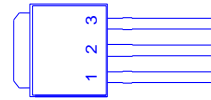
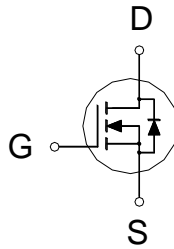




**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
100V	14.5m $\Omega$	49A



- 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	$T_C = 25\text{ }^\circ\text{C}$	$I_D$	49	A
	$T_C = 100\text{ }^\circ\text{C}$		31	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	90	
Avalanche Current		$I_{AS}$	20	
Avalanche Energy <sup>2</sup>	L = 1mH	$E_{AS}$	198	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	$P_D$	83	W
	$T_C = 100\text{ }^\circ\text{C}$		33	
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	$R_{\theta JC}$		1.5	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		62.5	

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

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

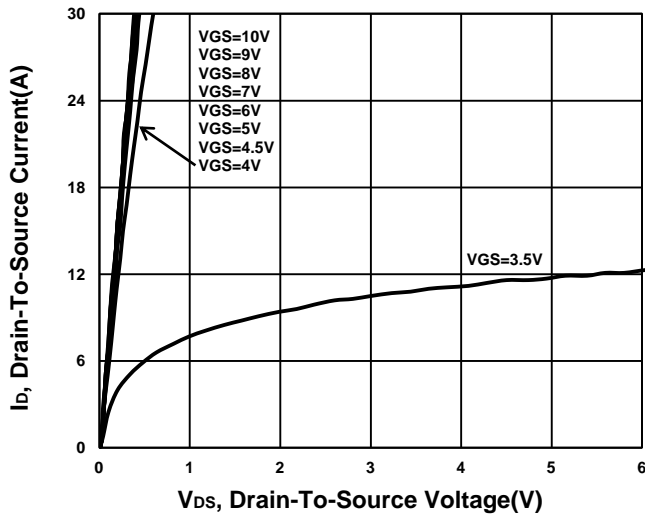
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu\text{A}$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1.3	1.8	2.3	
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 80V, V_{GS} = 0V$			1	$\mu\text{A}$
		$V_{DS}=80V, V_{GS}=0V, T_J=125\text{ }^\circ\text{C}$			10	
Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 15A$		12	16	m $\Omega$
	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 20A$		11.5	14.5	m $\Omega$

Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 5V, I_D = 20A$		48		S		
<b>DYNAMIC</b>								
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		4026		pF		
Output Capacitance	$C_{oss}$			270				
Reverse Transfer Capacitance	$C_{rss}$			220				
Total Gate Charge <sup>2</sup>	$Q_{g(VGS=10V)}$	$V_{DS} = 50V, I_D = 20A$		102		nC		
	$Q_{g(VGS=4.5V)}$			54				
Gate-Source Charge <sup>2</sup>	$Q_{gs}$			14				
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$			35				
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$		$V_{DD} = 50V$ $I_D \cong 20A, V_{GS} = 10V, R_{GS} = 6\Omega$		29			nS
Rise Time <sup>2</sup>	$t_r$				50			
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$			147				
Fall Time <sup>2</sup>	$t_f$			81				
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (<math>T_J = 25\text{ }^\circ\text{C}</math>)</b>								
Continuous Current	$I_S$			69		A		
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = 20A, V_{GS} = 0V$		1.2		V		
Reverse Recovery Time	$t_{rr}$	$I_F = 20A, di_F/dt = 100A / \mu S$		38		nS		
Reverse Recovery Charge	$Q_{rr}$			46		nC		

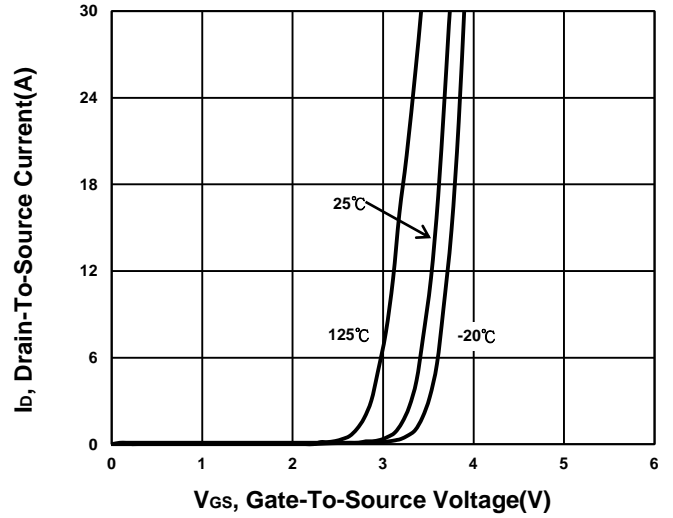
<sup>1</sup>Pulse test : Pulse Width  $\leq 300\ \mu\text{sec}$ , Duty Cycle  $\leq 2\%$ .

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

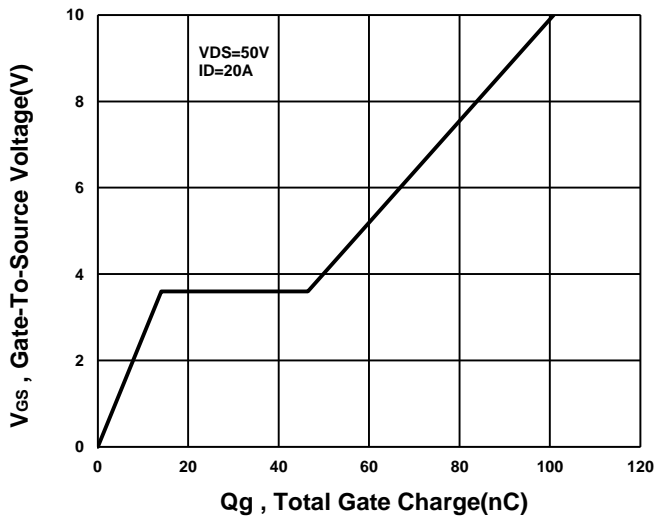
**Output Characteristics**



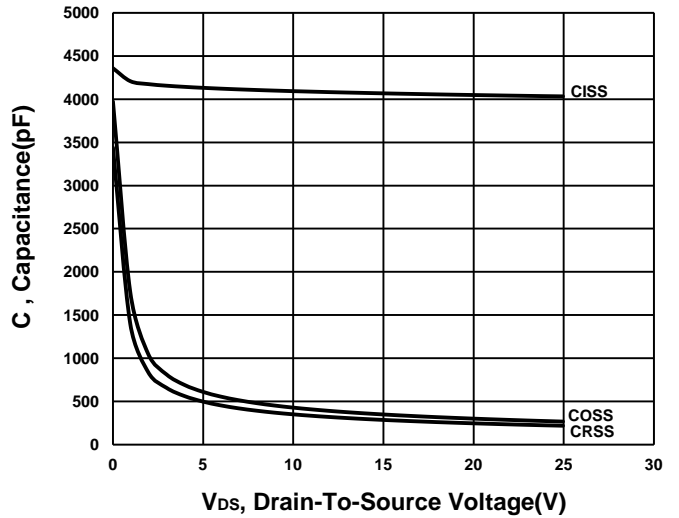
**Transfer Characteristics**



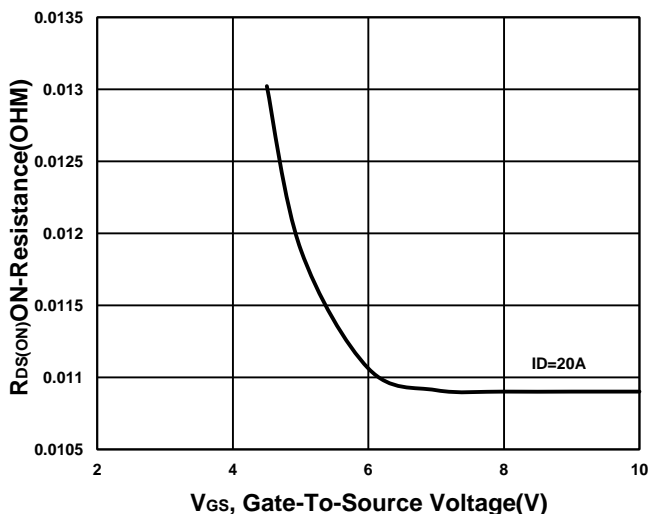
**Gate charge Characteristics**



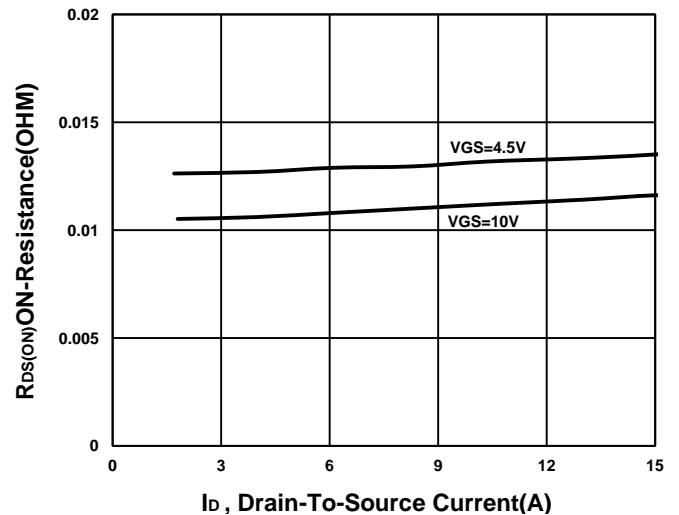
**Capacitance Characteristic**



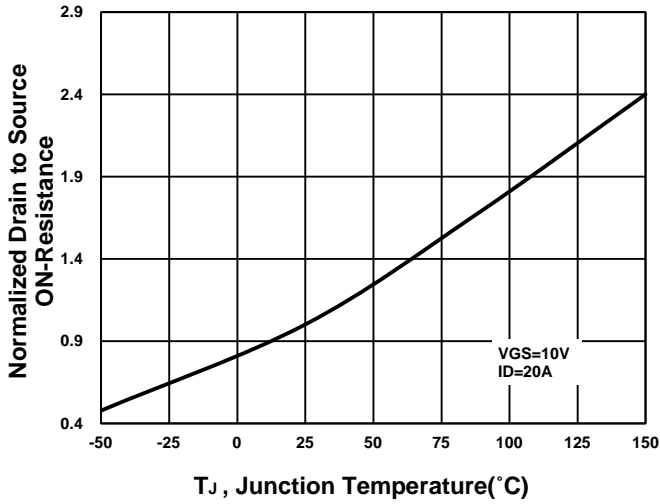
**On-Resistance VS Gate-To-Source**



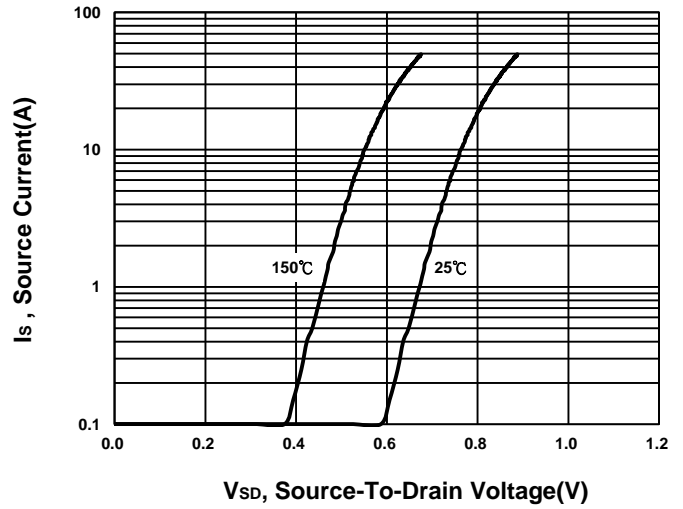
**On-Resistance VS Drain Current**



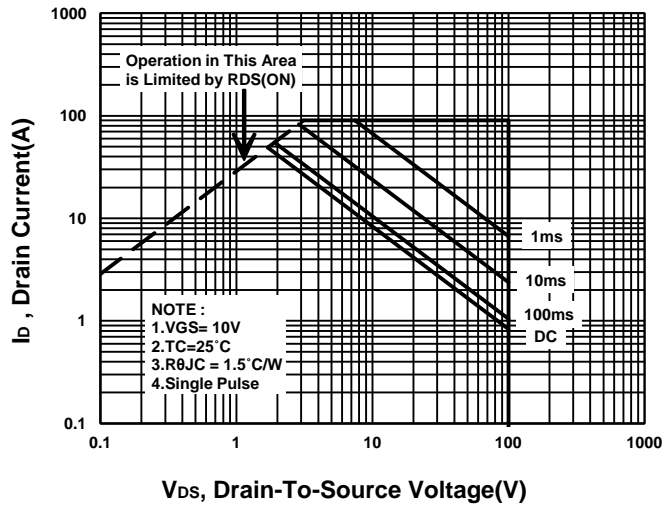
**On-Resistance VS Temperature**



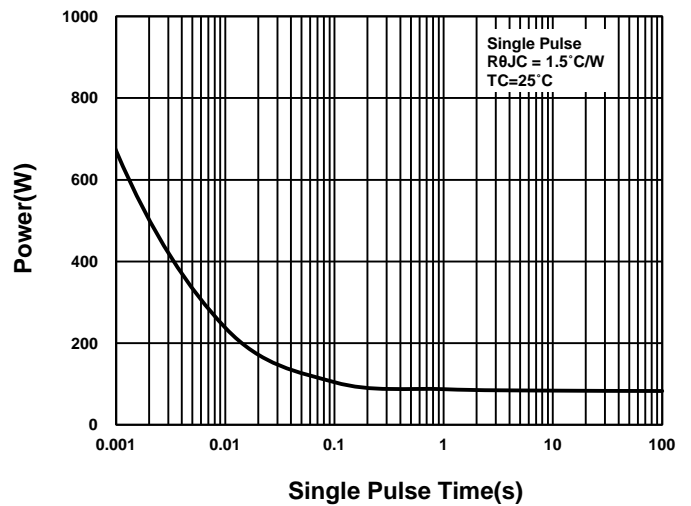
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

