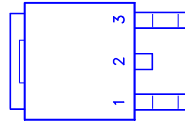
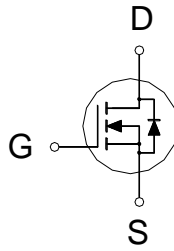




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
100V	14mΩ	45A



1.GATE
2.DRAIN
3.SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ °C}$ 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	$T_C = 25\text{ °C}$	I_D	45	A
	$T_C = 100\text{ °C}$		32	
Pulsed Drain Current ¹		I_{DM}	150	
Avalanche Current		I_{AS}	12.4	
Avalanche Energy	L = 1mH	E_{AS}	76.8	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	65	W
	$T_C = 100\text{ °C}$		33	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 175	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient ²	Steady-State	$R_{\theta JA}$		62.5	°C / W
Junction-to-Case	Steady-State	$R_{\theta JC}$		2.3	

¹Pulse width limited by maximum junction temperature.

²The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25\text{ °C}$.

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

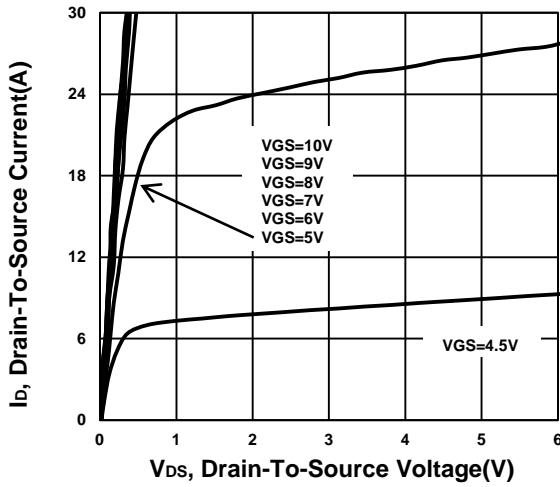
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2	3.1	4	V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			±100	nA

Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$			1	μA
		$V_{DS} = 100V, V_{GS} = 0V, T_J = 55^\circ C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 20A$		10	14	$m\Omega$
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 4A$		15		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 50V, f = 1MHz$	1196	1495	1794	pF
Output Capacitance	C_{oss}		222	278	333	
Reverse Transfer Capacitance	C_{rss}		7	12	17	
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$	0.1	0.6	1.2	Ω
Total Gate Charge ²	Q_g	$V_{DS} = 50V, V_{GS} = 10V, I_D = 20A$	20	26	31.2	nC
Gate-Source Charge ²	Q_{gs}		4.6	5.8	7	
Gate-Drain Charge ²	Q_{gd}		5.3	8.8	12.3	
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 50V, I_D \cong 20A, V_{GS} = 10V, R_{GEN} = 6\Omega$		13		nS
Rise Time ²	t_r			24		
Turn-Off Delay Time ²	$t_{d(off)}$			27		
Fall Time ²	t_f			28		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)						
Continuous Current	I_S				45	A
Forward Voltage ¹	V_{SD}	$I_F = 20A, V_{GS} = 0V$			1.2	V
Reverse Recovery Time	t_{rr}	$I_F = 20A, di_F/dt = 100A / \mu S$		43		nS
Reverse Recovery Charge	Q_{rr}			50		nC

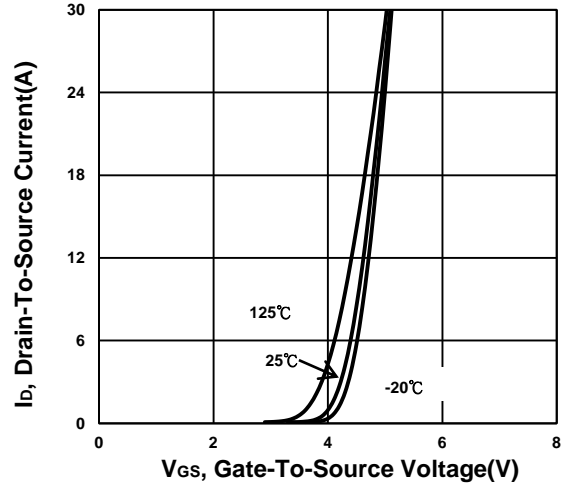
¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

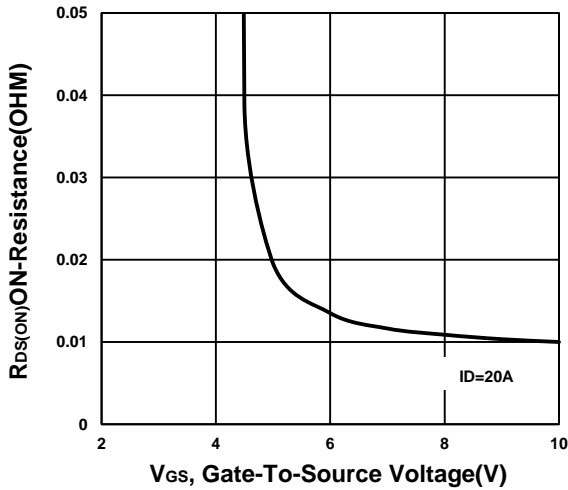
Output Characteristics



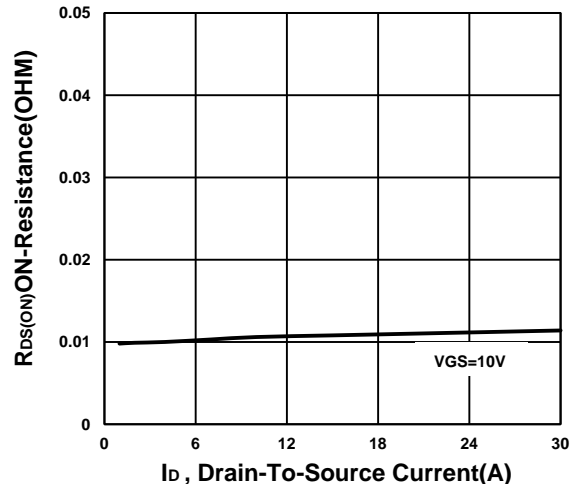
Transfer Characteristics



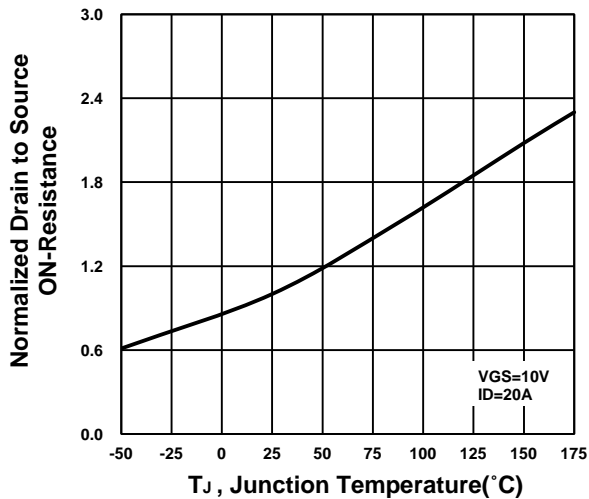
On-Resistance VS Gate-To-Source Voltage



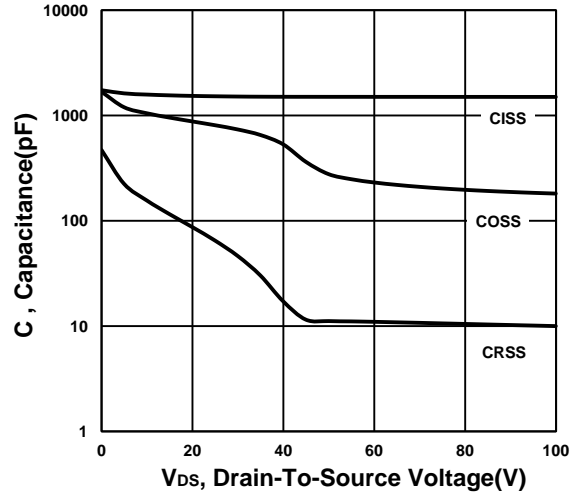
On-Resistance VS Drain Current



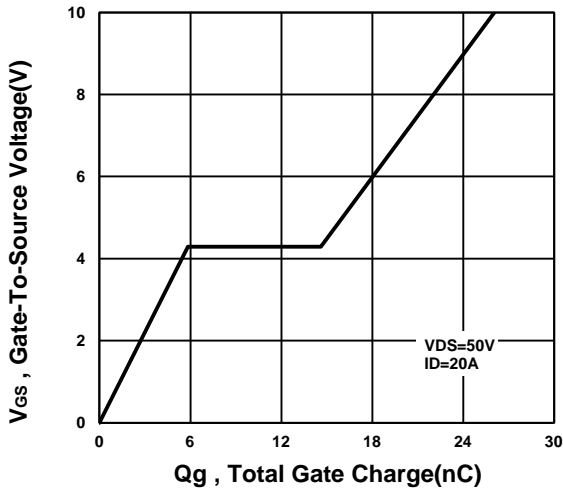
On-Resistance VS Temperature



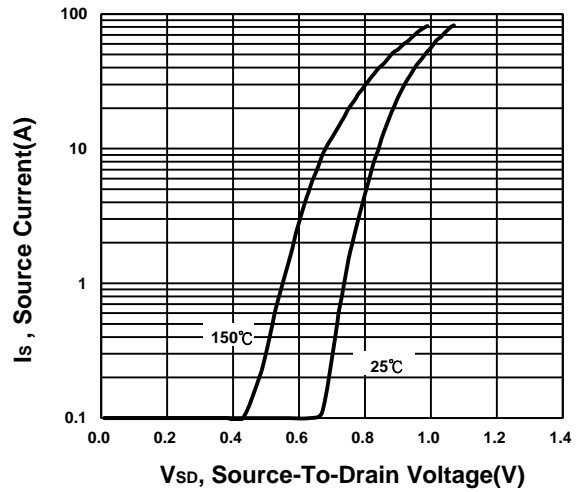
Capacitance Characteristic



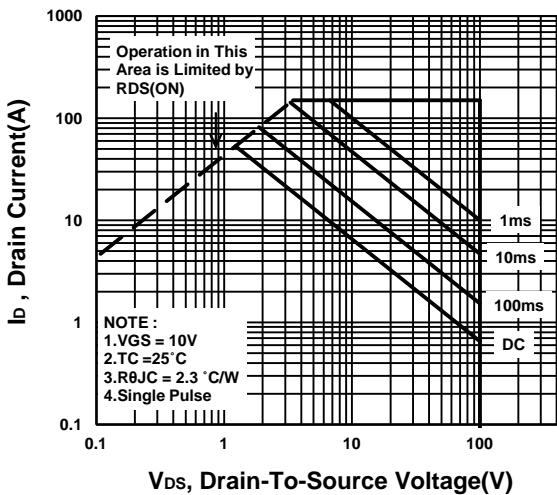
Gate charge Characteristics



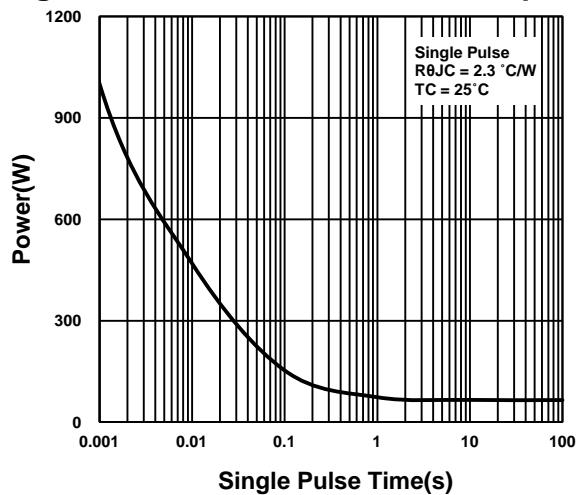
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

