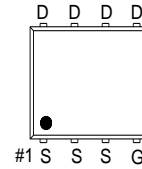
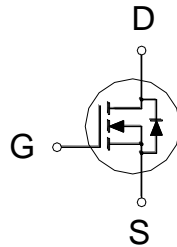


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
100V	14mΩ	42A



G. GATE
D. DRAIN
S. SOURCE

100% UIS Tested
100% Rg Tested

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °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 °C	I_D	42	A
	T _C = 100 °C		30	
Pulsed Drain Current ¹		I_{DM}	61	
Continuous Drain Current	T _A = 25 °C	I_D	9.3	
	T _A = 70 °C		7.8	
Avalanche Current		I_{AS}	12.4	
Avalanche Energy	L = 1mH	E_{AS}	76.8	mJ
Power Dissipation	T _C = 25 °C	P_D	57	W
	T _C = 100 °C		28.8	
Power Dissipation ³	T _A = 25 °C	P_D	2.8	W
	T _A = 70 °C		2	
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	t ≤ 10s	R _{θJA}		53	°C / W
Junction-to-Ambient ²	Steady-State	R _{θJA}		83	
Junction-to-Case	Steady-State	R _{θJC}		2.6	

¹Pulse width limited by maximum junction temperature.

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

³The Power dissipation is based on R_{θJA} t ≤ 10s value.

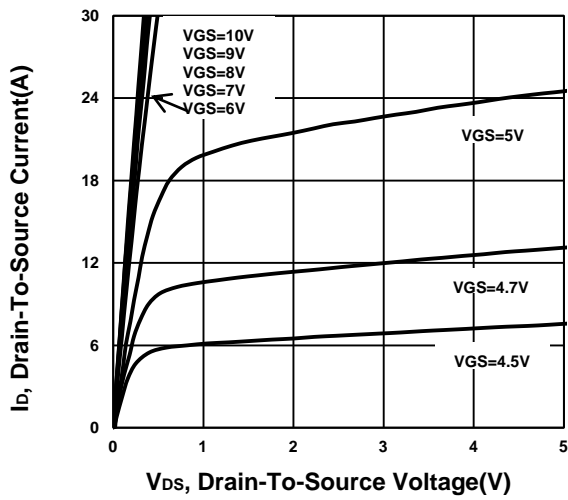
ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	100			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2	3.1	4	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±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		10.8	14	mΩ
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 4A		16		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 50V, f = 1MHz	1188	1486	1783	pF
Output Capacitance	C _{oss}		222	278	334	
Reverse Transfer Capacitance	C _{riss}		6.6	11	15.4	
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz	0.3	0.6	0.9	Ω
Total Gate Charge ²	Q _g	V _{DS} = 50V, V _{GS} = 10V, I _D = 20A	20	25.8	31	nC
Gate-Source Charge ²	Q _{gs}		4.7	5.9	7.1	
Gate-Drain Charge ²	Q _{gd}		5.3	8.8	12	
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			23		
Turn-Off Delay Time ²	t _{d(off)}			26		
Fall Time ²	t _f			27		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I _S				47	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	25	50	100	nS
Reverse Recovery Charge	Q _{rr}		21	43	86	nC

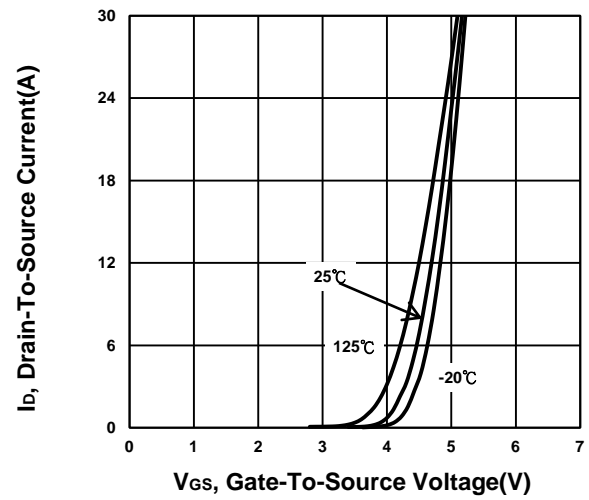
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

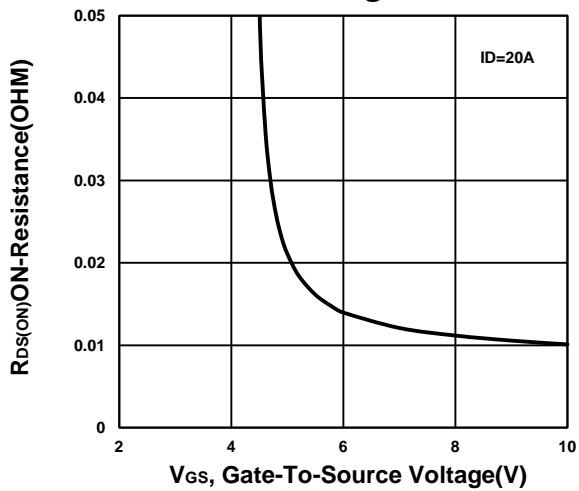
Output Characteristics



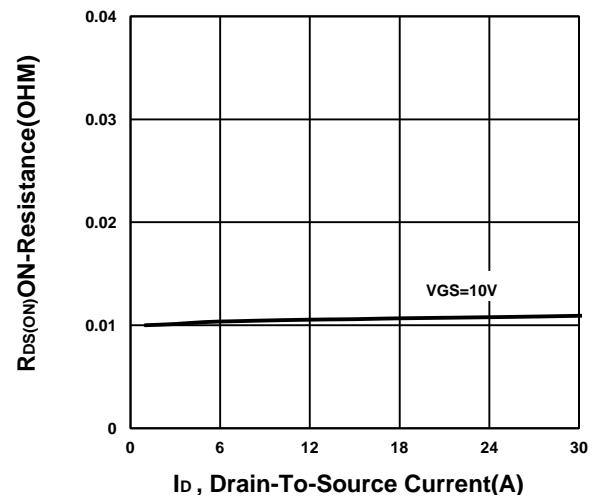
Transfer Characteristics



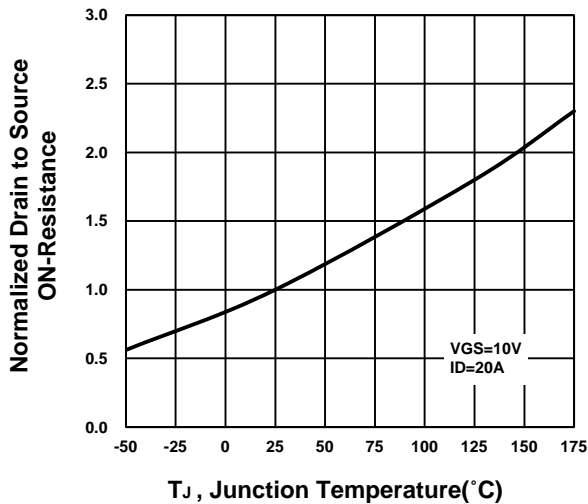
On-Resistance VS Gate-To-Source Voltage



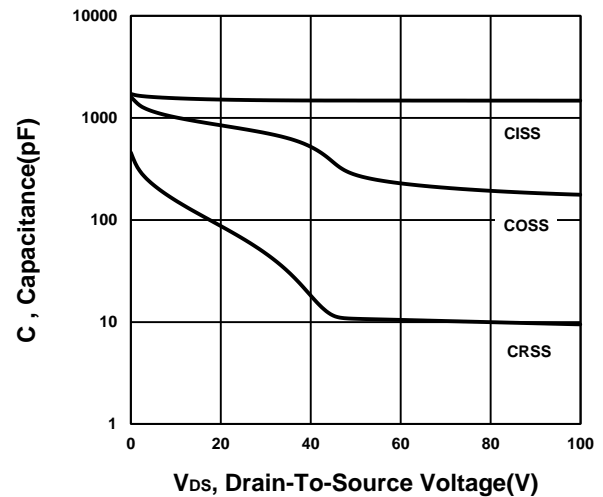
On-Resistance VS Drain Current



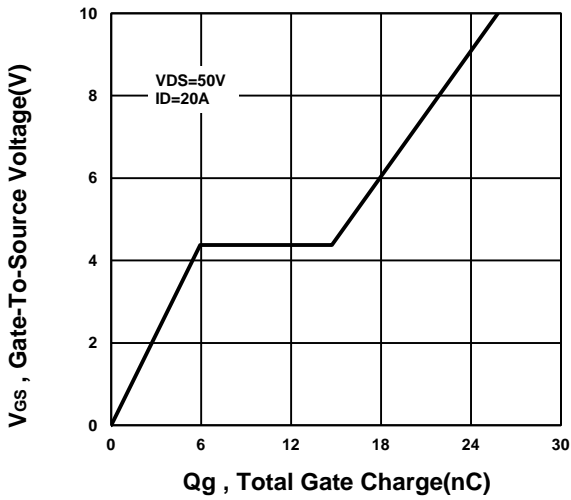
On-Resistance VS Temperature



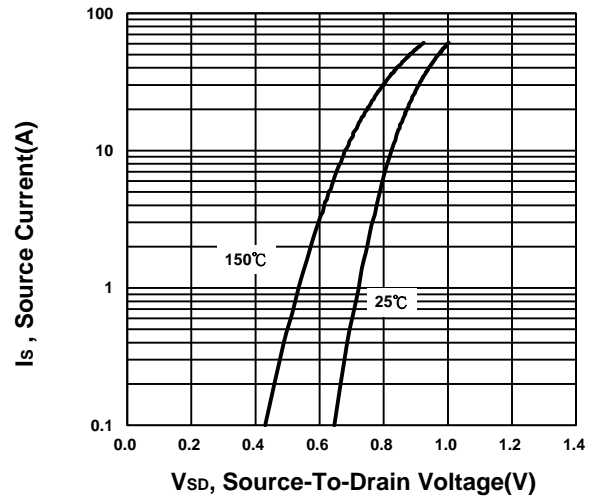
Capacitance Characteristic



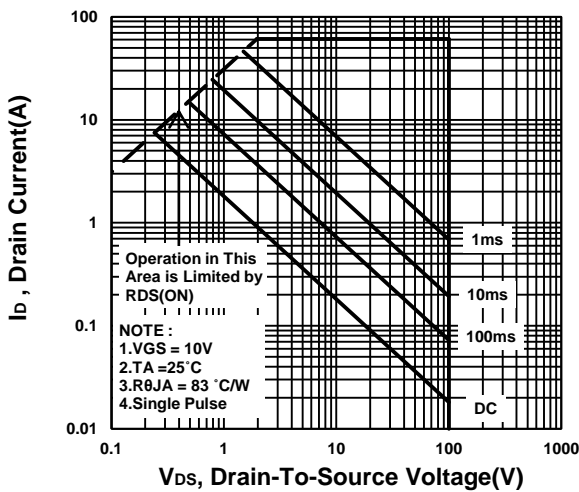
Gate charge Characteristics



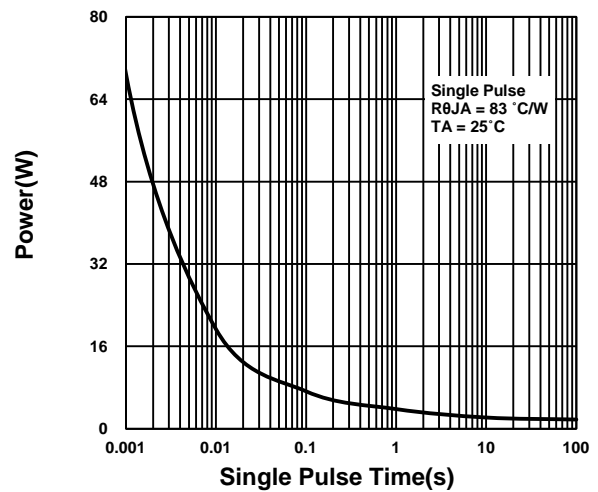
Source-Drain Diode Forward Voltage



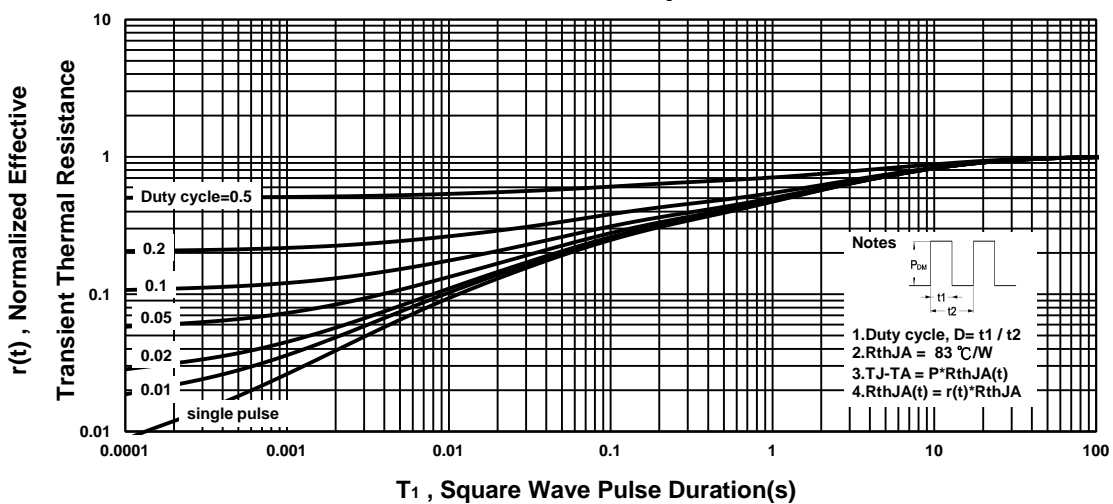
Safe Operating Area



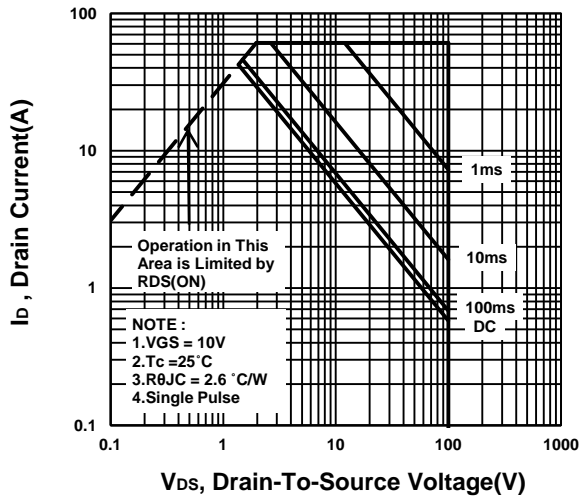
Single Pulse Maximum Power Dissipation



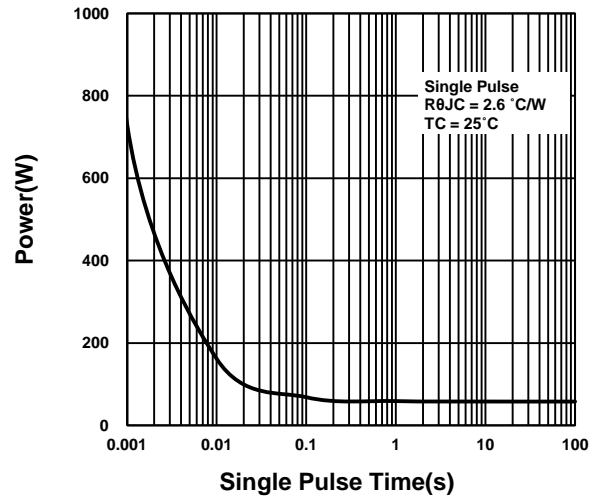
Transient Thermal Response Curve



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

