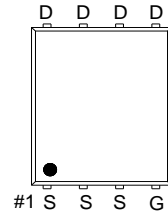
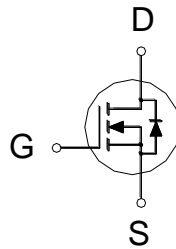




**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
100V	4.2m $\Omega$	127A



G. GATE  
D. DRAIN  
S. 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	$T_C = 25\text{ }^\circ\text{C}$	$I_D$	127	A
	$T_C = 100\text{ }^\circ\text{C}$		90	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	223	
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	$I_D$	23	
	$T_A = 70\text{ }^\circ\text{C}$		19.7	
Avalanche Current		$I_{AS}$	27	
Avalanche Energy	$L = 1\text{mH}$	$E_{AS}$	364	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	$P_D$	150	W
	$T_C = 100\text{ }^\circ\text{C}$		75	
Power Dissipation <sup>3</sup>	$T_A = 25\text{ }^\circ\text{C}$	$P_D$	5.1	W
	$T_A = 70\text{ }^\circ\text{C}$		3.6	
Operating Junction & Storage Temperature Range		$T_j, T_{stg}$	-55 to 175	$^\circ\text{C}$

**THERMAL RESISTANCE RATINGS**

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient <sup>2</sup>	$t \leq 10\text{s}$	$R_{\theta JA}$		29	$^\circ\text{C} / \text{W}$
Junction-to-Ambient <sup>2</sup>	Steady-State	$R_{\theta JA}$		56	
Junction-to-Case	Steady-State	$R_{\theta JC}$		1	

<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  $T_A = 25^\circ\text{C}$ .

<sup>3</sup>The Power dissipation is based on  $R_{\theta JA} t \leq 10\text{s}$  value.

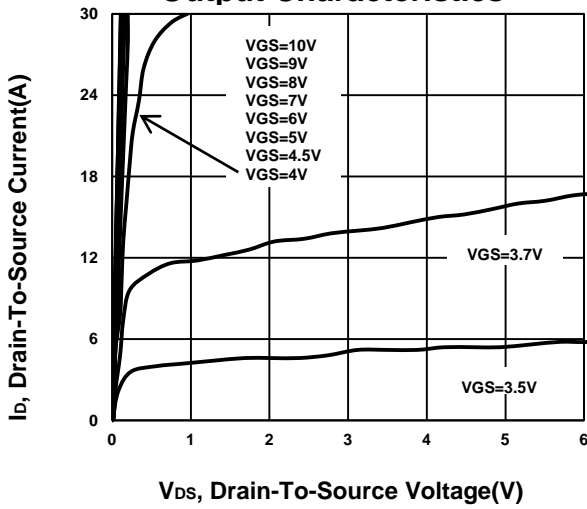
**ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25 °C, Unless Otherwise Noted)**

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	100			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	2	3	4	
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> = 100V, V <sub>GS</sub> = 0V			1	μA
		V <sub>DS</sub> = 100V, 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> = 10V, I <sub>D</sub> = 20A		3.4	4.2	mΩ
Forward Transconductance <sup>1</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 5V, I <sub>D</sub> = 20A		40		S
<b>DYNAMIC</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 50V, f = 1MHz	3299	4124	4948	pF
Output Capacitance	C <sub>oss</sub>		621	777	932	
Reverse Transfer Capacitance	C <sub>rss</sub>		5.8	9.7	13.6	
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 0V, f = 1MHz	0.6	1.1	1.7	Ω
Total Gate Charge <sup>2</sup>	Q <sub>g</sub>	V <sub>DS</sub> = 50V, V <sub>GS</sub> = 10V, I <sub>D</sub> = 20A	61	77	92	nC
Gate-Source Charge <sup>2</sup>	Q <sub>gs</sub>		13	16	19	
Gate-Drain Charge <sup>2</sup>	Q <sub>gd</sub>		14	24	34	
Turn-On Delay Time <sup>2</sup>	t <sub>d(on)</sub>	V <sub>DS</sub> = 50V, I <sub>D</sub> ≅ 20A, V <sub>GS</sub> = 10V, R <sub>GEN</sub> = 6Ω		26		nS
Rise Time <sup>2</sup>	t <sub>r</sub>			76		
Turn-Off Delay Time <sup>2</sup>	t <sub>d(off)</sub>			76		
Fall Time <sup>2</sup>	t <sub>f</sub>			102		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>J</sub> = 25 °C)</b>						
Continuous Current	I <sub>S</sub>				125	A
Forward Voltage <sup>1</sup>	V <sub>SD</sub>	I <sub>F</sub> = 20A, V <sub>GS</sub> = 0V			1.2	V
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 20A, dI <sub>F</sub> /dt = 100A / μS	31	62	93	nS
Reverse Recovery Charge	Q <sub>rr</sub>		51	102	153	nC

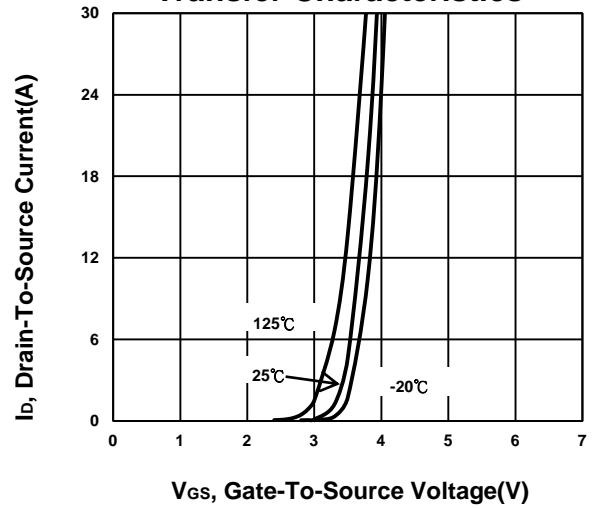
<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

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

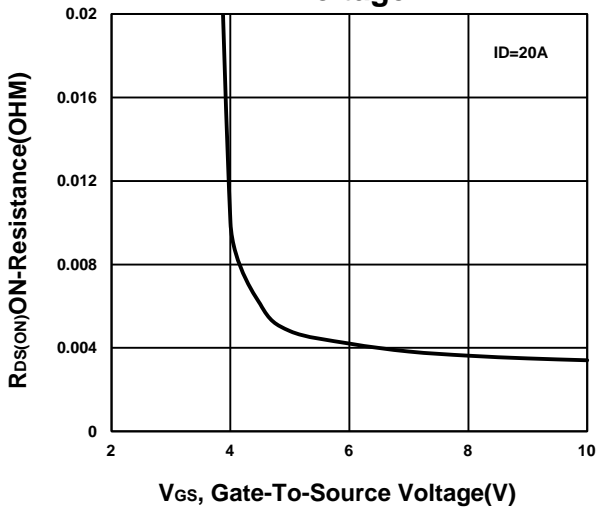
**Output Characteristics**



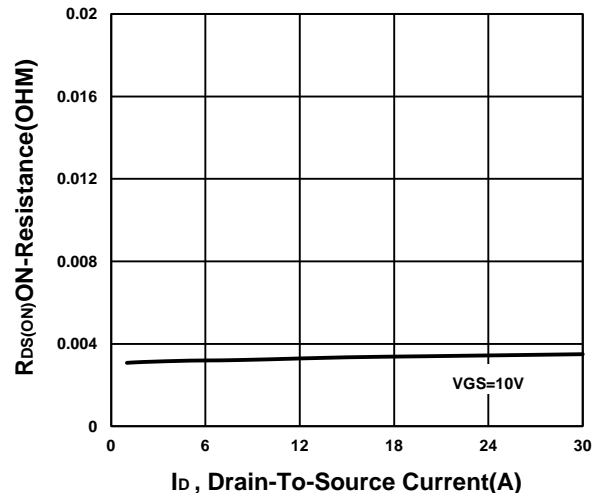
**Transfer Characteristics**



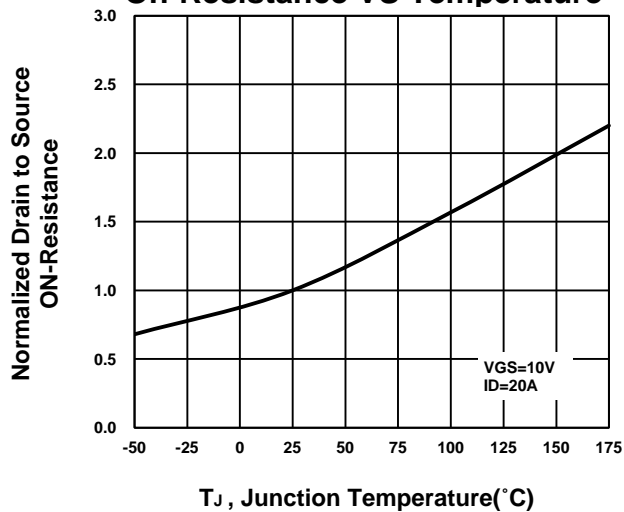
**On-Resistance VS Gate-To-Source Voltage**



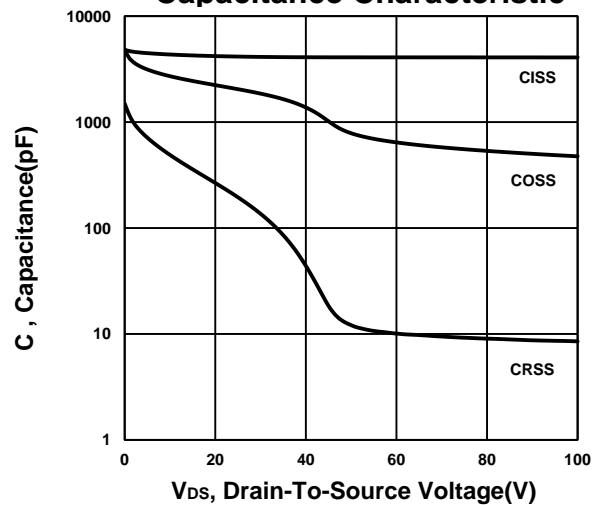
**On-Resistance VS Drain Current**

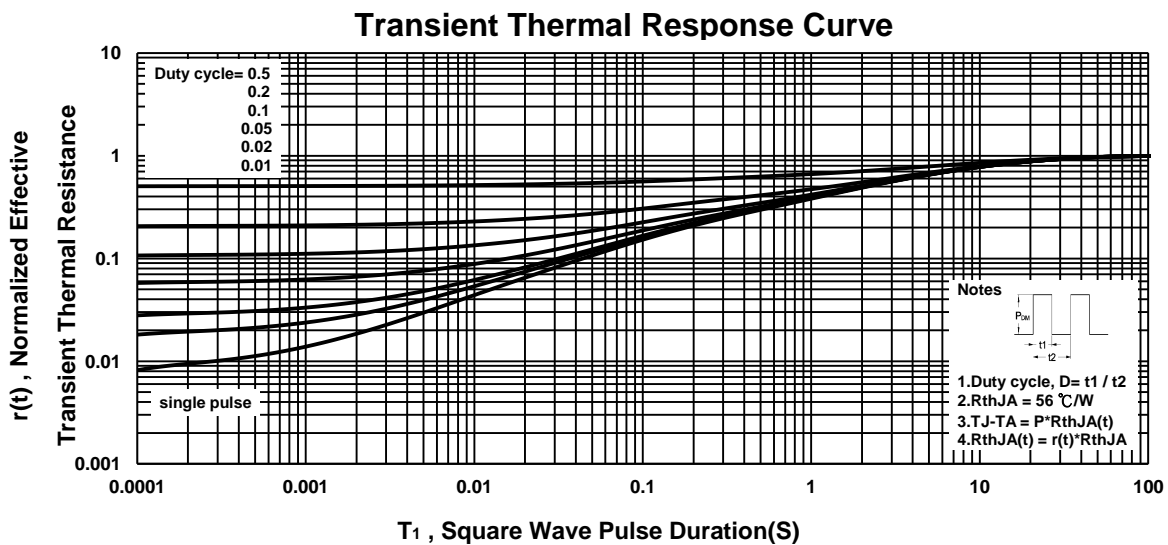
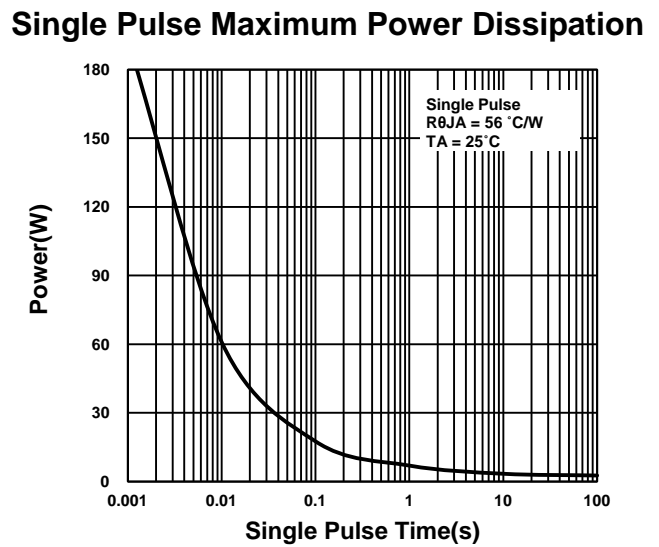
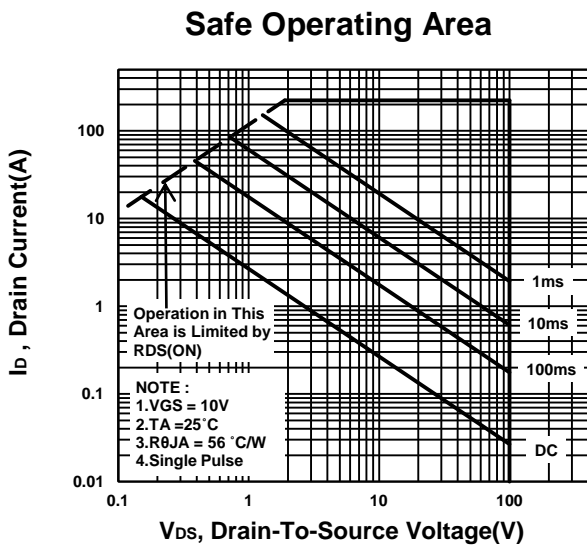
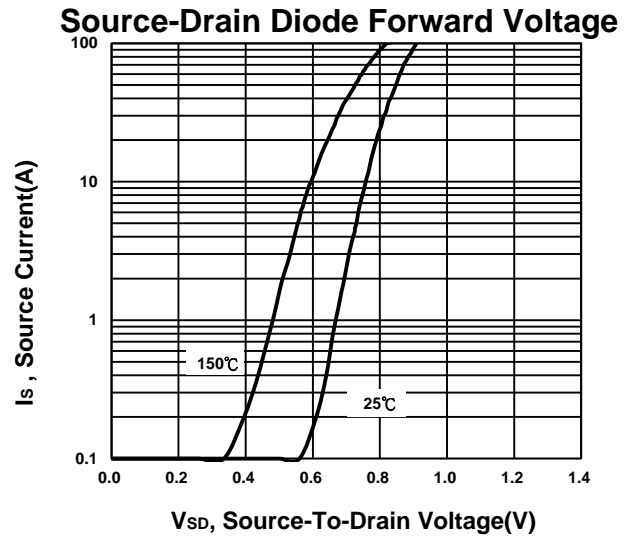
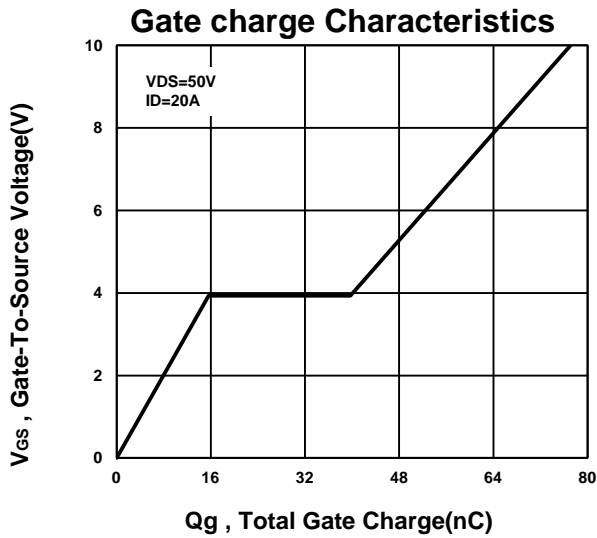


**On-Resistance VS Temperature**

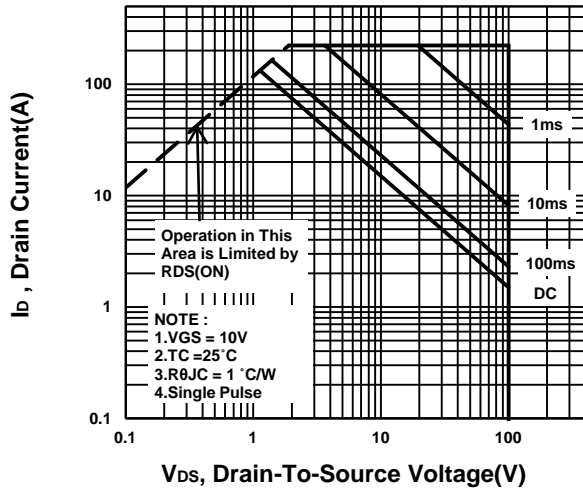


**Capacitance Characteristic**

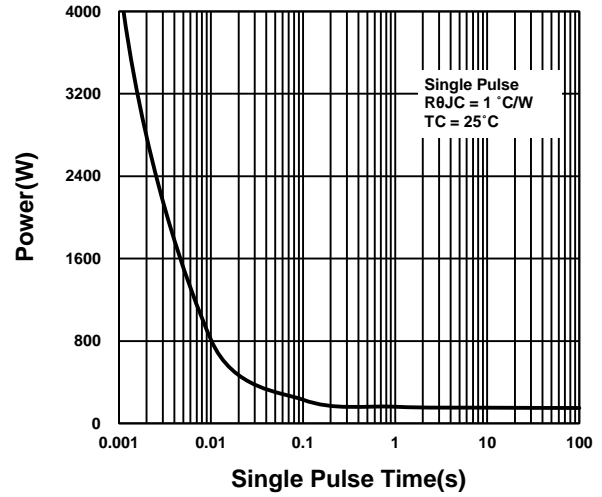




**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

