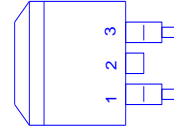
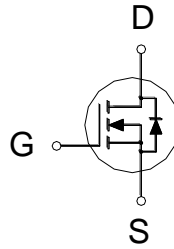




- 1. GATE
- 2. DRAIN
- 3. SOURCE

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
100V	4.4mΩ	139A



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}	±20	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	I_D	139	A
	$T_C = 100\text{ }^\circ\text{C}$		98	
Pulsed Drain Current ¹		I_{DM}	350	
Avalanche Current		I_{AS}	28	
Avalanche Energy	$L = 1\text{mH}$	E_{AS}	392	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	187	W
	$T_C = 100\text{ }^\circ\text{C}$		93	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 175	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		0.8	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

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

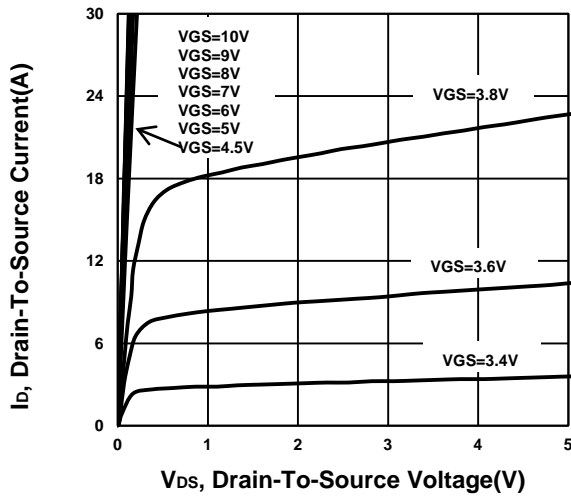
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	2	2.5	4	V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 100\text{V}, V_{GS} = 0\text{V}$			1	μA
		$V_{DS} = 100\text{V}, V_{GS} = 0\text{V}, T_J = 125\text{ }^\circ\text{C}$			100	

Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 20A$	3.6	4.4	$m\Omega$
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 20A$	70		S
DYNAMIC					
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 50V, f = 1MHz$	4145		pF
Output Capacitance	C_{oss}		762		
Reverse Transfer Capacitance	C_{rss}		10		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$	1		Ω
Total Gate Charge ²	Q_g	$V_{GS} = 10V, V_{DS} = 50V, I_D = 20A$	75		nC
Gate-Source Charge ²	Q_{gs}		17		
Gate-Drain Charge ²	Q_{gd}		23		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = 50V,$ $I_D \cong 20A, V_{GS} = 10V, R_{GEN} = 6\Omega$	22		nS
Rise Time ²	t_r		56		
Turn-Off Delay Time ²	$t_{d(off)}$		73		
Fall Time ²	t_f		79		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)					
Continuous Current	I_S			139	A
Forward Voltage ¹	V_{SD}	$I_F = 20A, V_{GS} = 0V$		1.2	V
Reverse Recovery Time	t_{rr}	$I_F = 20A, di_F/dt = 100A/\mu s$		63	nS
Reverse Recovery Charge	Q_{rr}			95	nC

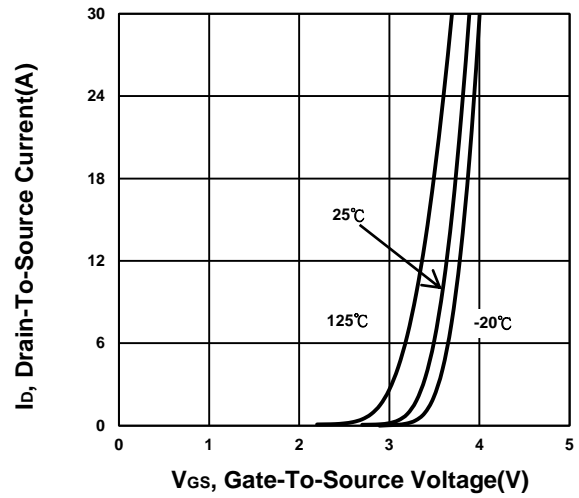
¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

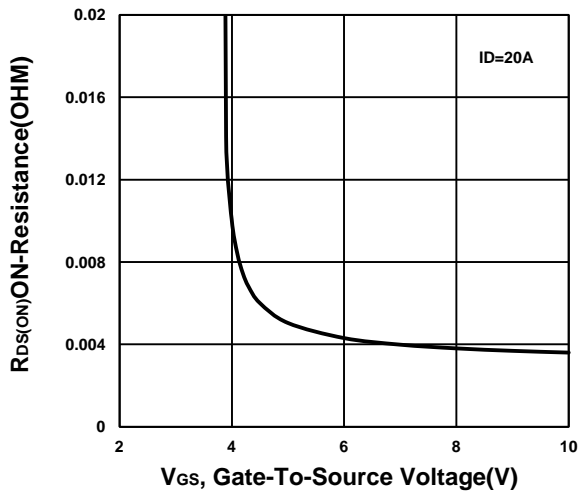
Output Characteristics



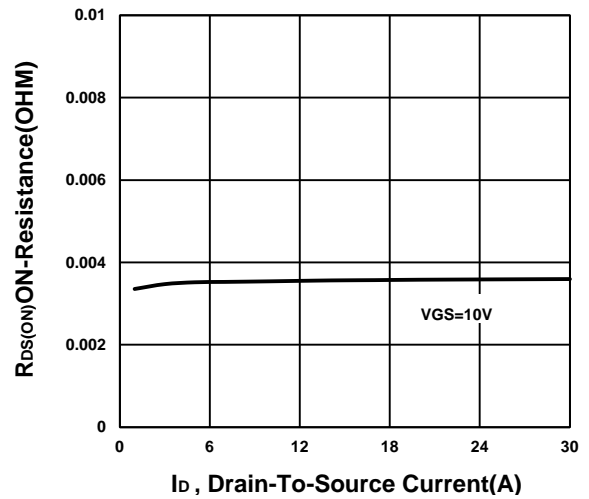
Transfer Characteristics



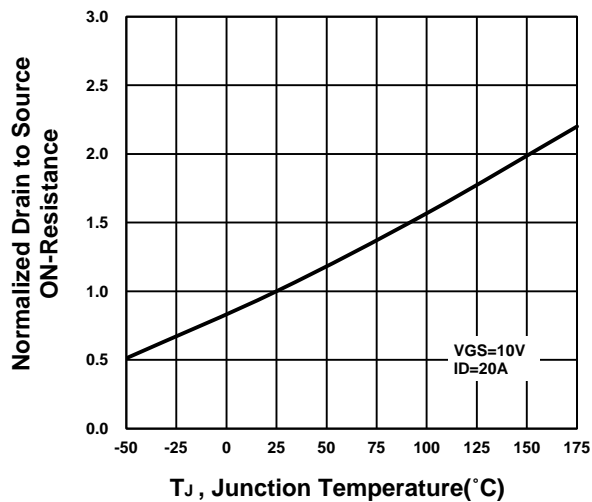
On-Resistance VS Gate-To-Source Voltage



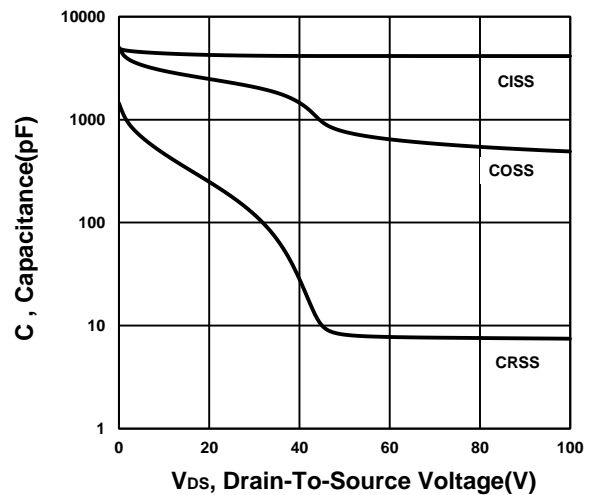
On-Resistance VS Drain Current



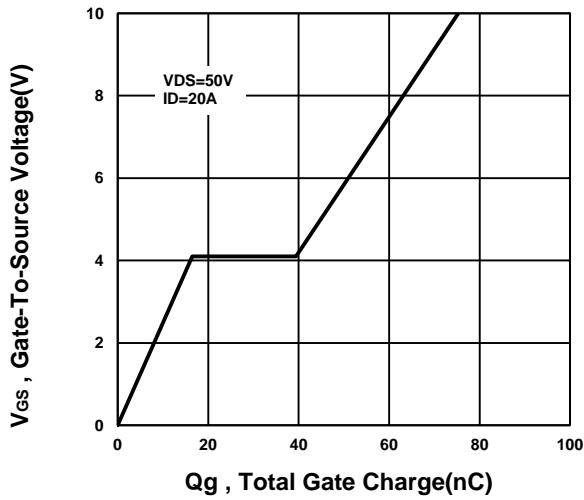
On-Resistance VS Temperature



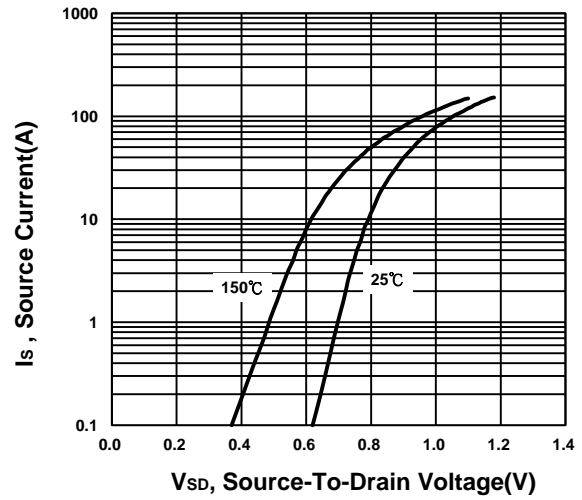
Capacitance Characteristic



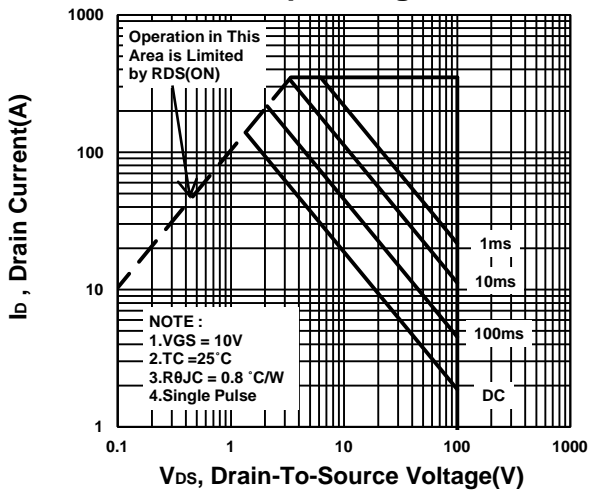
Gate charge Characteristics



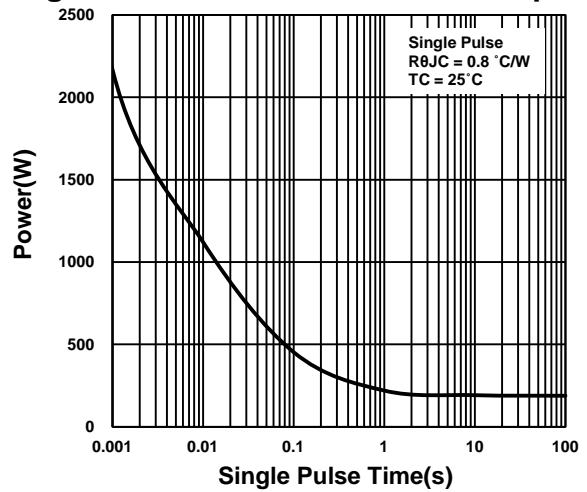
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

