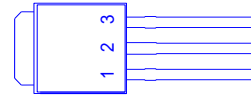
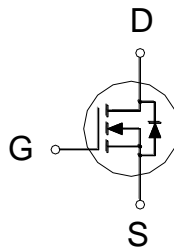




**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
100V	85m $\Omega$	15A



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

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		$V_{DS}$	100	V
Gate-Source Voltage		$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	$I_D$	15	A
	$T_C = 100\text{ }^\circ\text{C}$		9	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	35	
Avalanche Current		$I_{AS}$	12	
Avalanche Energy	$L = 0.1\text{mH}$	$E_{AS}$	7.2	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	$P_D$	46	W
	$T_C = 100\text{ }^\circ\text{C}$		18	
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-Case	$R_{\theta JC}$		2.7	$^\circ\text{C} / \text{W}$

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

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

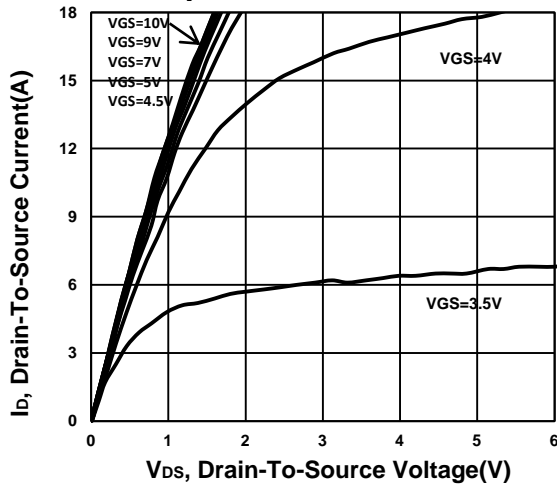
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1.3	1.8	2.3	V
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 80\text{V}, V_{GS} = 0\text{V}$			1	$\mu\text{A}$
		$V_{DS} = 80\text{V}, V_{GS} = 0\text{V}, T_J = 125\text{ }^\circ\text{C}$			10	
On-State Drain Current <sup>1</sup>	$I_{D(ON)}$	$V_{DS} = 5\text{V}, V_{GS} = 10\text{V}$	35			A
Drain-Source On-State Resistance <sub>1</sub>	$R_{DS(ON)}$	$V_{GS} = 4.5\text{V}, I_D = 10\text{A}$		67	95	m $\Omega$
		$V_{GS} = 10\text{V}, I_D = 15\text{A}$		61	85	
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 5\text{V}, I_D = 15\text{A}$		25		S

DYNAMIC							
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		527		pF	
Output Capacitance	$C_{oss}$			68			
Reverse Transfer Capacitance	$C_{rss}$			37			
Gate Resistance	$R_g$	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		1.5		$\Omega$	
Total Gate Charge <sup>2</sup>	$Q_g$	$V_{GS} = 10V, V_{DS} = 0.5V_{(BR)DSS}, I_D = 15A$		18.5		nC	
Gate-Source Charge <sup>2</sup>	$Q_{gs}$			2.7			
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$			5.1			
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$	$I_D \cong 15A, V_{GS} = 10V, R_{GEN} = 6\Omega$	$V_{DS} = 40V$		11	nS	
Rise Time <sup>2</sup>	$t_r$				48		
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$				80		
Fall Time <sup>2</sup>	$t_f$				73		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ( $T_J = 25^\circ C$ )							
Continuous Current	$I_S$				15	A	
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = 15A, V_{GS} = 0V$			1.1	V	
Reverse Recovery Time	$t_{rr}$	$I_F = 15A, di_F/dt = 100A / \mu S$			33	nS	
Reverse Recovery Charge	$Q_{rr}$					35	nC

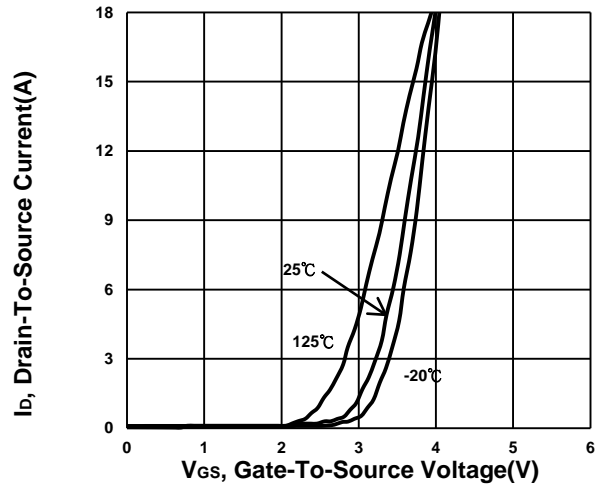
<sup>1</sup>Pulse test : Pulse Width  $\leq 300 \mu sec$ , Duty Cycle  $\leq 2\%$ .

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

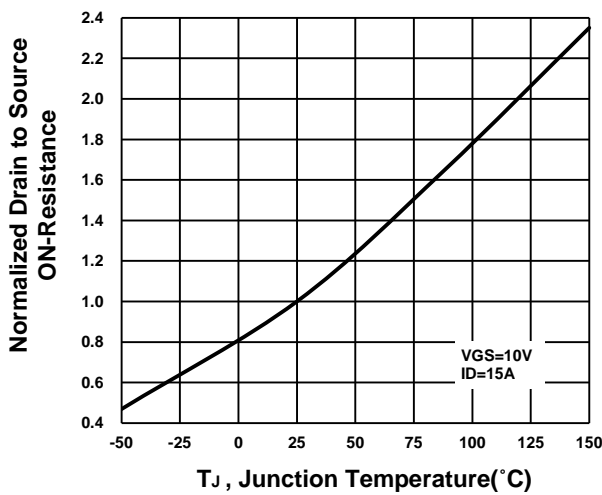
**Output Characteristics**



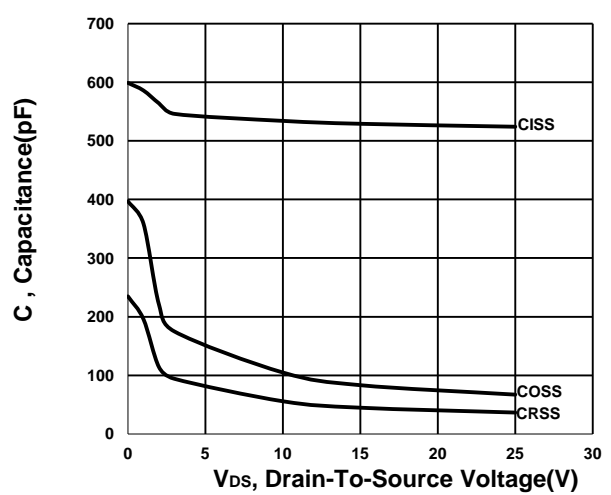
**Transfer Characteristics**



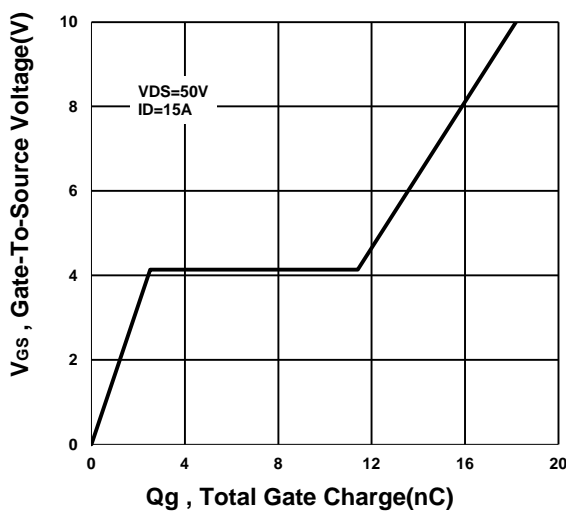
**On-Resistance VS Temperature**



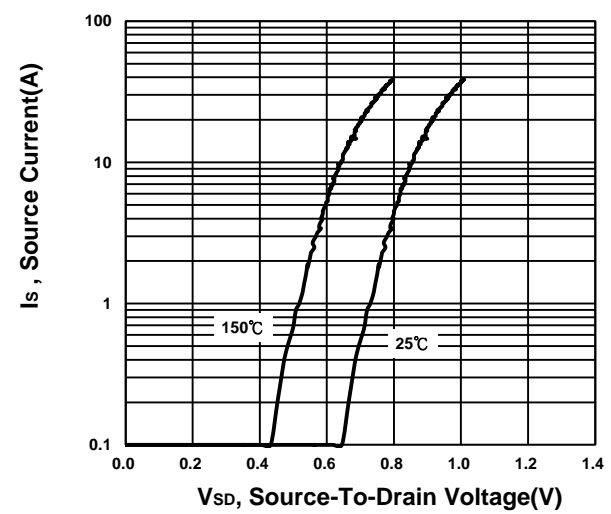
**Capacitance Characteristic**



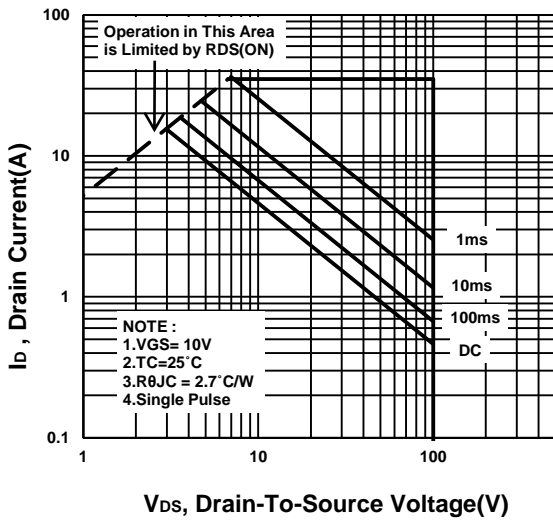
**Gate charge Characteristics**



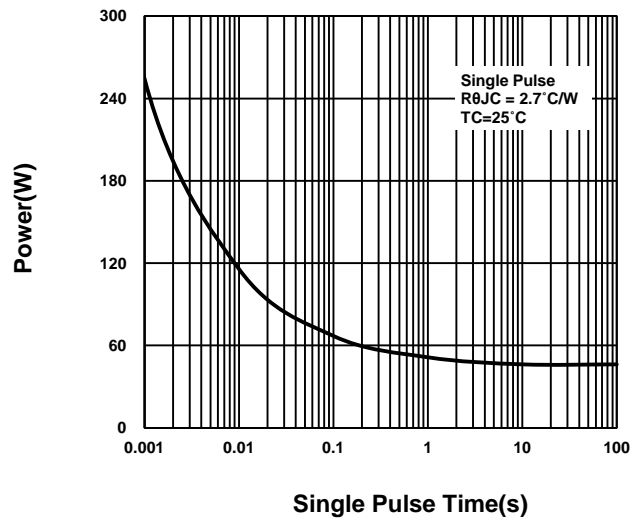
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

