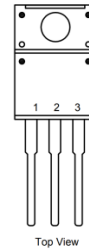
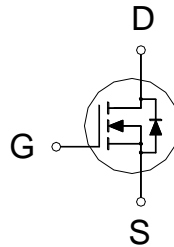




**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
600V	196mΩ	20A



- 1. GATE
- 2. DRAIN
- 3. SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		$V_{DS}$	600	V
Gate-Source Voltage		$V_{GS}$	±30	V
Continuous Drain Current <sup>2</sup>	$T_C = 25^\circ\text{C}$	$I_D$	20	A
	$T_C = 100^\circ\text{C}$		12.7	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	60	
Avalanche Current <sup>3</sup>		$I_{AS}$	2.8	
Avalanche Energy <sup>3</sup>		$E_{AS}$	294	mJ
Power Dissipation	$T_C = 25^\circ\text{C}$	$P_D$	33	W
	$T_C = 100^\circ\text{C}$		13	
Operating Junction & Storage Temperature Range		$T_j, T_{stg}$	-55 to 150	°C

**THERMAL RESISTANCE RATINGS**

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		3.75	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

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

<sup>2</sup>Ensure that the channel temperature does not exceed 150°C.

<sup>3</sup> $V_{DD} = 50\text{V}$ ,  $L = 75\text{mH}$ , starting  $T_j = 25^\circ\text{C}$ .

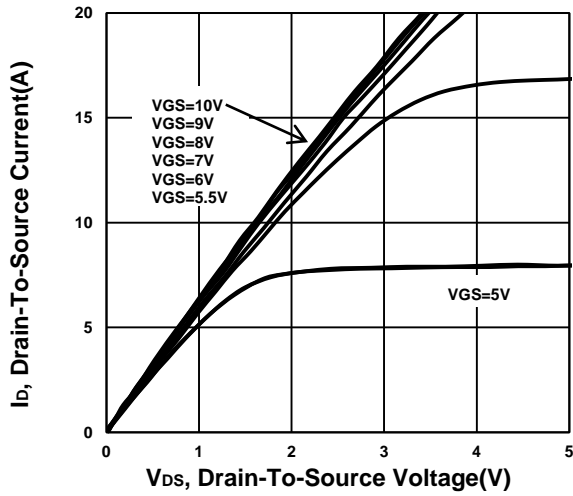
**ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25 ° C, Unless Otherwise Noted)**

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			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	600			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	2	3.3	4	
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±30V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 600V, V <sub>GS</sub> = 0V			1	μA
		V <sub>DS</sub> = 480V, V <sub>GS</sub> = 0V, T <sub>J</sub> = 100 ° C			10	
Drain-Source On-State Resistance <sup>1</sup>	R <sub>DS(ON)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 10A		164	196	mΩ
Forward Transconductance <sup>1</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 10V, I <sub>D</sub> = 10A		17		S
<b>DYNAMIC</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 100V, f = 250KHz		1406		pF
Output Capacitance	C <sub>oss</sub>			75		
Reverse Transfer Capacitance	C <sub>rss</sub>			10.6		
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 0V, f = 1MHz		8.1		Ω
Total Gate Charge <sup>2</sup>	Q <sub>g</sub>	V <sub>DS</sub> = 480V, V <sub>GS</sub> = 10V, I <sub>D</sub> = 10A		39		nC
Gate-Source Charge <sup>2</sup>	Q <sub>gs</sub>			8		
Gate-Drain Charge <sup>2</sup>	Q <sub>gd</sub>			16		
Turn-On Delay Time <sup>2</sup>	t <sub>d(on)</sub>	V <sub>DD</sub> = 300V, I <sub>D</sub> ≅ 10A, V <sub>GS</sub> = 10V, R <sub>GEN</sub> = 25Ω		33		nS
Rise Time <sup>2</sup>	t <sub>r</sub>			47		
Turn-Off Delay Time <sup>2</sup>	t <sub>d(off)</sub>			157		
Fall Time <sup>2</sup>	t <sub>f</sub>			50		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>J</sub> = 25 ° C)</b>						
Continuous Current	I <sub>S</sub>				20	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> = 10A, di <sub>F</sub> /dt = 100A/μs		317		nS
Reverse Recovery Charge	Q <sub>rr</sub>				4.2	

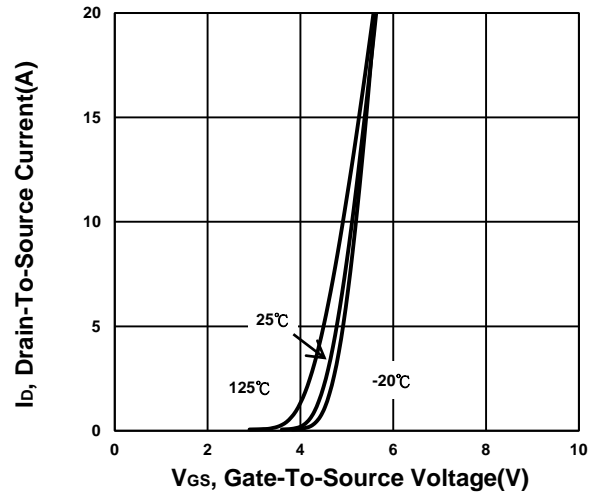
<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

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

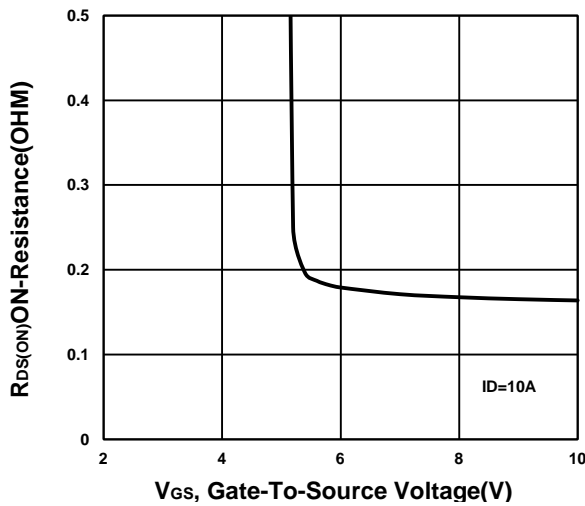
**Output Characteristics**



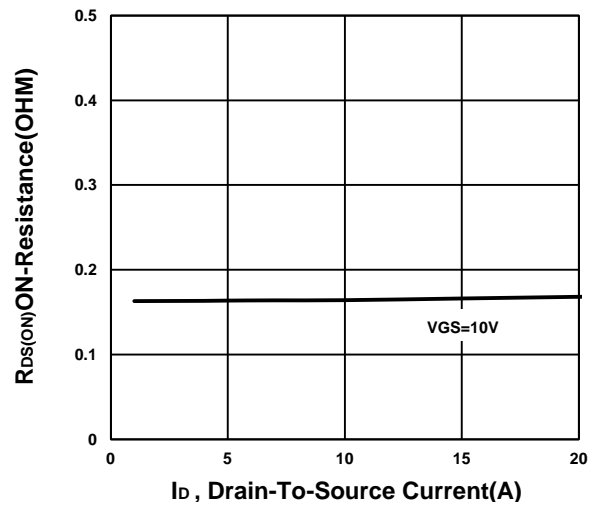
**Transfer Characteristics**



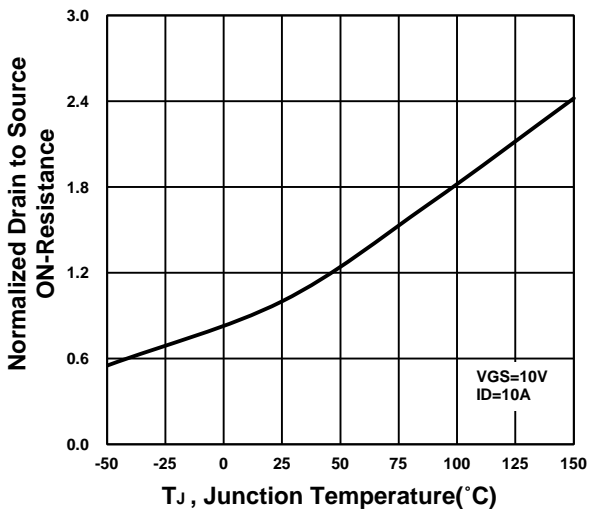
**On-Resistance VS Gate-To-Source Voltage**



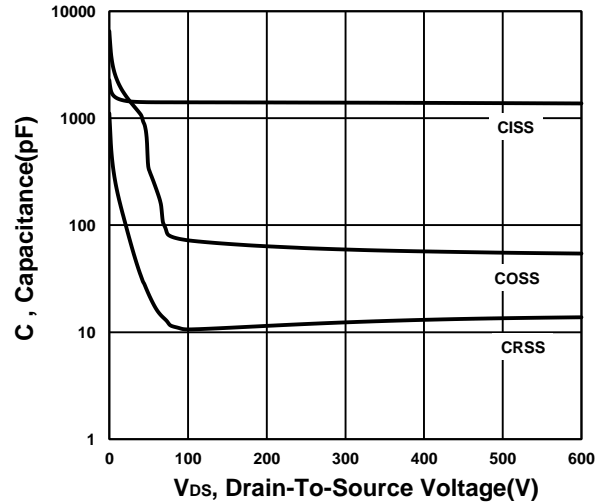
**On-Resistance VS Drain Current**



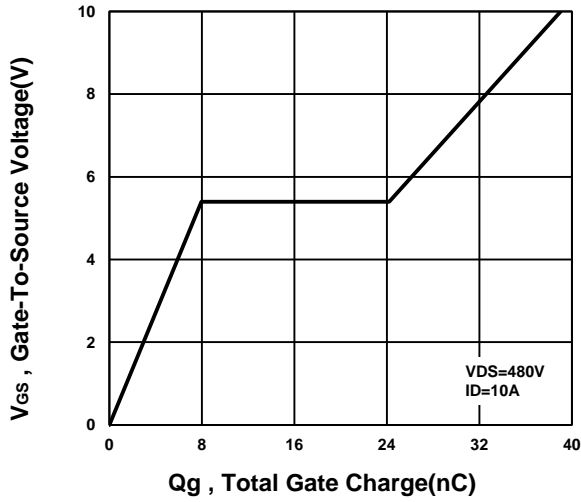
**On-Resistance VS Temperature**



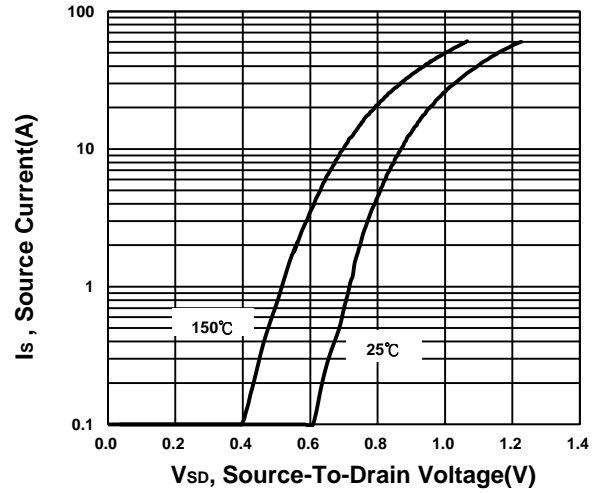
**Capacitance Characteristic**



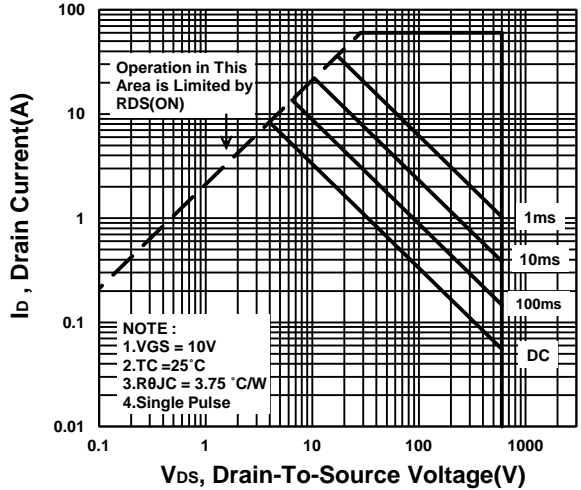
**Gate charge Characteristics**



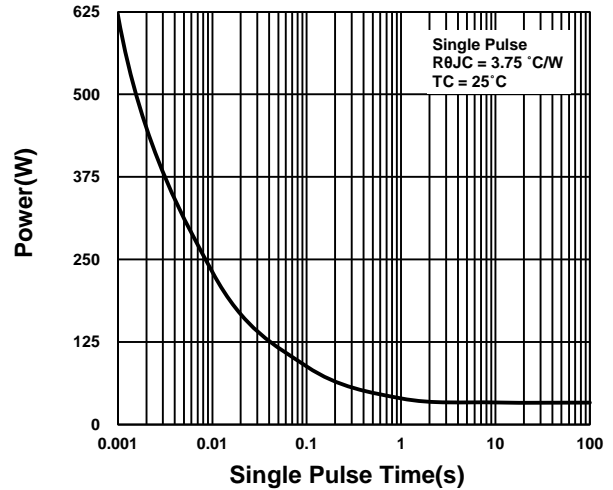
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

