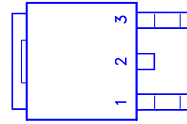
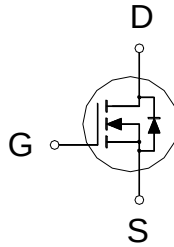




PRODUCT SUMMARY

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



1.GATE
2.DRAIN
3.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}	± 20	V
Continuous Drain Current	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	45	A
	$T_C = 100\text{ }^{\circ}\text{C}$		32	
Pulsed Drain Current ¹		I_{DM}	150	
Avalanche Current		I_{AS}	12.4	
Avalanche Energy	$L = 1\text{mH}$	E_{AS}	76.8	mJ
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	65	W
	$T_C = 100\text{ }^{\circ}\text{C}$		33	
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 ²	Steady-State	$R_{\theta JA}$		62.5	$^{\circ}\text{C} / \text{W}$
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 $T_A = 25^{\circ}\text{C}$.

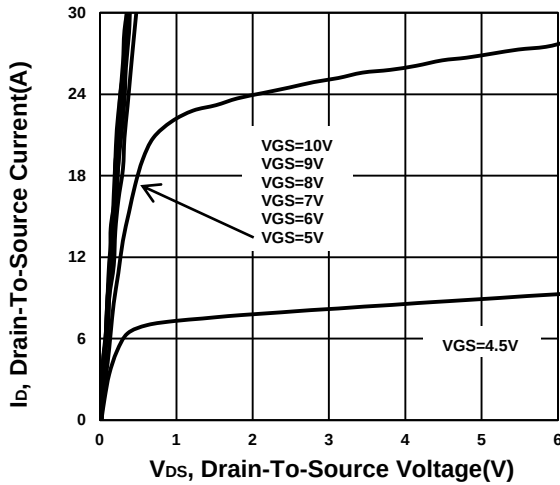
ELECTRICAL CHARACTERISTICS ($T_J = 25\text{ }^{\circ}\text{C}$, Unless Otherwise Noted)

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	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.4	3.1	4	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA

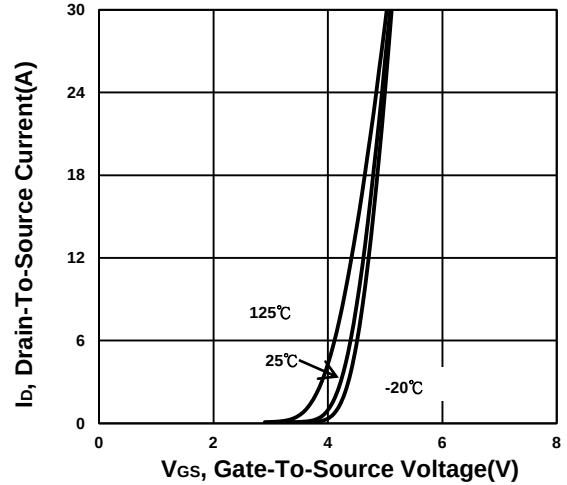
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 100V, V _{GS} = 0V			1	μA
		V _{DS} = 100V, V _{GS} = 0V, T _J = 55 °C			10	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 10V, I _D = 20A		10	14	mΩ
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 4A		15		S
DYNAMIC						
Input Capacitance	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 ≅ 20A, V _{GS} = 10V, R _{GEN} =6Ω		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 °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 / μS		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.

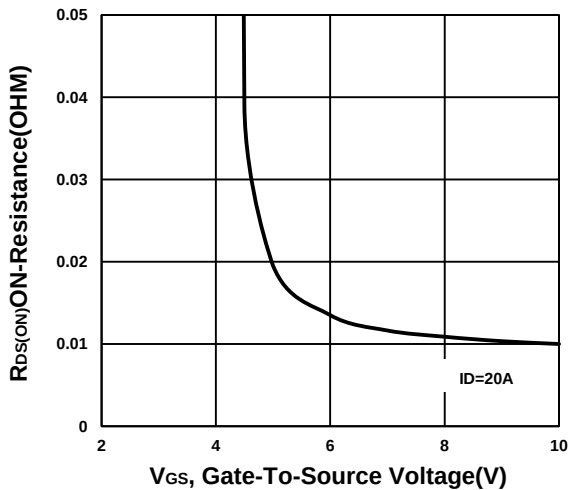
Output Characteristics



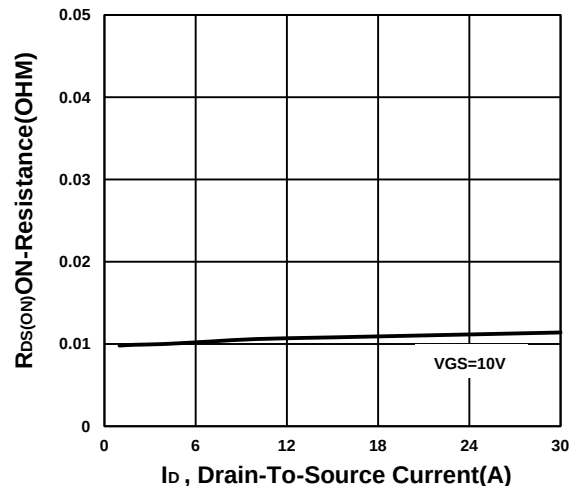
Transfer Characteristics



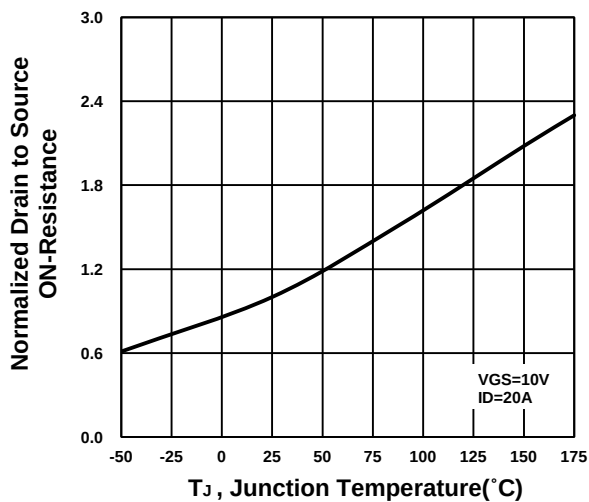
On-Resistance VS Gate-To-Source Voltage



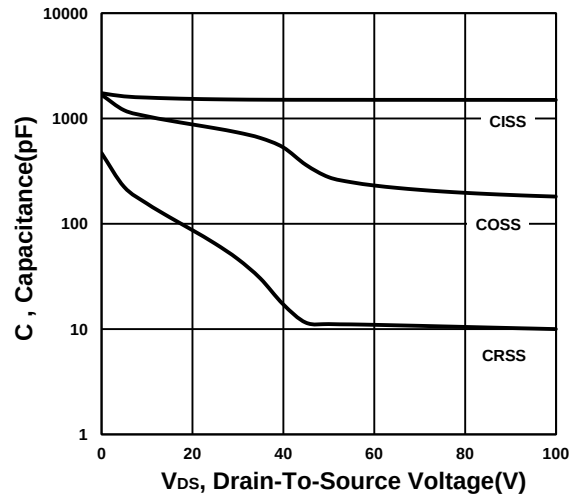
On-Resistance VS Drain Current



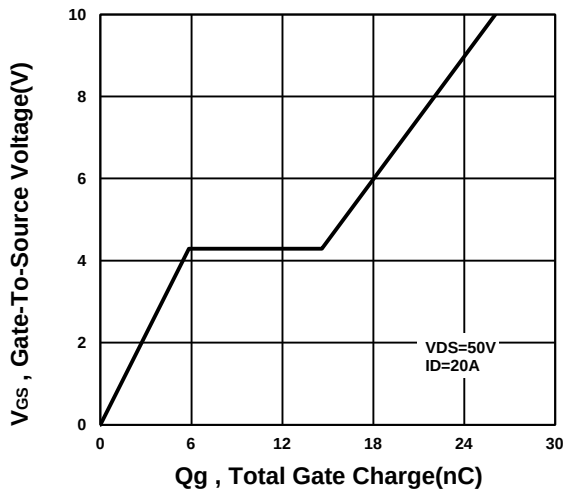
On-Resistance VS Temperature



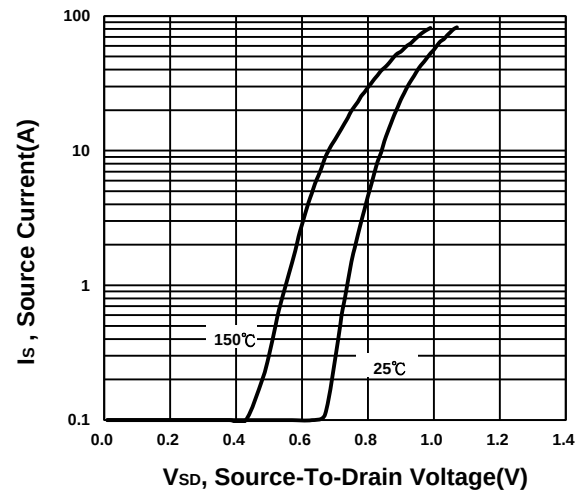
Capacitance Characteristic



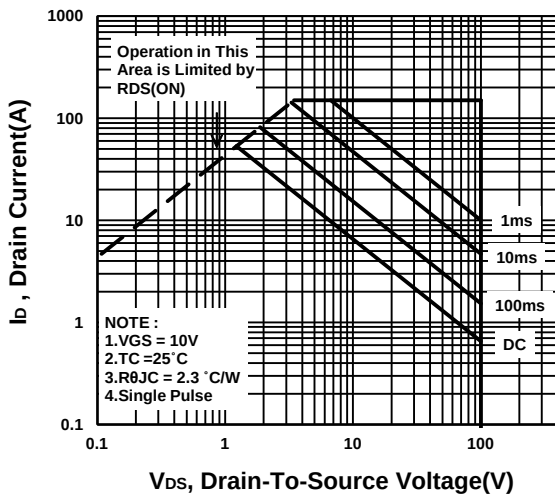
Gate charge Characteristics



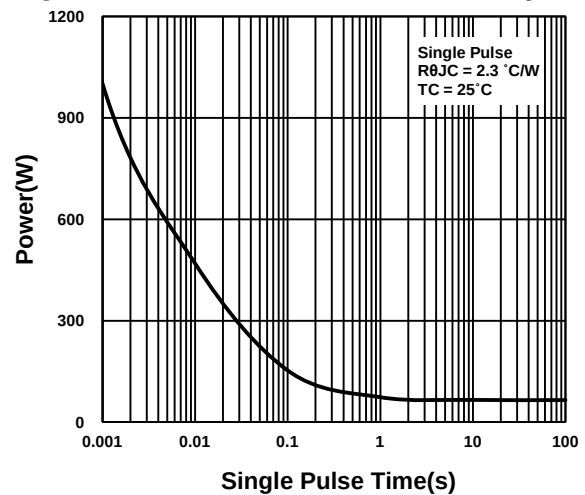
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

