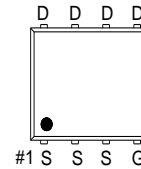
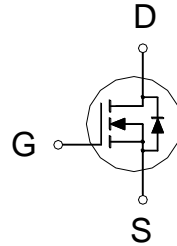




**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
30V	9.8mΩ	32A



G : GATE  
D : DRAIN  
S : SOURCE

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

PARAMETERS/TEST CONDITIONS	SYMBOL	LIMITS	UNITS
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current <sup>3</sup>	$I_D$	$T_C = 25\text{ °C}$	32
		$T_C = 100\text{ °C}$	20
Continuous Drain Current	$I_D$	$T_A = 25\text{ °C}$	14
		$T_A = 70\text{ °C}$	11
Pulsed Drain Current <sup>1</sup>	$I_{DM}$	90	A
Avalanche Current	$I_{AS}$	18.5	
Avalanche Energy	$E_{AS}$	17	mJ
Power Dissipation	$P_D$	$T_C = 25\text{ °C}$	17.8
		$T_C = 100\text{ °C}$	7
Power Dissipation <sup>4</sup>	$P_D$	$T_A = 25\text{ °C}$	3.5
		$T_A = 70\text{ °C}$	2.3
Operating 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>	$R_{\theta JA}$		35	°C / W
Junction-to-Ambient <sup>2</sup>	$R_{\theta JA}$		75	
Junction-to-Case	$R_{\theta JC}$		7	

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

<sup>2</sup>The value of  $R_{\theta JA}$  is measured with the device mounted on 1in<sup>2</sup> FR-4 board with 2oz. Copper, in a still air environment with  $T_A = 25\text{ °C}$ .

<sup>3</sup>Package limitation current is 16A

<sup>4</sup>The Power dissipation is based on  $R_{\theta JA} t \leq 10s$  value.

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

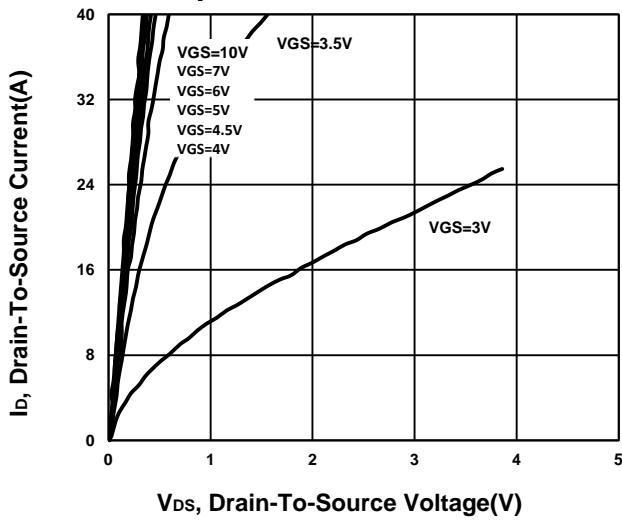
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	30			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	1.3	1.75	2.3	
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 24V, V <sub>GS</sub> = 0V			1	μA
		V <sub>DS</sub> = 20V, V <sub>GS</sub> = 0V, T <sub>J</sub> = 55 °C			10	
Drain-Source On-State Resistance <sup>1</sup>	R <sub>DS(ON)</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 9A		10.2	14	mΩ
		V <sub>GS</sub> = 10V, I <sub>D</sub> = 9A		7.8	9.8	
Forward Transconductance <sup>1</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 10V, I <sub>D</sub> = 9A		35		S
<b>DYNAMIC</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 15V, f = 1MHz		620		pF
Output Capacitance	C <sub>oss</sub>			108		
Reverse Transfer Capacitance	C <sub>rss</sub>			77		
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 0V, f = 1MHz		2.5		Ω
Total Gate Charge <sup>2</sup>	Q <sub>g(VGS=10V)</sub>	V <sub>DS</sub> = 15V, I <sub>D</sub> = 9A		14		nC
	Q <sub>g(VGS=4.5V)</sub>			8		
Gate-Source Charge <sup>2</sup>	Q <sub>gs</sub>			2		
Gate-Drain Charge <sup>2</sup>	Q <sub>gd</sub>			3.8		
Turn-On Delay Time <sup>2</sup>	t <sub>d(on)</sub>		V <sub>DD</sub> = 15V I <sub>D</sub> ≅ 9A, V <sub>GEN</sub> = 10V, R <sub>G</sub> = 6Ω		13	
Rise Time <sup>2</sup>	t <sub>r</sub>			37		
Turn-Off Delay Time <sup>2</sup>	t <sub>d(off)</sub>			48		
Fall Time <sup>2</sup>	t <sub>f</sub>			25		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>J</sub> = 25 °C)</b>						
Continuous Current <sup>3</sup>	I <sub>S</sub>				16	A
Forward Voltage <sup>1</sup>	V <sub>SD</sub>	I <sub>F</sub> = 9A, V <sub>GS</sub> = 0V			1.1	V
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 9A, di <sub>F</sub> /dt = 100A / μS		12		nS
Reverse Recovery Charge	Q <sub>rr</sub>			3		nC

<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

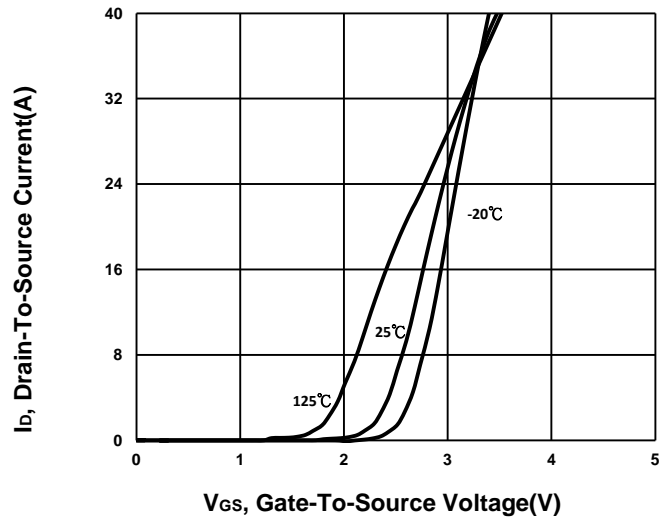
<sup>2</sup>Independent of operating temperature.

<sup>3</sup>Package limitation current is 16A

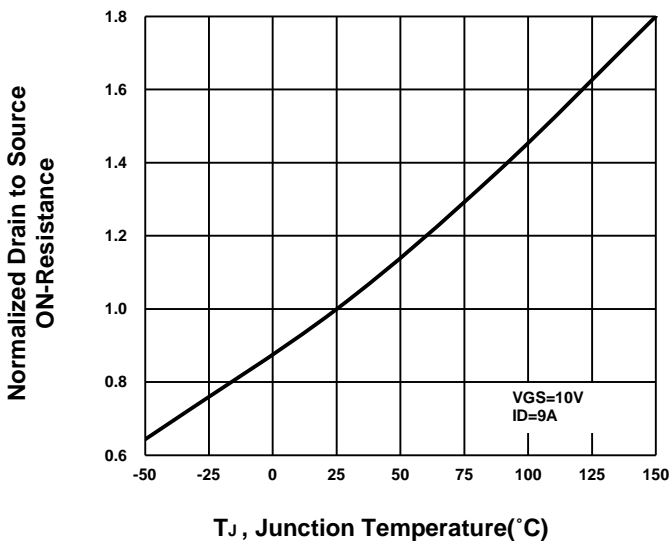
**Output Characteristics**



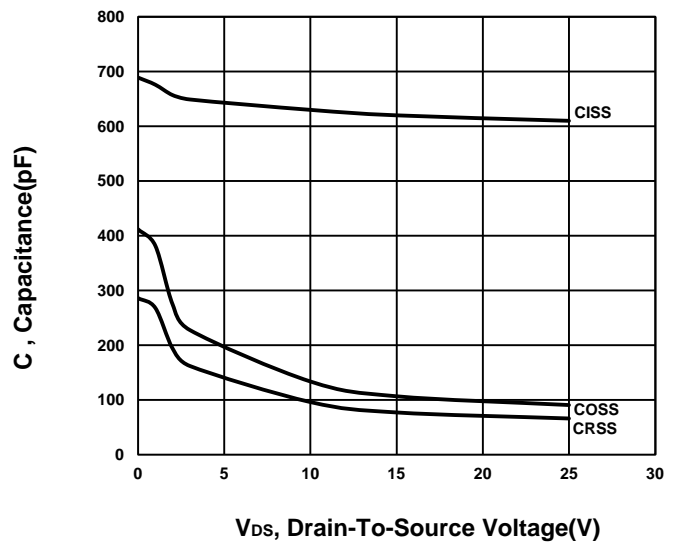
**Transfer Characteristics**



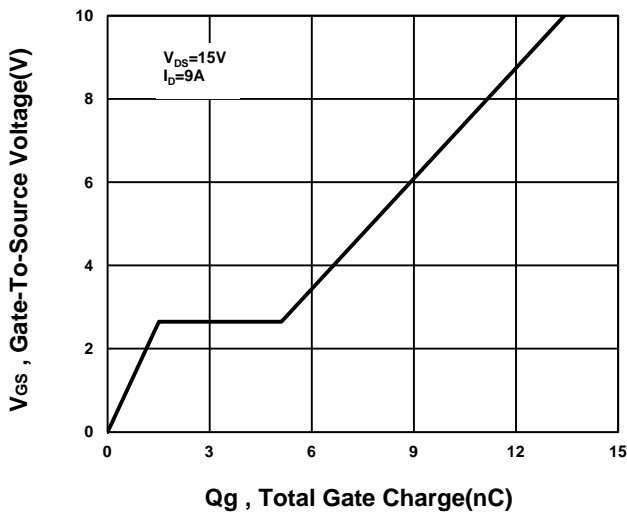
**On-Resistance VS Temperature**



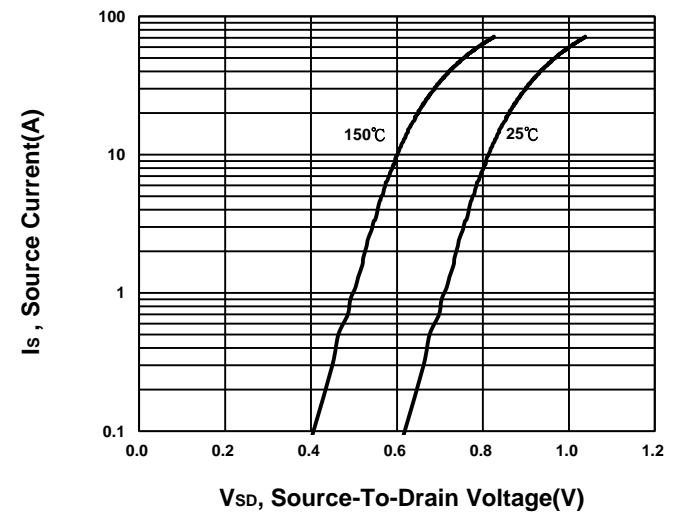
**Capacitance Characteristic**



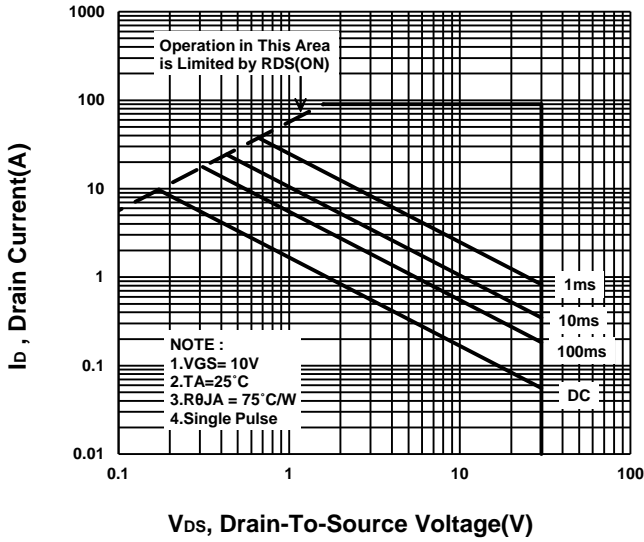
**Gate charge Characteristics**



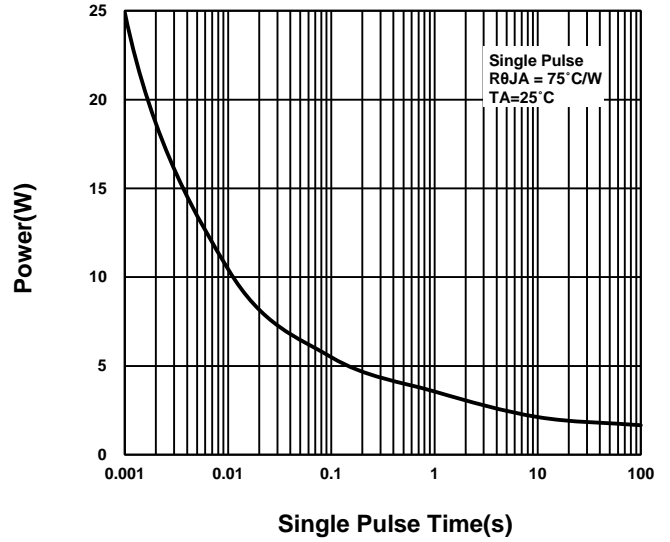
**Source-Drain Diode Forward Voltage**



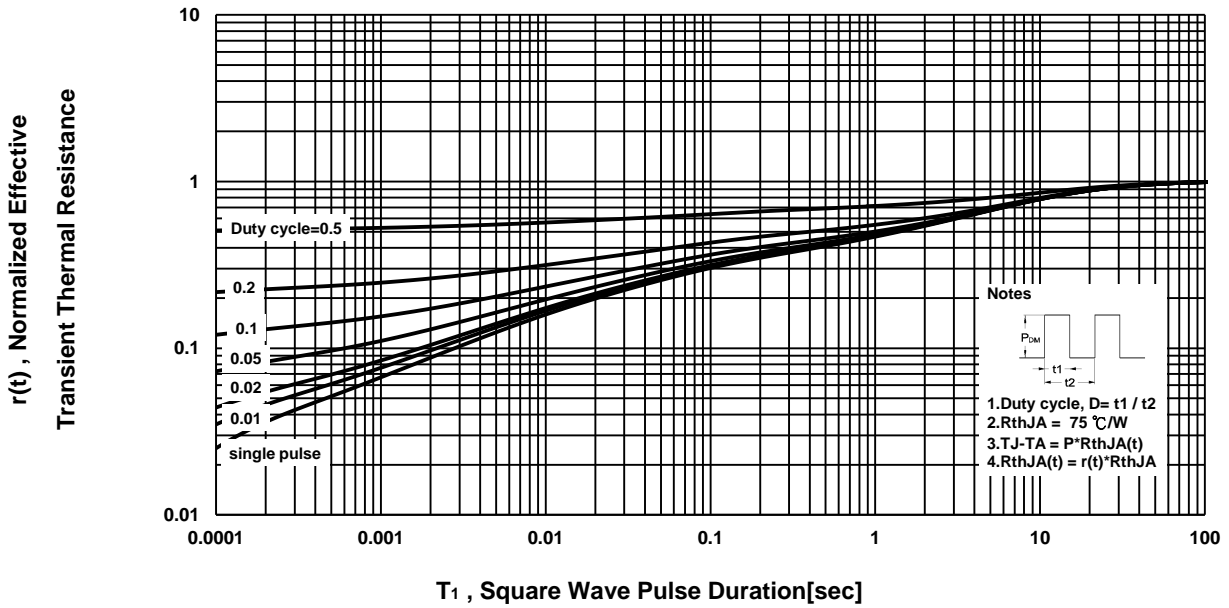
**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**



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