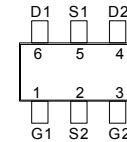
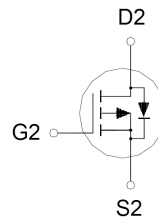
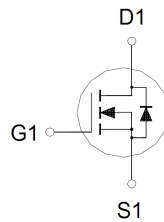




PRODUCT SUMMARY

	$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
N-Channel	20V	60mΩ	3.4A
P-Channel	-20V	115mΩ	-2.5A



G : GATE
D : DRAIN
S : SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ °C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	N-Channel	P-Channel	UNITS
Drain-Source Voltage		V_{DS}	20	-20	V
Gate-Source Voltage		V_{GS}	±12	±12	V
Continuous Drain Current	$T_A = 25\text{ °C}$	I_D	3.4	-2.5	A
	$T_A = 70\text{ °C}$		2.7	-2	
Pulsed Drain Current ¹		I_{DM}	15	-15	
Avalanche Current		I_{AS}	5.5	-12	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	1.5	7.4	mJ
Power Dissipation	$T_A = 25\text{ °C}$	P_D	1.14		W
	$T_A = 70\text{ °C}$		0.72		
Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150		°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$t \leq 10\text{s}$	$R_{\theta JA}$		110	°C / W
Junction-to-Ambient	Steady-State	$R_{\theta JA}$		150	
Junction-to-Lead	Steady-State	$R_{\theta JC}$		80	

¹Pulse width limited by maximum junction temperature.

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	N-Ch	20		V
		$V_{GS} = 0\text{V}, I_D = -250\mu\text{A}$	P-Ch	-20		

Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	N-Ch	0.4	0.75	1.3	
		$V_{DS} = V_{GS}, I_D = -250\mu A$	P-Ch	-0.4	-0.75	-1.3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 12V$	N-Ch			± 100	nA
		$V_{DS} = 0V, V_{GS} = \pm 12V$	P-Ch			± 100	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 16V, V_{GS} = 0V$	N-Ch			1	μA
		$V_{DS} = -16V, V_{GS} = 0V$	P-Ch			-1	
		$V_{DS} = 10V, V_{GS} = 0V, T_J = 55^\circ C$	N-Ch			10	
		$V_{DS} = -10V, V_{GS} = 0V, T_J = 55^\circ C$	P-Ch			-10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 5V, V_{GS} = 10V$	N-Ch	15			A
		$V_{DS} = -5V, V_{GS} = -10V$	P-Ch	-15			
Drain-Source On-State resistance ¹	$R_{DS(ON)}$	$V_{GS} = 1.8V, I_D = 2A$	N-Ch		90	140	$m\Omega$
		$V_{GS} = -1.8V, I_D = -1A$	P-Ch		171	300	
		$V_{GS} = 2.5V, I_D = 3A$	N-Ch		63	85	
		$V_{GS} = -2.5V, I_D = -2A$	P-Ch		118	180	
		$V_{GS} = 4.5V, I_D = 3.6A$	N-Ch		47	60	
		$V_{GS} = -4.5V, I_D = -3.1A$	P-Ch		85	115	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 3.6A$	N-Ch		6		S
		$V_{DS} = -5V, I_D = -3.1A$	P-Ch		11		

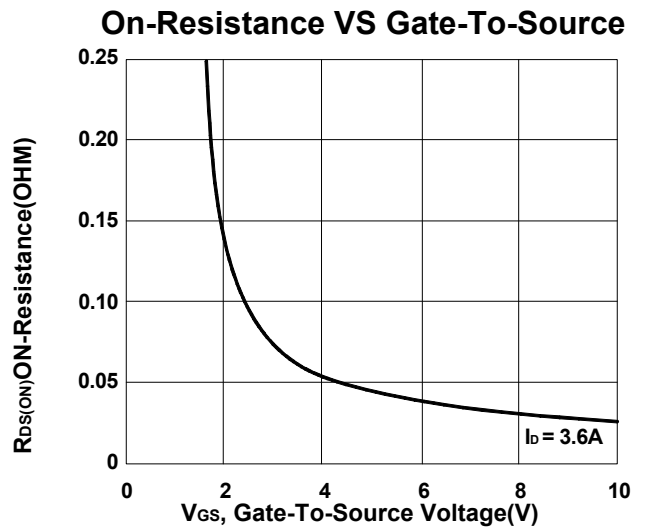
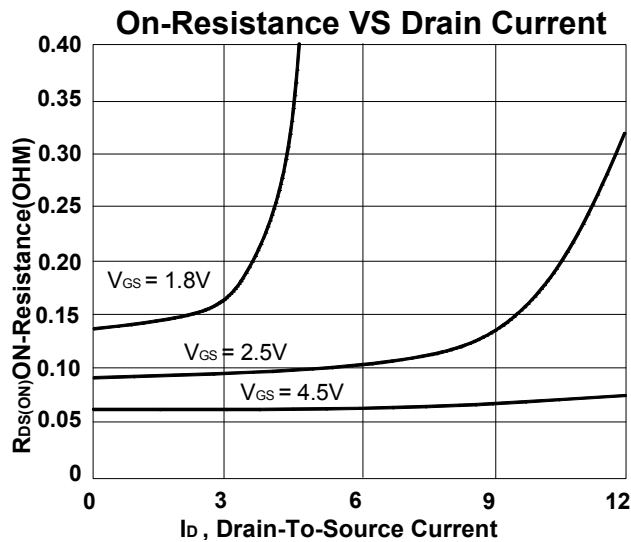
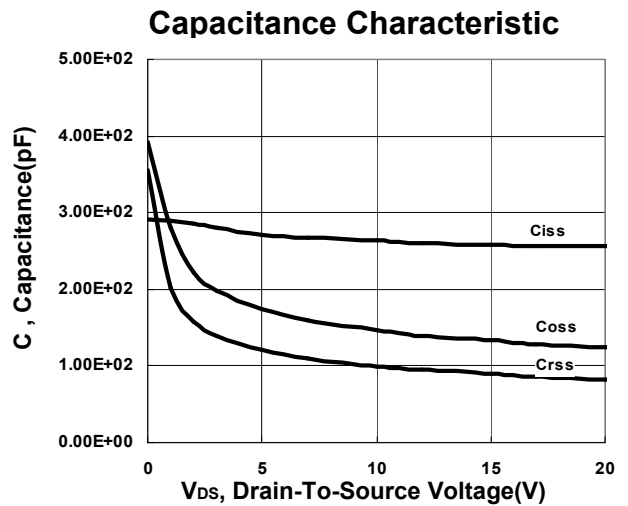
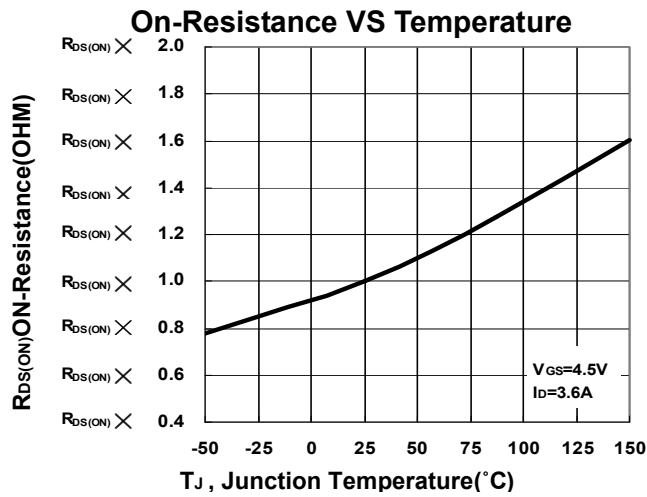
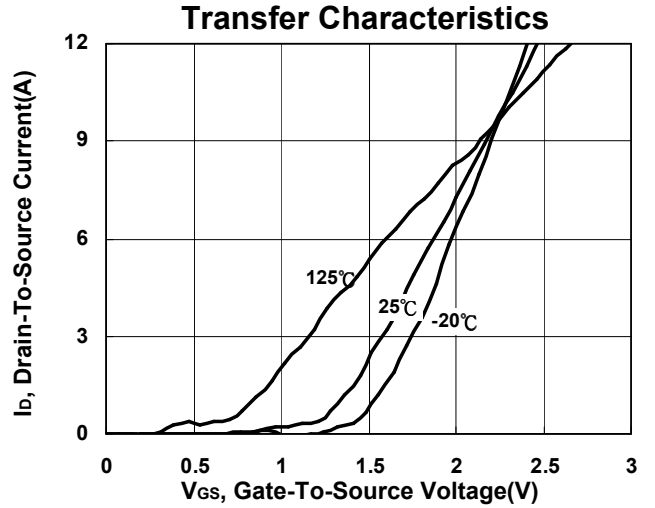
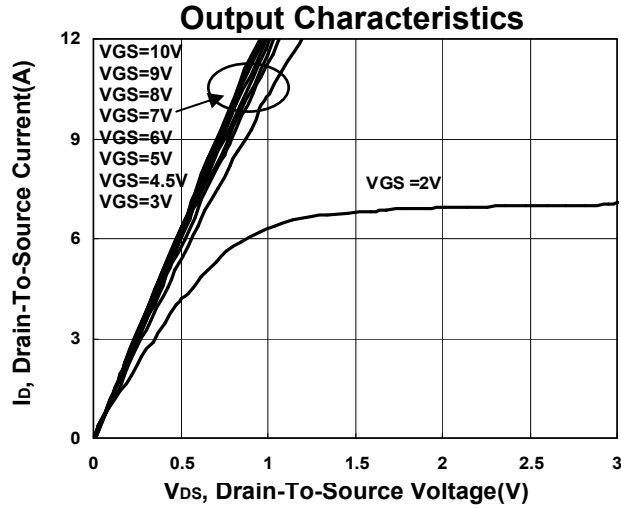
DYNAMIC							
Input Capacitance	C_{iss}	N-Channel $V_{GS} = 0V, V_{DS} = 15V,$ $f = 1MHz$	N-Ch		263		pF
Output Capacitance	C_{oss}		P-Channel $V_{GS} = 0V, V_{DS} = -15V,$ $f = 1MHz$	N-Ch		128	
Reverse Transfer Capacitance	C_{rss}		P-Ch		126		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$	N-Ch		1.65		Ω
			P-Ch		6.1		

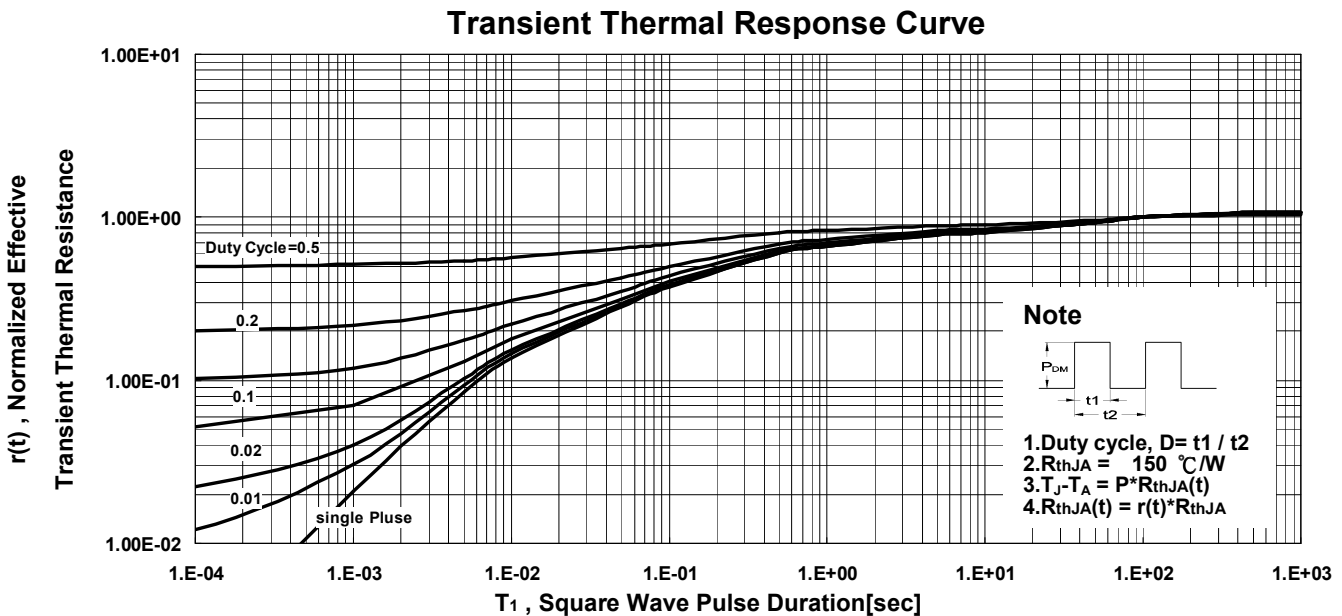
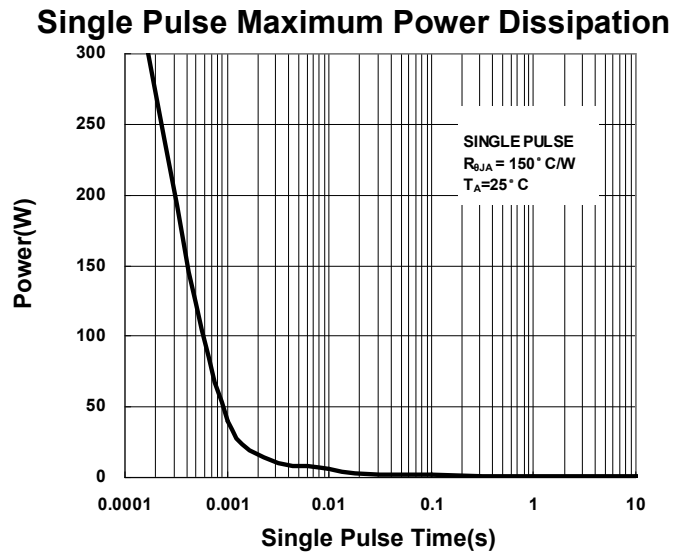
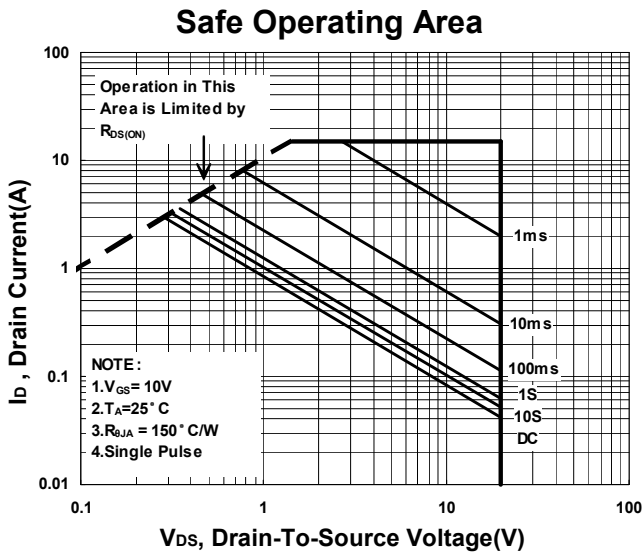
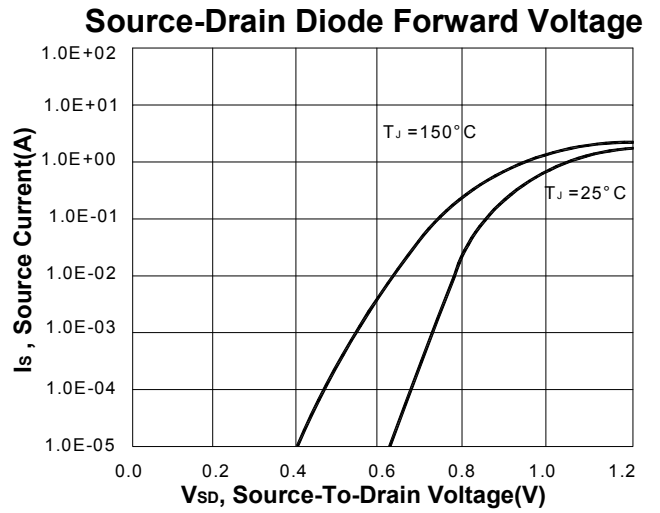
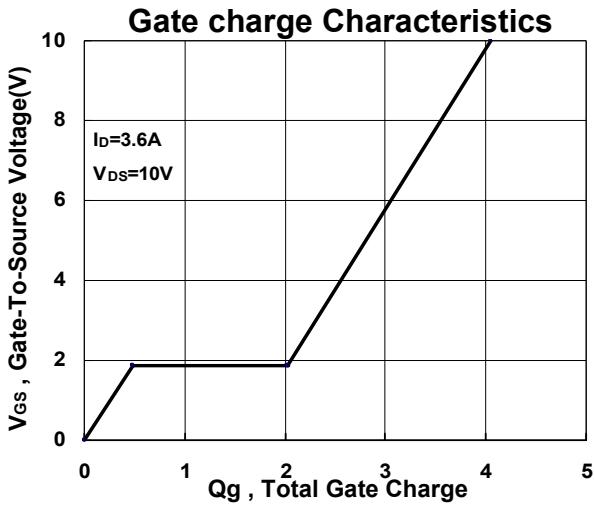
Total Gate Charge ²	Q_g	N-Channel $V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 4.5V$ $I_D = 3.6A$ P-Channel $V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 4.5V$ $I_D = -3.1A$	N-Ch		4		nC
Gate-Source Charge ²	Q_{gs}		N-Ch		0.5		
Gate-Drain Charge ²	Q_{gd}		P-Ch		1		
Turn-On Delay Time ²	$t_{d(on)}$	N-Channel $V_{DS} = 15V$ $I_D \cong 3.6A, V_{GS} = 10V, R_{GEN} = 6\Omega$ P-Channel $V_{DS} = -15V, R_L = 1\Omega$ $I_D \cong -3.1A, V_{GS} = -10V, R_{GEN} = 6\Omega$	N-Ch		6		nS
Rise Time ²	t_r		P-Ch		10		
Turn-Off Delay Time ²	$t_{d(off)}$		N-Ch		7		
Fall Time ²	t_f		P-Ch		12		
			N-Ch		40		nS
			P-Ch		44		
			N-Ch		13		nS
			P-Ch		22		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)							
Continuous Current	I_S		N-Ch			0.95	A
			P-Ch			-0.95	
Forward Voltage ¹	V_{SD}	$I_F = 3.6A, V_{GS} = 0V$	N-Ch			1.2	V
		$I_F = -3.1A, V_{GS} = 0V$	P-Ch			-1.2	
Reverse Recovery Time	t_{rr}	$I_F = 3.6A, di_F/dt = 100A / \mu S$	N-Ch		14		nS
		$I_F = -3.1A, di_F/dt = 100A / \mu S$	P-Ch		25		
Reverse Recovery Charge	Q_{rr}		N-Ch		4		nC
			P-Ch		8		

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

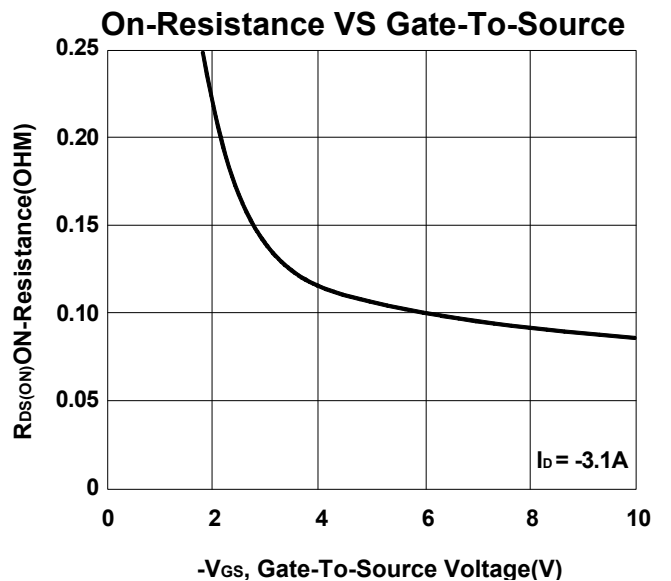
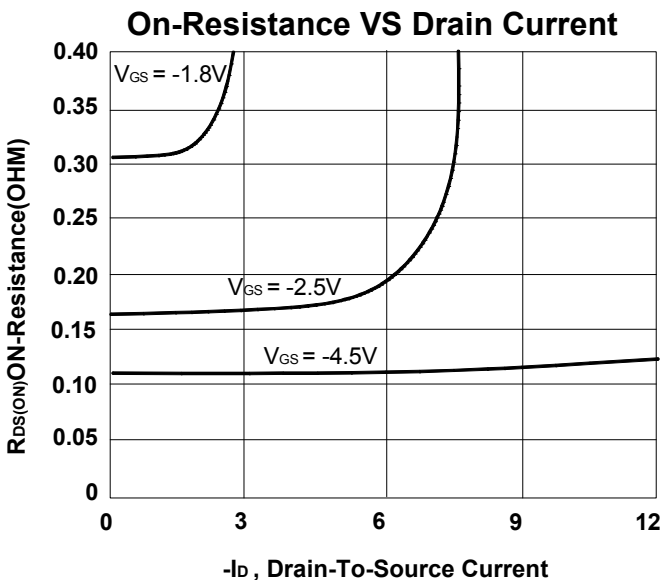
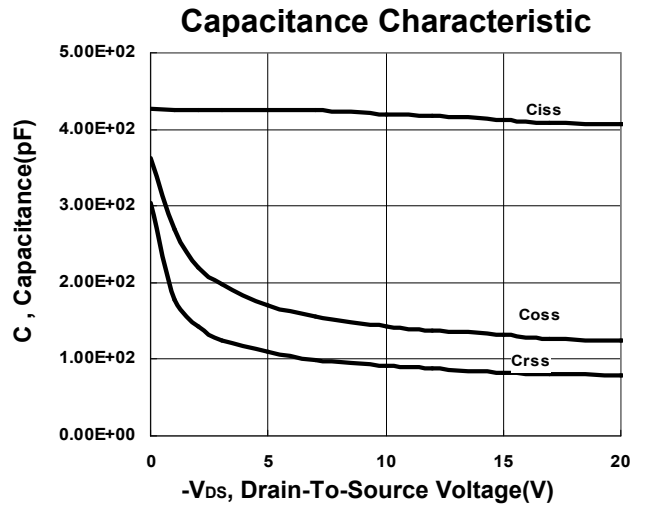
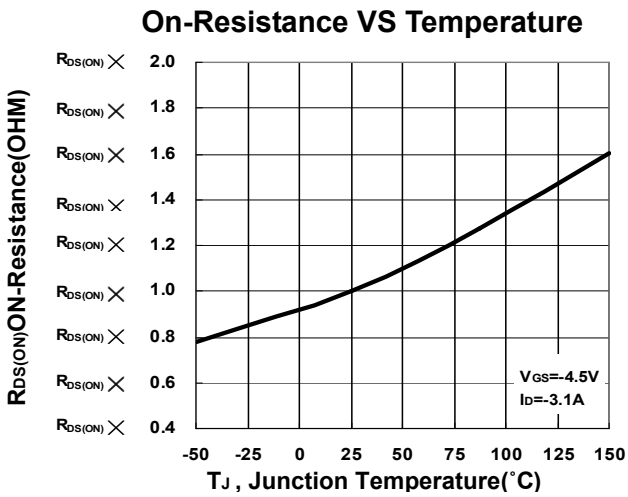
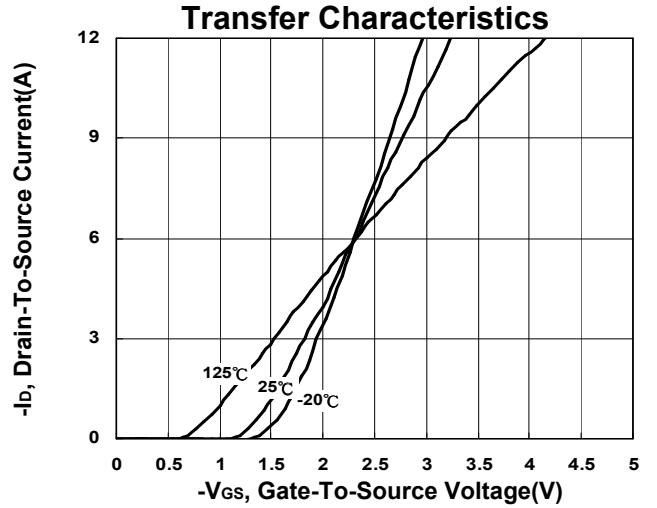
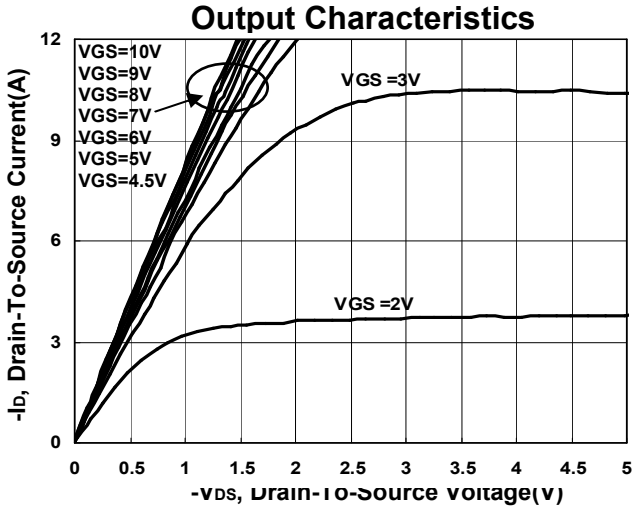
²Independent of operating temperature.

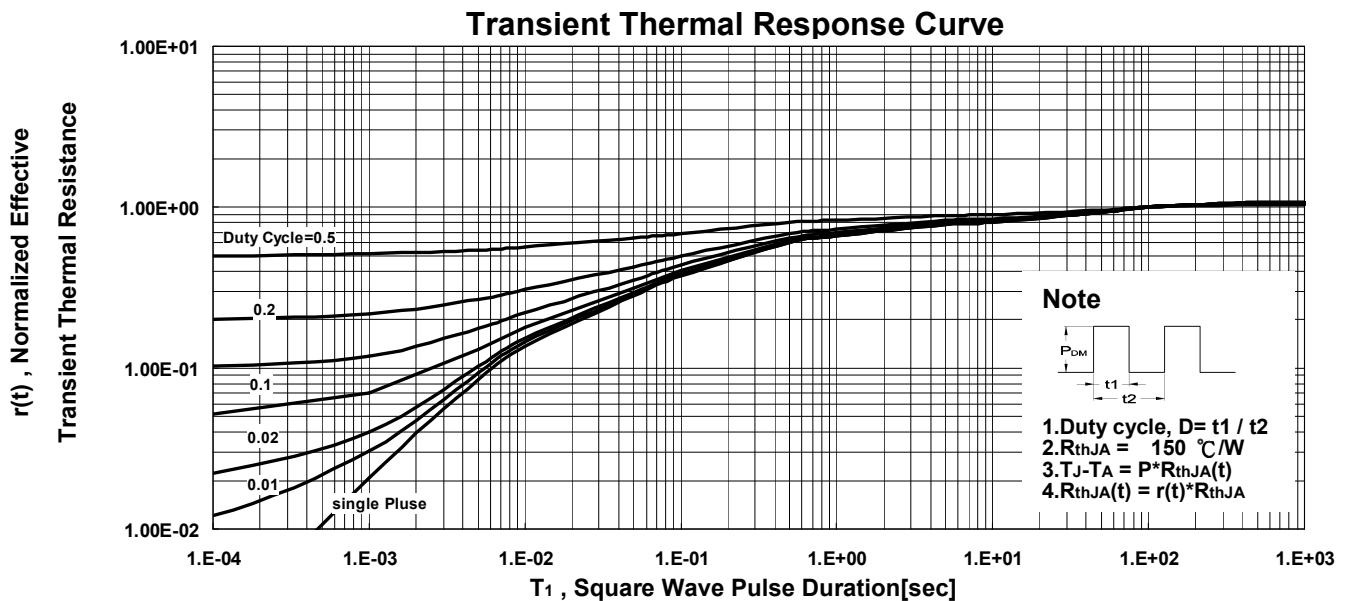
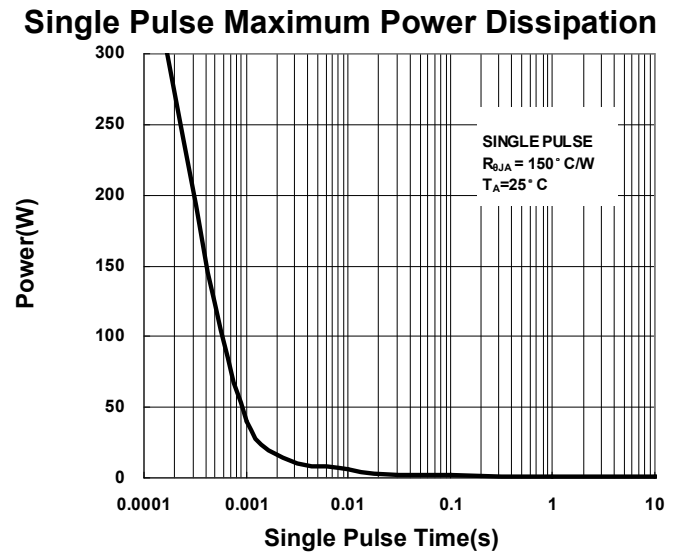
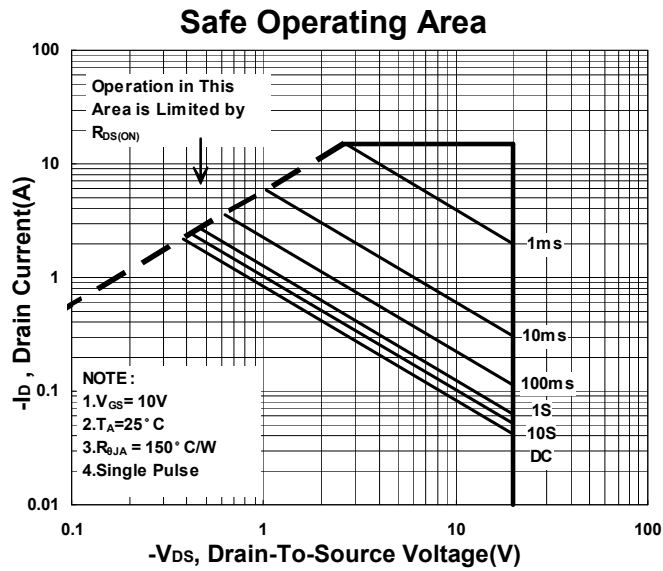
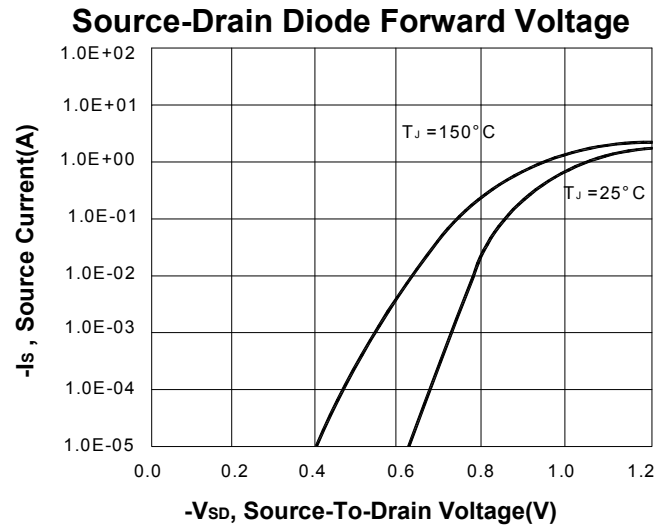
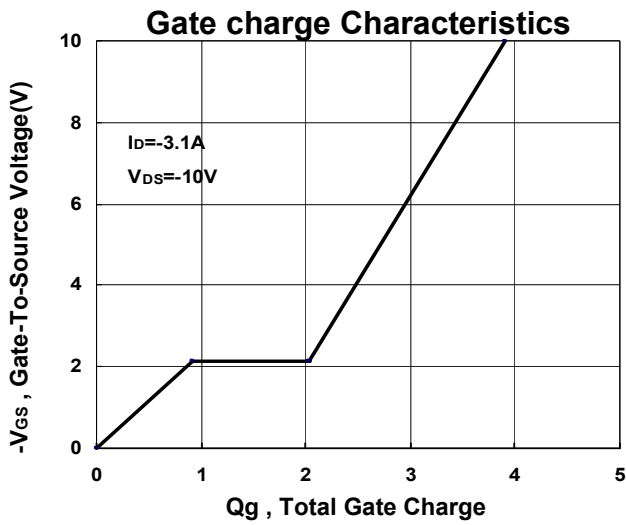
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