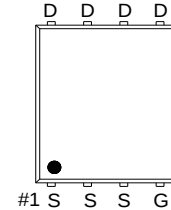
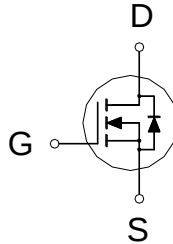


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
100V	4.2m Ω	127A

MSL (Moisture Sensitivity Level) 1.



G. GATE
D. DRAIN
S. 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	127	A
	$T_C = 100\text{ }^{\circ}\text{C}$		90	
Pulsed Drain Current ¹		I_{DM}	223	
Continuous Drain Current	$T_A = 25\text{ }^{\circ}\text{C}$	I_D	23	
	$T_A = 70\text{ }^{\circ}\text{C}$		19.7	
Avalanche Current		I_{AS}	27	
Avalanche Energy	$L = 1\text{mH}$	E_{AS}	364	mJ
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	150	W
	$T_C = 100\text{ }^{\circ}\text{C}$		75	
Power Dissipation ³	$T_A = 25\text{ }^{\circ}\text{C}$	P_D	5.1	W
	$T_A = 70\text{ }^{\circ}\text{C}$		3.6	
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	$t \leq 10\text{s}$	$R_{\theta JA}$		29	$^{\circ}\text{C} / \text{W}$
Junction-to-Ambient ²	Steady-State	$R_{\theta JA}$		56	
Junction-to-Case	Steady-State	$R_{\theta JC}$		1	

¹Pulse width limited by maximum junction temperature.

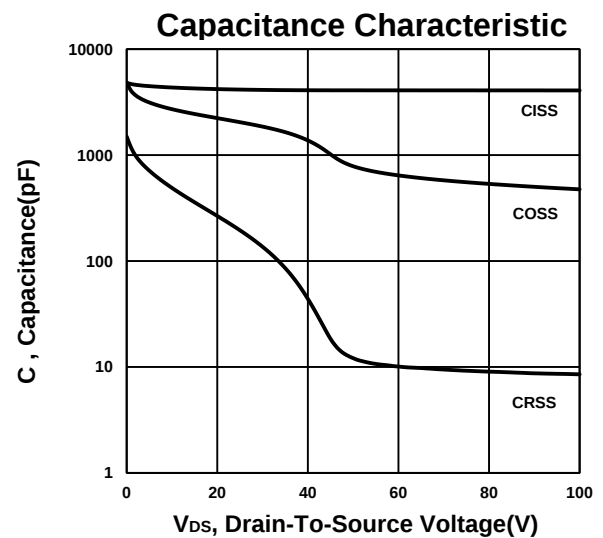
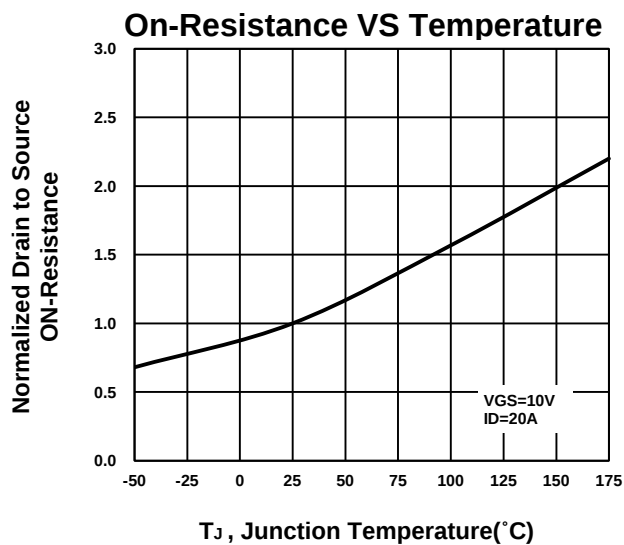
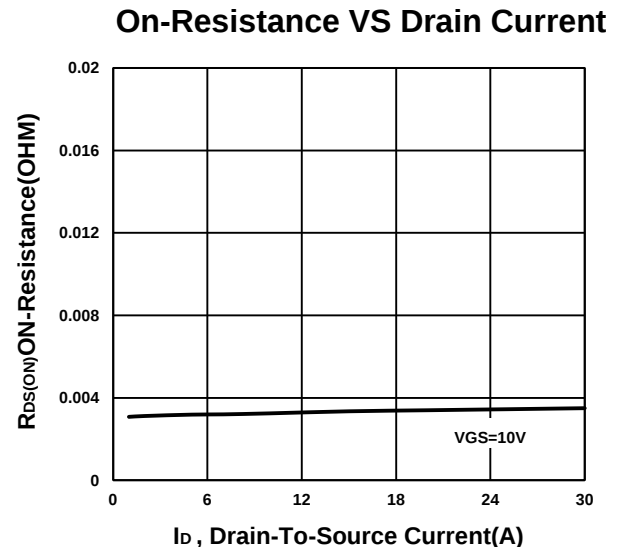
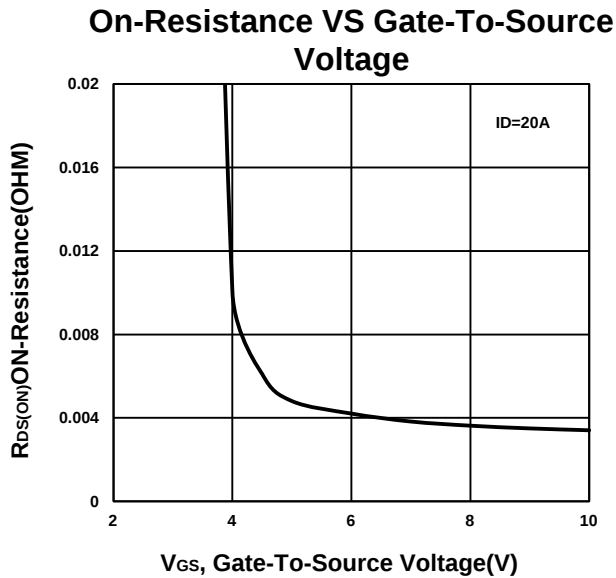
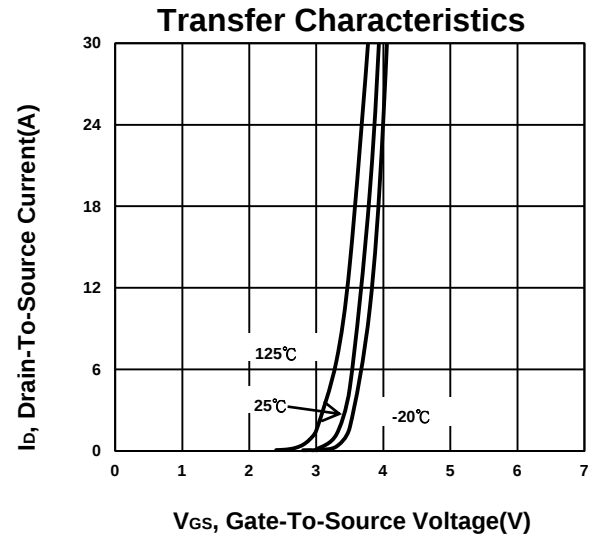
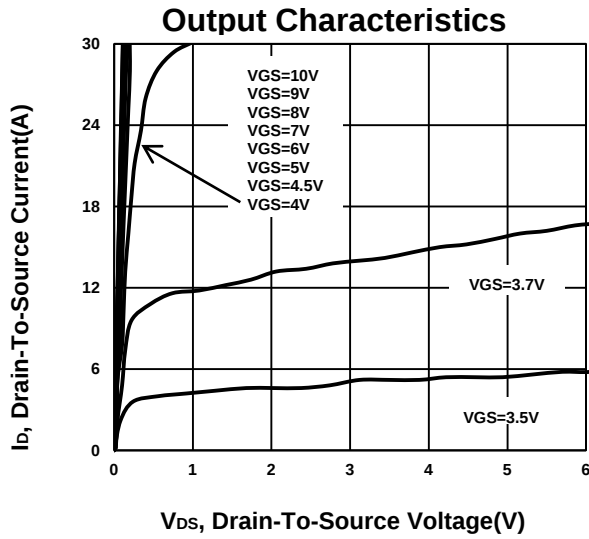
²The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^{\circ}\text{C}$.

³The Power dissipation is based on $R_{\theta JA} t \leq 10\text{s}$ value.

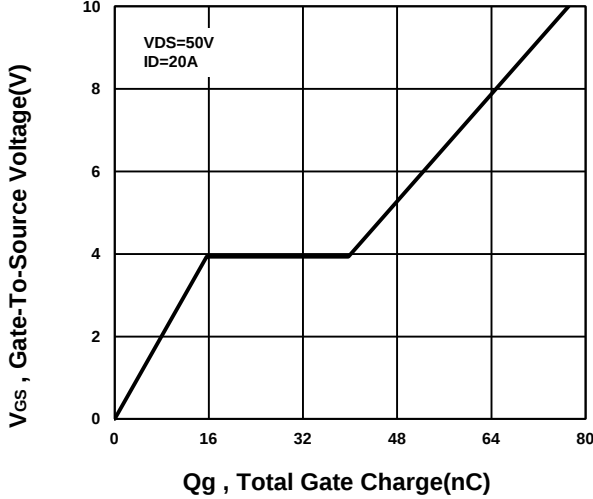
ELECTRICAL CHARACTERISTICS ($T_J = 25\text{ }^{\circ}\text{C}$, Unless Otherwise Noted)

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	3	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
		$V_{DS} = 100V, V_{GS} = 0V, T_J = 55\text{ }^{\circ}C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 20A$		3.4	4.2	mΩ
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 20A$		40		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 50V, f = 1MHz$	3299	4124	4948	pF
Output Capacitance	C_{oss}		621	777	932	
Reverse Transfer Capacitance	C_{rss}		5.8	9.7	13.6	
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$	0.6	1.1	1.7	Ω
Total Gate Charge ²	Q_g	$V_{DS} = 50V, V_{GS} = 10V, I_D = 20A$	61	77	92	nC
Gate-Source Charge ²	Q_{gs}		13	16	19	
Gate-Drain Charge ²	Q_{gd}		14	24	34	
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 50V, I_D \cong 20A, V_{GS} = 10V, R_{GEN} = 6\Omega$		26		nS
Rise Time ²	t_r			76		
Turn-Off Delay Time ²	$t_{d(off)}$			76		
Fall Time ²	t_f			102		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _J = 25 °C)						
Continuous Current	I _S				125	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	31	62	93	nS
Reverse Recovery Charge	Q _{rr}		51	102	153	nC

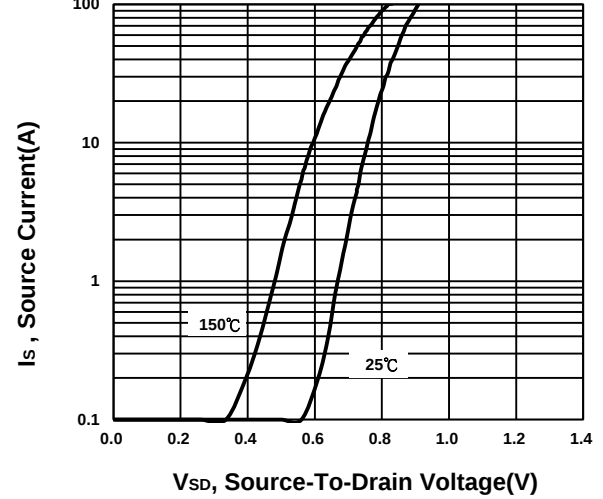
¹Pulse test : Pulse Width $\leq 300\text{ }\mu\text{sec}$, Duty Cycle $\leq 2\%$.²Independent of operating temperature.



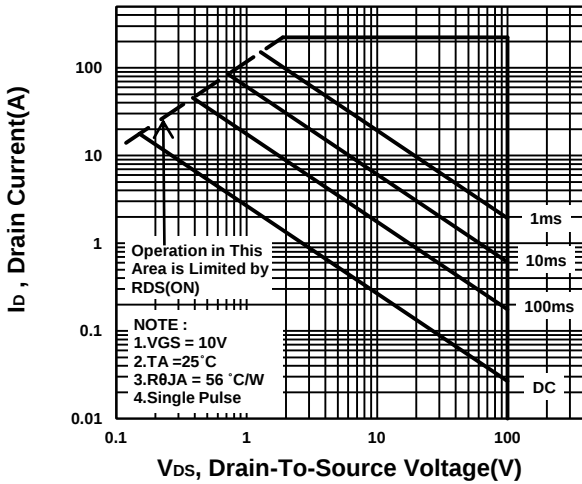
Gate charge Characteristics



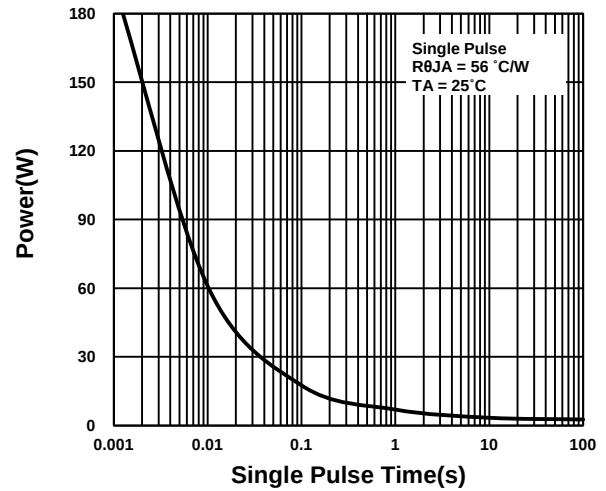
Source-Drain Diode Forward Voltage



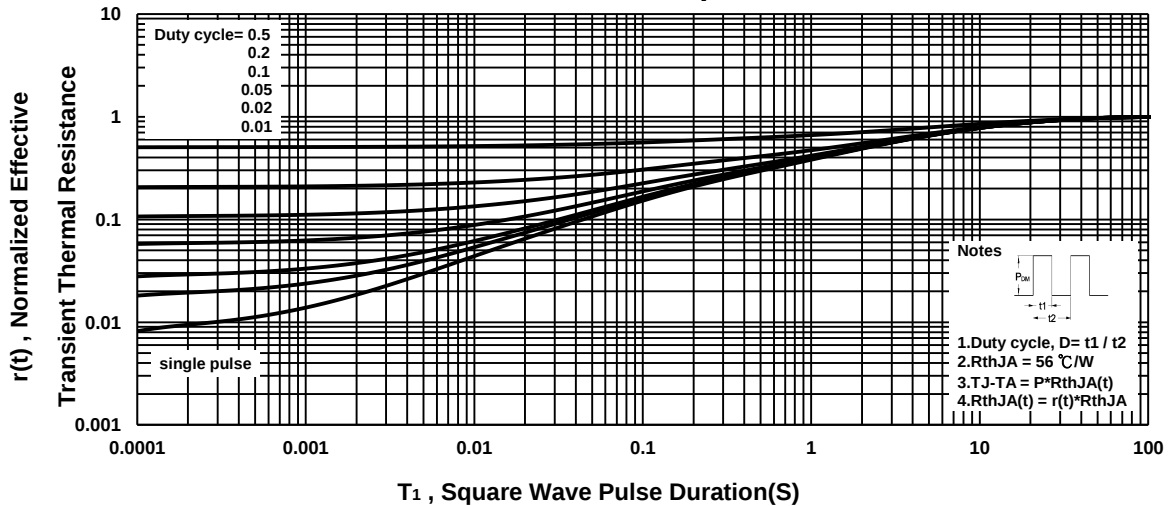
Safe Operating Area



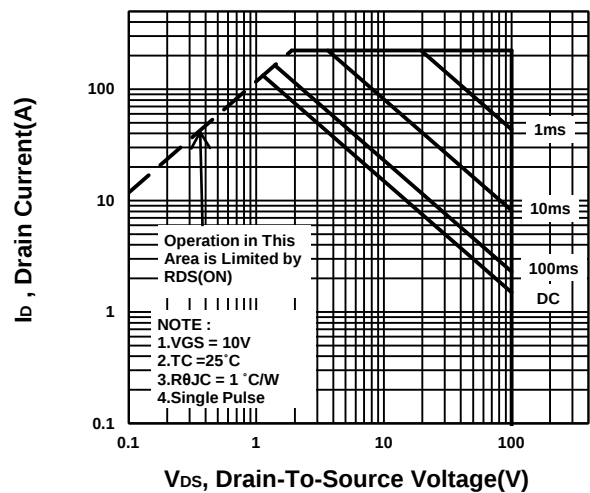
Single Pulse Maximum Power Dissipation



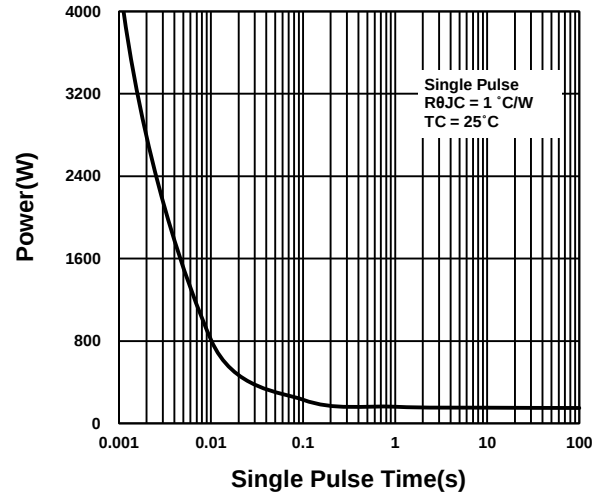
Transient Thermal Response Curve



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

