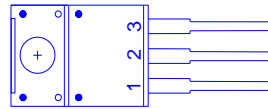
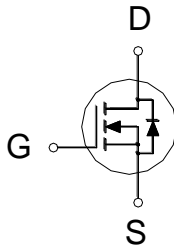




1. GATE
2. DRAIN
3. SOURCE

**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
100V	37mΩ	19A



**ABSOLUTE MAXIMUM RATINGS ( $T_A = 25\text{ °C}$  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	$T_C = 25\text{ °C}$	$I_D$	19	A
	$T_C = 100\text{ °C}$		12	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	75	
Avalanche Current		$I_{AS}$	15.3	
Avalanche Energy <sup>2</sup>		$E_{AS}$	117	mJ
Power Dissipation	$T_C = 25\text{ °C}$	$P_D$	31	W
	$T_C = 100\text{ °C}$		12.5	
Junction & Storage Temperature Range		$T_J, T_{stg}$	-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.

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

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

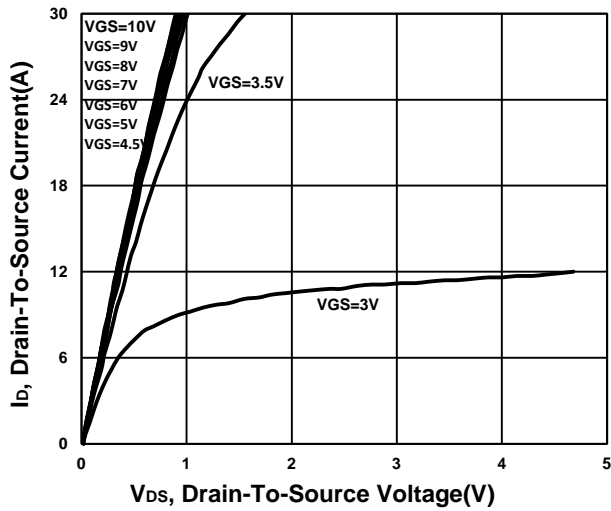
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1	1.8	3	
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$			±100	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 80\text{V}, V_{GS} = 0\text{V}$			1	μA
		$V_{DS} = 80\text{V}, V_{GS} = 0\text{V}, T_J = 125\text{ °C}$			10	
Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = 4.5\text{V}, I_D = 10\text{A}$		30	48	mΩ
		$V_{GS} = 10\text{V}, I_D = 10\text{A}$		27	37	mΩ

Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 10V, I_D = 10A$		35		S
<b>DYNAMIC</b>						
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		1070		pF
Output Capacitance	$C_{oss}$			146		
Reverse Transfer Capacitance	$C_{rss}$			59		
Total Gate Charge <sup>2</sup>	$Q_g$	$V_{DS} = 50V, I_D = 10A$ $V_{GS} = 10V$		24		nC
Gate-Source Charge <sup>2</sup>	$Q_{gs}$			3.7		
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$			8.8		
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$	$V_{DD} = 50V$ $I_D \cong 10A, V_{GS} = 10V, R_{GS} = 6\Omega$		30		nS
Rise Time <sup>2</sup>	$t_r$			21		
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$			45		
Fall Time <sup>2</sup>	$t_f$			21		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (<math>T_J = 25\text{ }^\circ\text{C}</math>)</b>						
Continuous Current	$I_S$				19	A
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = 10A, V_{GS} = 0V$			1.2	V
Reverse Recovery Time	$t_{rr}$	$I_F = 10A, di_F/dt = 100A / \mu S$		39		nS
Reverse Recovery Charge	$Q_{rr}$			55		nC

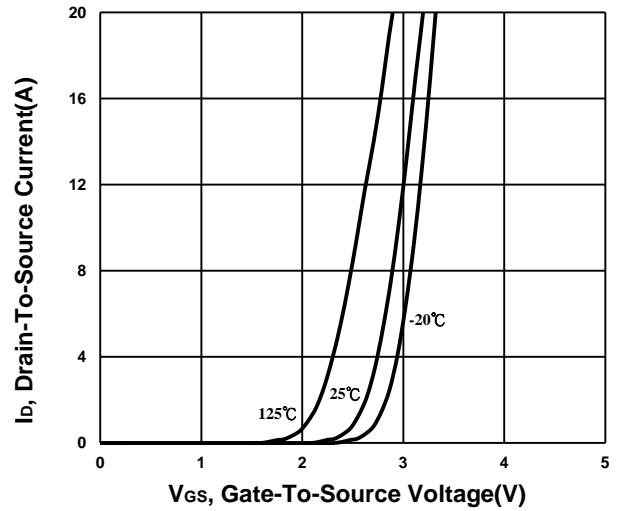
<sup>1</sup>Pulse test : Pulse Width  $\leq 300\ \mu\text{sec}$ , Duty Cycle  $\leq 2\%$ .

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

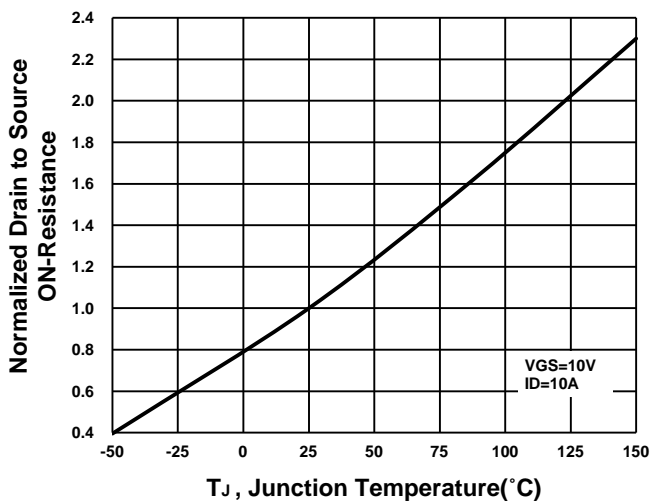
**Output Characteristics**



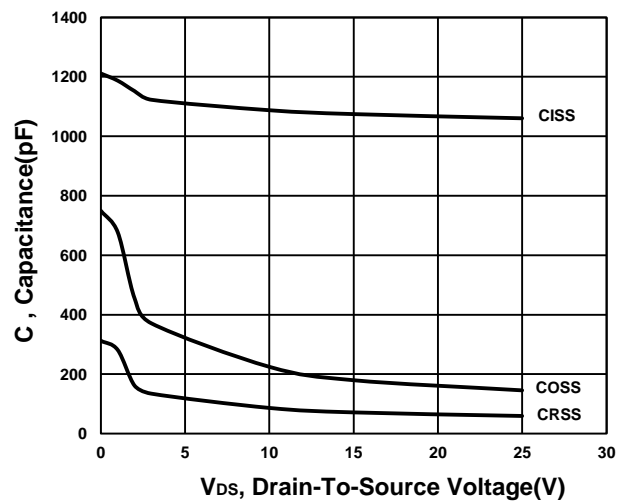
**Transfer Characteristics**



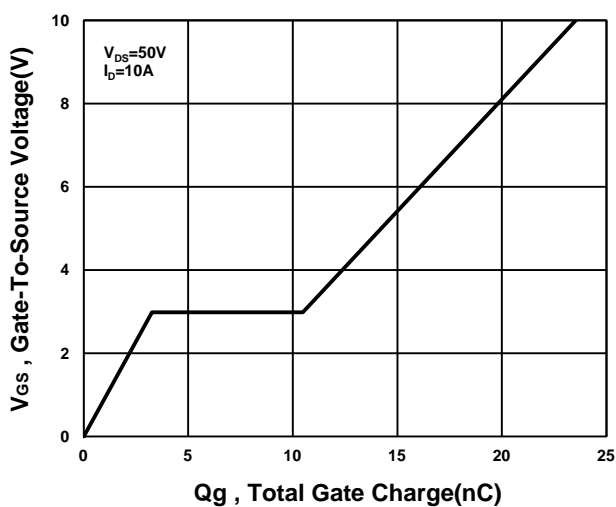
**On-Resistance VS Temperature**



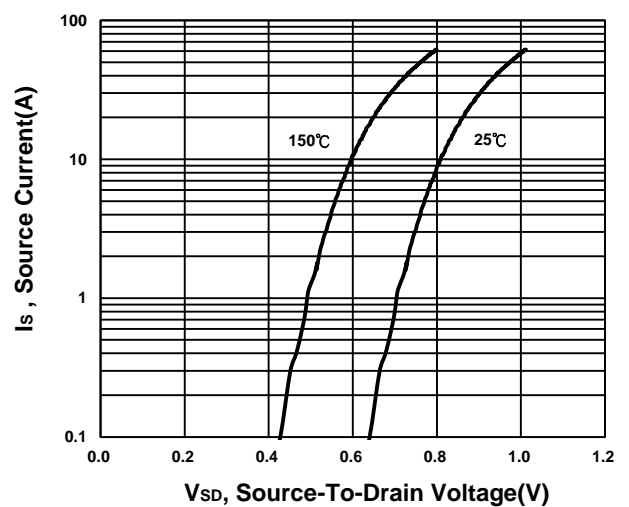
**Capacitance Characteristic**



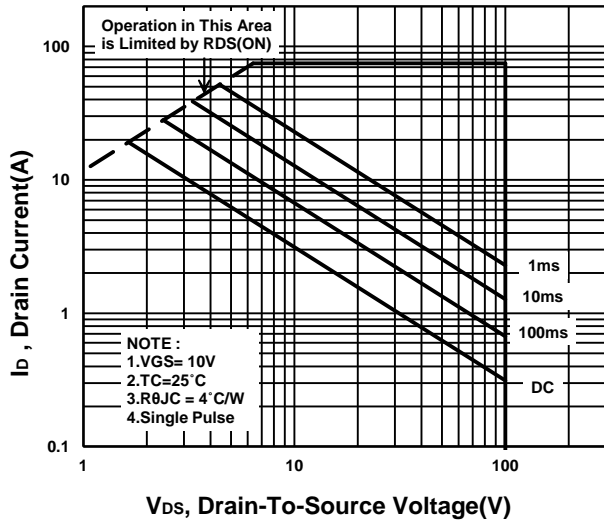
**Gate charge Characteristics**



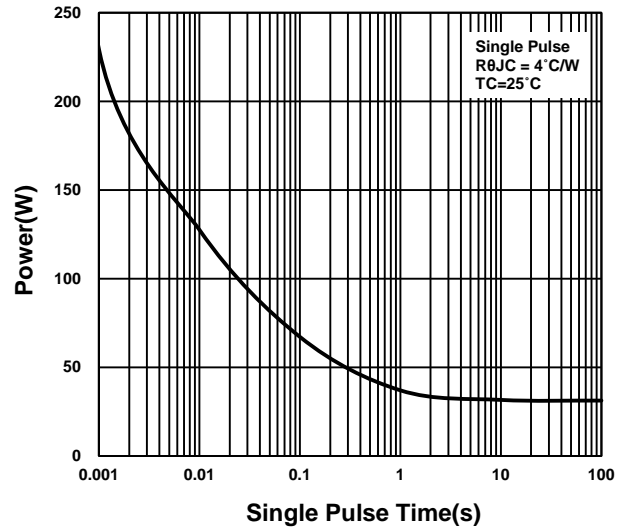
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

