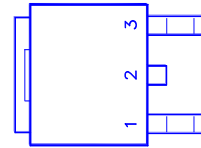
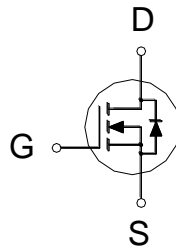




**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
100V	37mΩ	25A



- 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		$V_{GS}$	±20	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	$I_D$	25	A
	$T_C = 100\text{ }^\circ\text{C}$		16	
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	$I_D$	5.6	
	$T_A = 70\text{ }^\circ\text{C}$		4.5	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	75	
Avalanche Current <sup>2</sup>		$I_{AS}$	16	
Avalanche Energy <sup>2</sup>		$E_{AS}$	128	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	$P_D$	50	W
	$T_C = 100\text{ }^\circ\text{C}$		20	
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	$P_D$	2.5	
	$T_A = 70\text{ }^\circ\text{C}$		1.4	
Junction & Storage Temperature Range		$T_J, T_{stg}$	-55 to 150	°C

**THERMAL RESISTANCE RATINGS**

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient <sup>2</sup>	$R_{\theta JA}$		50	°C / W
Junction-to-Case	$R_{\theta JC}$		2.5	

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

<sup>2</sup>Starting  $T_j = 25\text{ }^\circ\text{C}$ ,  $L = 1\text{mH}$ ,  $V_{DD} = 50\text{V}$

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

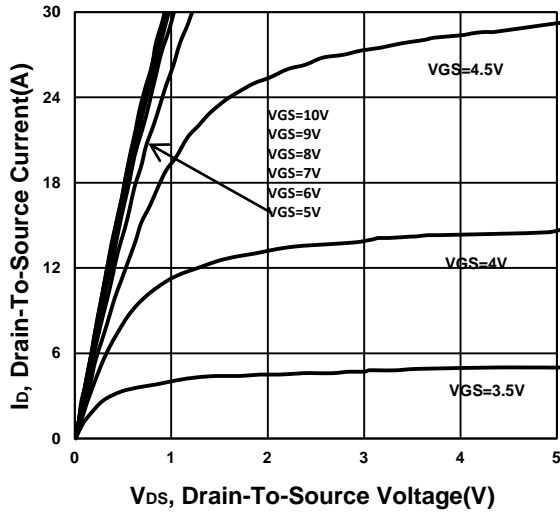
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1.3	2	2.5	

Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 80V, V_{GS} = 0V$			1	$\mu A$
		$V_{DS}=80V, V_{GS}=0V, T_J=125\text{ }^\circ C$			10	
Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 10A$		35	48	$m\Omega$
		$V_{GS} = 10V, I_D = 10A$		28	37	$m\Omega$
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 10V, I_D = 10A$		23		S
<b>DYNAMIC</b>						
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		996		$pF$
Output Capacitance	$C_{oss}$			127		
Reverse Transfer Capacitance	$C_{rss}$			53		
Gate Resistance	$R_g$	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		1		$\Omega$
Total Gate Charge <sup>2</sup>	$Q_g$	$V_{DS} = 50V, I_D = 10A$ $V_{GS} = 10V$		25		$nC$
Gate-Source Charge <sup>2</sup>	$Q_{gs}$			3.9		
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$			8		
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$	$V_{DD} = 50V$ $I_D \cong 10A, V_{GS} = 10V, R_{GS} = 6\Omega$		29		$nS$
Rise Time <sup>2</sup>	$t_r$			2		
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$			39		
Fall Time <sup>2</sup>	$t_f$			15		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (<math>T_J = 25\text{ }^\circ C</math>)</b>						
Continuous Current	$I_S$				25	A
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = 10A, V_{GS} = 0V$			1.2	V
Reverse Recovery Time	$t_{rr}$	$I_F = 10A, di_F/dt = 100A / \mu S$		36		nS
Reverse Recovery Charge	$Q_{rr}$			52		nC

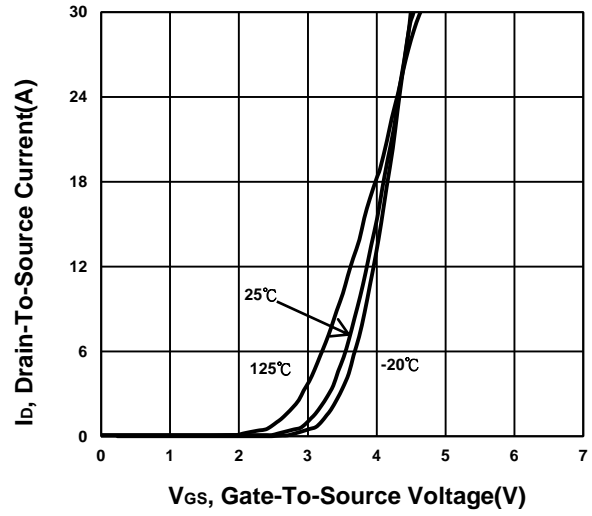
<sup>1</sup>Pulse test : Pulse Width  $\leq 300\ \mu sec$ , Duty Cycle  $\leq 2\%$ .

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

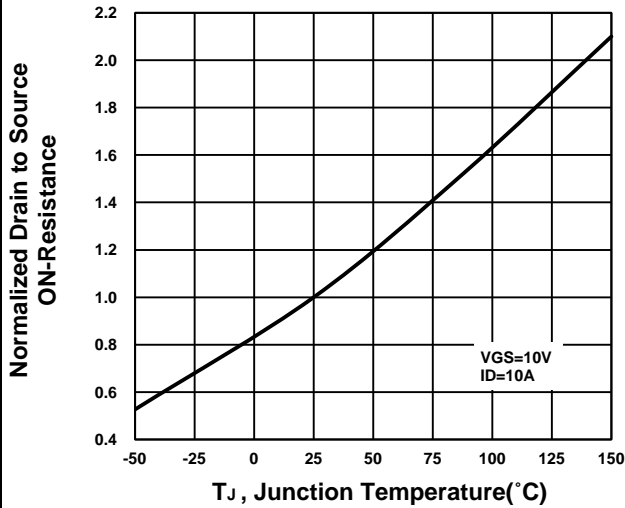
**Output Characteristics**



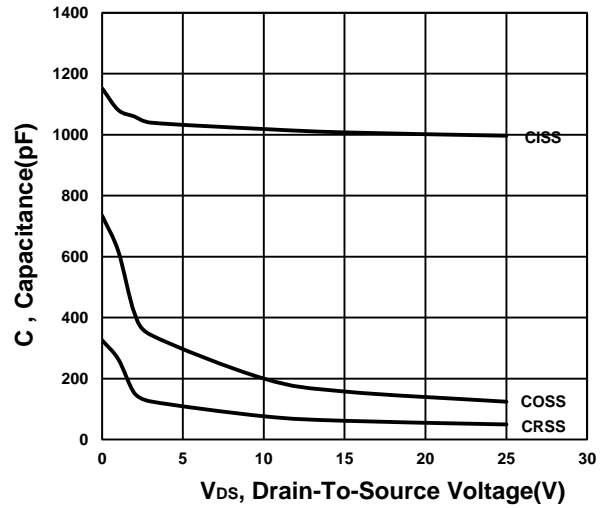
**Transfer Characteristics**



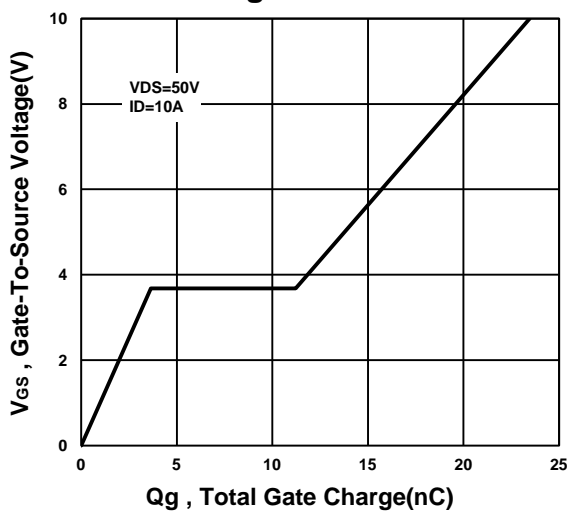
**On-Resistance VS Temperature**



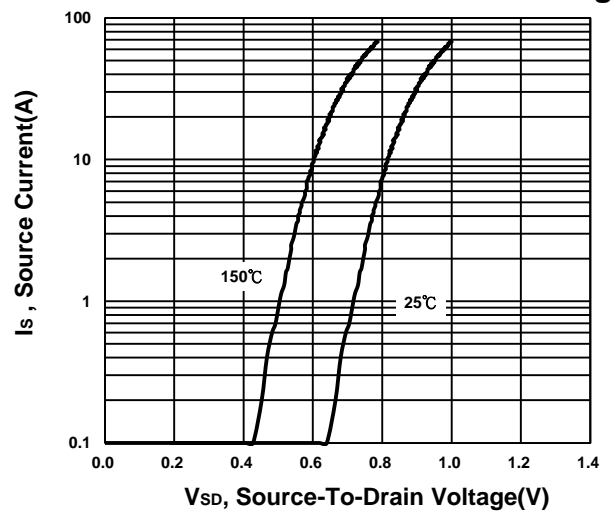
**Capacitance Characteristic**



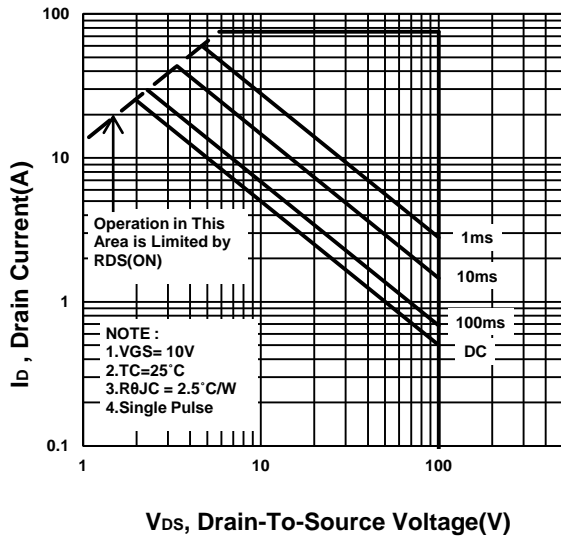
**Gate charge Characteristics**



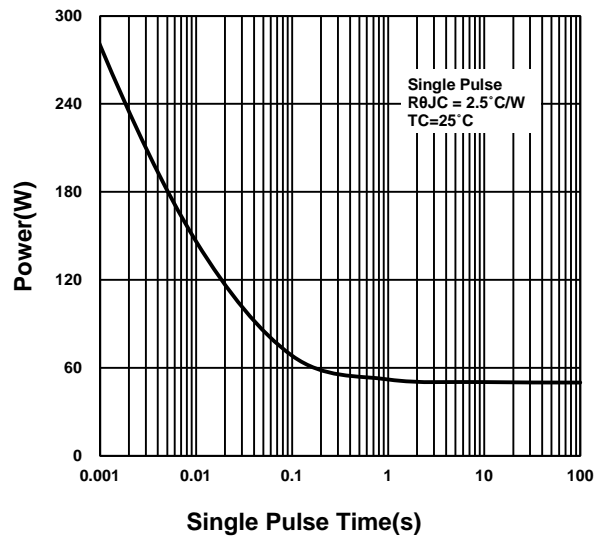
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

