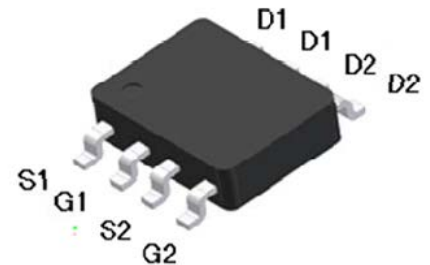
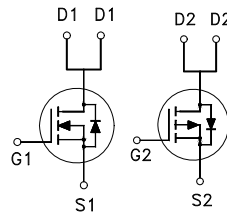


N & P-Channel Logic Level Enhancement Mode Field Effect Transistor

Product Summary:

	N-CH	P-CH
BV_{DSS}	30V	-30V
$R_{DS(on)} (MAX.)$	17m Ω	20m Ω
I_D	10A	-8A



UIS, Rg 100% Tested

Pb-Free Lead Plating & Halogen Free



ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS		UNIT
Gate-Source Voltage		V_{GS}	N-CH	P-CH	V
			±20	±20	
Continuous Drain Current	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	10	-8	A
	$T_C = 100\text{ }^{\circ}\text{C}$		7	-6	
Pulsed Drain Current ¹		I_{DM}	40	-32	
Avalanche Current		I_{AS}	10	-10	
Avalanche Energy	L = 0.1mH, ID=8A, RG=25Ω (N) L = 0.1mH, ID=-7A, RG=25Ω (P)	E_{AS}	3.2	2.45	mJ
Repetitive Avalanche Energy ²	L = 0.05mH	E_{AR}	1.6	1.23	
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	2		W
	$T_C = 100\text{ }^{\circ}\text{C}$		0.8		
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150		°C

100% UIS testing in condition of $V_D=15\text{V}$, $L=0.1\text{mH}$, $V_G=10\text{V}$, $I_L=8\text{A}$, Rated $V_{DS}=30\text{V}$ N-CH

100% UIS testing in condition of $V_D=15\text{V}$, $L=0.1\text{mH}$, $V_G=-10\text{V}$, $I_L=-7\text{A}$, Rated $V_{DS}=-30\text{V}$ P-CH

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNIT
Junction-to-Case	$R_{\theta JC}$		25	$^\circ\text{C} / \text{W}$
Junction-to-Ambient ³	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

³62.5°C / W when mounted on a 1 in² pad of 2 oz copper.

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

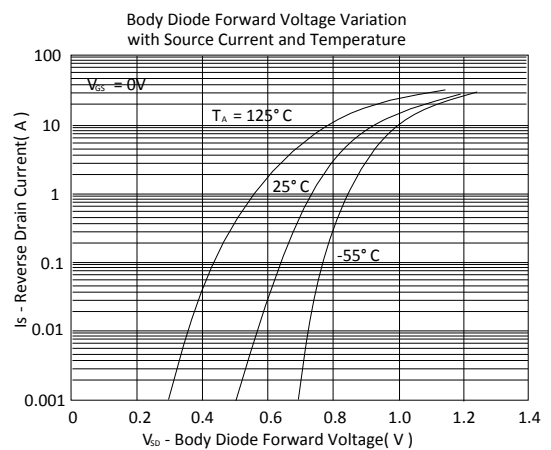
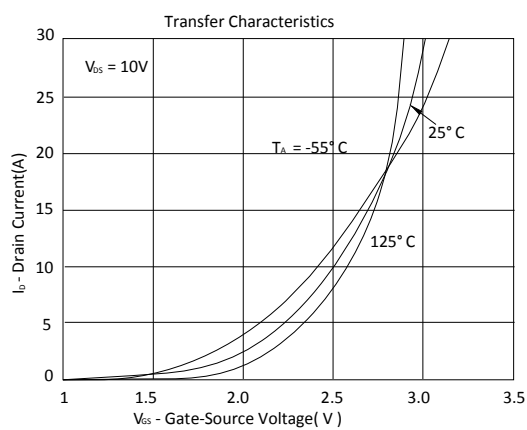
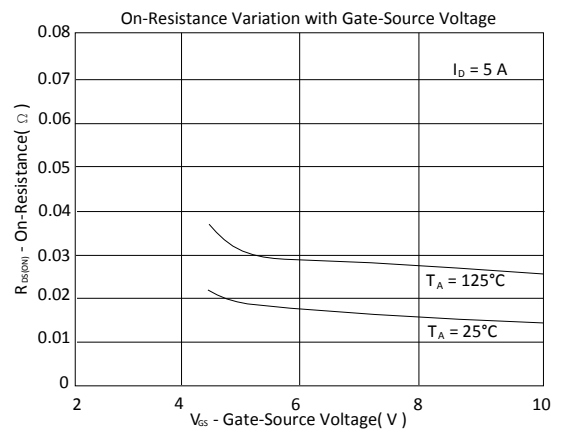
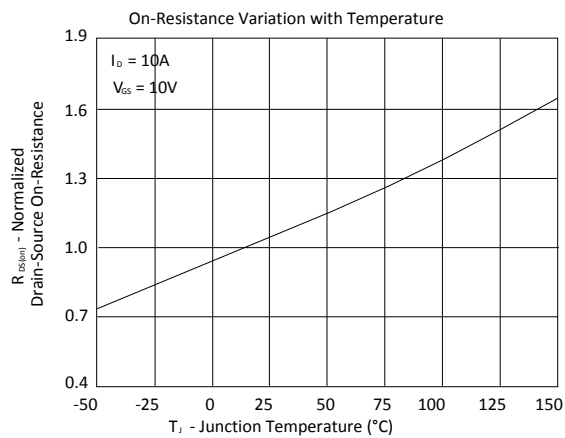
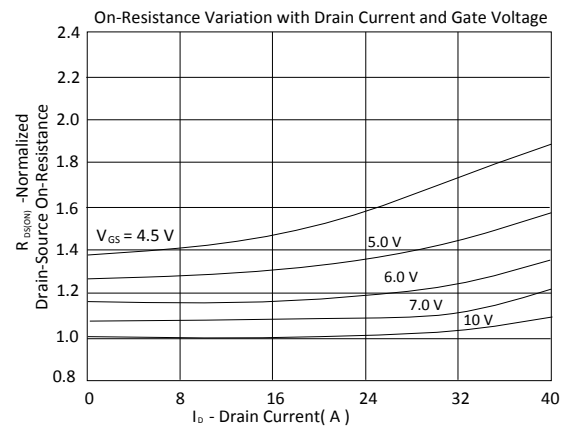
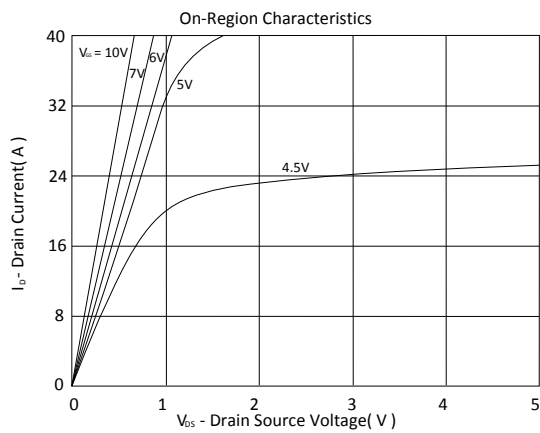
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT	
			MIN	TYP	MAX		
STATIC							
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	N-CH	30			V
		V _{GS} = 0V, I _D = -250μA	P-CH	-30			
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	N-CH	1	1.5	3	
		V _{DS} = V _{GS} , I _D = -250μA	P-CH	-1	-1.5	-3	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V	N-CH			±100	nA
		V _{DS} = 0V, V _{GS} = ±20V	P-CH			±100	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V	N-CH			1	μA
		V _{DS} = -24V, V _{GS} = 0V	P-CH			-1	
		V _{DS} = 20V, V _{GS} = 0V, T _J = 125 °C	N-CH			25	
		V _{DS} = -20V, V _{GS} = 0V, T _J = 125 °C	P-CH			-25	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = 10V, V _{GS} = 10V	N-CH	10			A
		V _{DS} = -5V, V _{GS} = -10V	P-CH	-8			
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 10V, I _D = 10A	N-CH		14.5	17	mΩ
		V _{GS} = -10V, I _D = -8A	P-CH		17.5	20	
		V _{GS} = 4.5V, I _D = 6A	N-CH		21	26	
		V _{GS} = -4.5V, I _D = -6A	P-CH		26	35	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 10A	N-CH		18		S
		V _{DS} = -5V, I _D = -8A	P-CH		24		
DYNAMIC							
Input Capacitance	C _{iss}	N-CH V _{GS} = 0V, V _{DS} = 15V, f = 1MHz P=CH V _{GS} = 0V, V _{DS} = -15V, f = 1MHz	N-CH		597		pF
			P-CH		1407		
Output Capacitance	C _{oss}		N-CH		111		
			P-CH		208		
Reverse Transfer Capacitance	C _{rss}		N-CH		96		
			P-CH		164		

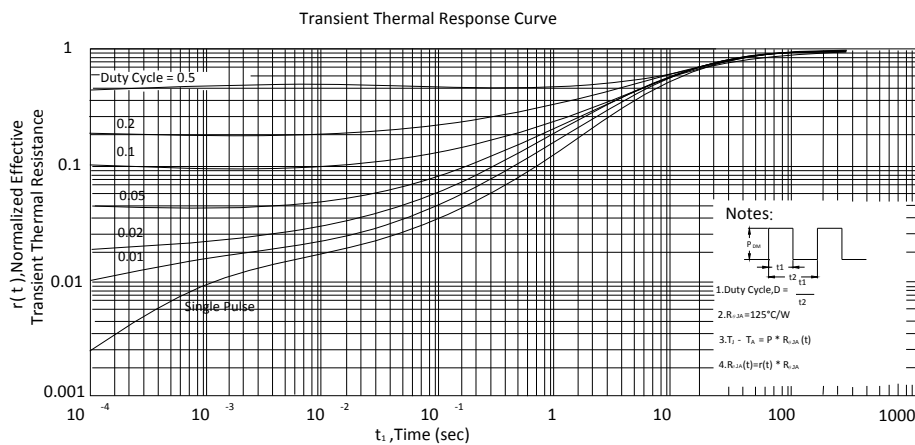
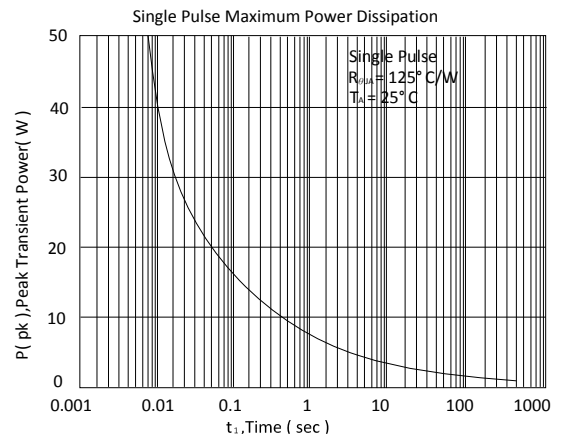
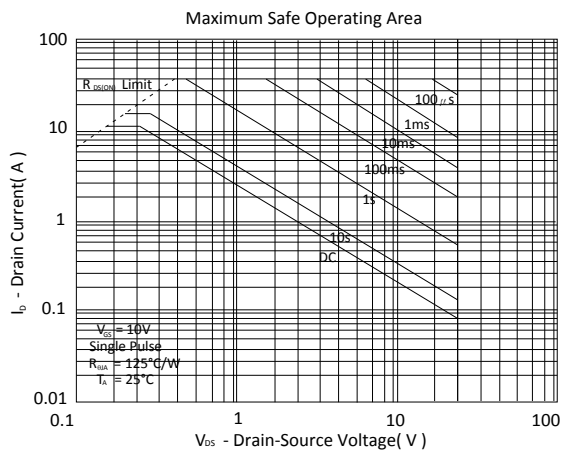
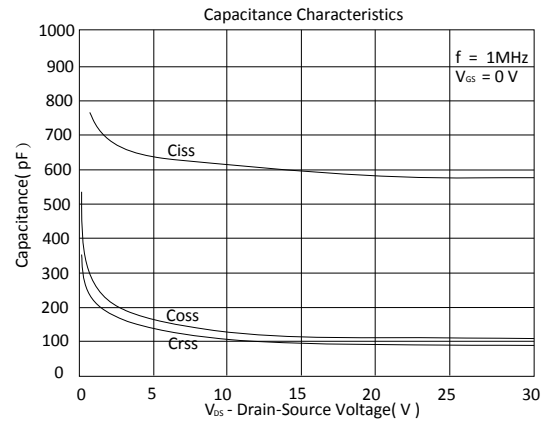
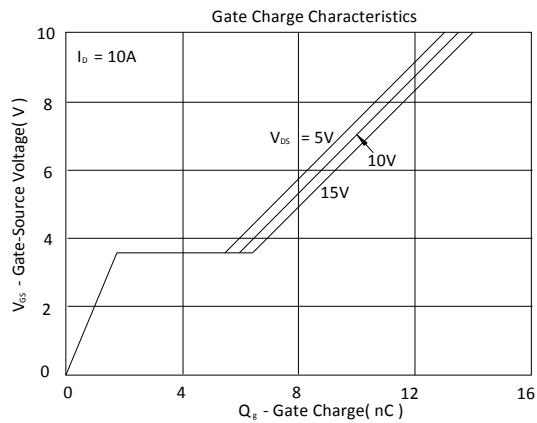
Gate Resistance	R_g	$V_{GS} = 15\text{mV}, V_{DS} = 0\text{V}, f = 1\text{MHz}$	N-CH		2.0		Ω
			P-CH		4.0		
Total Gate Charge ^{1,2}	$Q_g(V_{GS}=10\text{V})$ $Q_g(V_{GS}=-10\text{V})$	N-CH $V_{DS} = 15\text{V}, V_{GS} = 10\text{V},$ $I_D = 10\text{A}$ P-CH $V_{DS} = -15\text{V}, V_{GS} = -10\text{V},$ $I_D = -8\text{A}$	N-CH		14		nC
	$Q_g(V_{GS}=4.5\text{V})$ $Q_g(V_{GS}=-4.5\text{V})$		P-CH		20.3		
			N-CH		7.8		
			P-CH		9.8		
Gate-Source Charge ^{1,2}	Q_{gs}		N-CH		1.8		
			P-CH		3.2		
Gate-Drain Charge ^{1,2}	Q_{gd}	N-CH $V_{DS} = 15\text{V},$ $I_D = 1\text{A}, V_{GS} = 10\text{V}, R_{GS} = 6\Omega$ P-CH $V_{DS} = -15\text{V},$ $I_D = -1\text{A}, V_{GS} = -10\text{V}, R_{GS} = 6\Omega$	N-CH		4.7		nS
			P-CH		4.9		
Turn-On Delay Time ^{1,2}	$t_{d(on)}$		N-CH		11		
			P-CH		10		
Rise Time ^{1,2}	t_r		N-CH		16		
			P-CH		8		
Turn-Off Delay Time ^{1,2}	$t_{d(off)}$		N-CH		36		
			P-CH		25		
Fall Time ^{1,2}	t_f		N-CH		20		
			P-CH		10		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_c = 25^\circ\text{C}$)							
Continuous Current	I_S		N-CH			2.3	A
			P-CH			-2.3	
Pulsed Current ³	I_{SM}		N-CH			9.2	
			P-CH			-9.2	
Forward Voltage ¹	V_{SD}	$I_F = I_S, V_{GS} = 0\text{V}$	N-CH			1.2	V
			P-CH			-1.2	
Reverse Recovery Time	t_{rr}	$I_F = I_S, dI_F/dt = 100\text{A} / \mu\text{S}$	N-CH		50		nS
			P-CH		32		
Peak Reverse Recovery Current	$I_{RM(REC)}$		N-CH		30		A
			P-CH		-28		
Reverse Recovery Charge	Q_{rr}		N-CH		20		nC
			P-CH		26		

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

²Independent of operating temperature.

N-Channel





P-Channel

