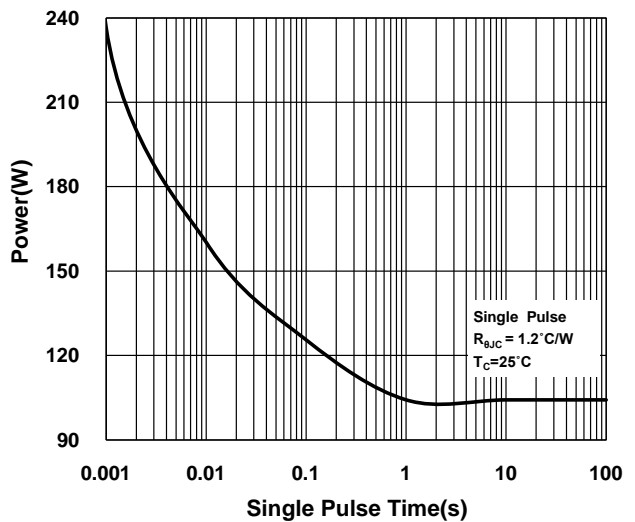
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

