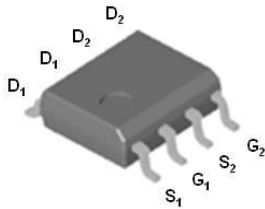


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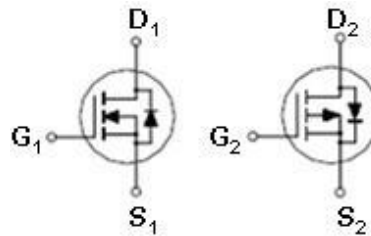
N&P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D	Channel
30V	27.5m Ω @ $V_{GS} = 10V$	10A	N
-30V	45m Ω @ $V_{GS} = -10V$	-7A	P



SOP-8



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

PARAMETERS/TEST CONDITIONS		SYMBOL	CH.	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	N	30	V
			P	-30	
Gate-Source Voltage		V_{GS}	N	± 20	
			P	± 20	
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	N	10	A
			P	-7	
	$T_A = 70\text{ }^\circ\text{C}$		N	7	
			P	-5	
Pulsed Drain Current ¹		I_{DM}	N	20	
			P	-20	
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	N	2.5	W
			P	2.5	
	$T_A = 70\text{ }^\circ\text{C}$		N	1.6	
			P	1.6	
Junction & Storage Temperature Range		T_J, T_{STG}		-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		50	$^\circ\text{C} / \text{W}$
Junction-to-Case	$R_{\theta JC}$		30	$^\circ\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$.

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N&P-Channel Enhancement Mode MOSFET

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS		
			MIN	TYP	MAX			
STATIC								
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	N	30		V		
		V _{GS} = 0V, I _D = -250μA	P	-30				
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	N	1	1.5	2.5	V	
		V _{DS} = V _{GS} , I _D = -250μA	P	-1	-1.5	-2.5		
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V	N			±100	nA	
		V _{DS} = 0V, V _{GS} = ±20V	P			±100		
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V	N			1	μA	
		V _{DS} = -24V, V _{GS} = 0V	P			-1		
		V _{DS} = 20V, V _{GS} = 0V, T _J = 55 °C	N					10
		V _{DS} = -20V, V _{GS} = 0V, T _J = 55 °C	P					-10
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = 5V, V _{GS} = 10V	N	20			A	
		V _{DS} = -5V, V _{GS} = -10V	P	-20				
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 6A	N		30	40	mΩ	
		V _{GS} = -4.5V, I _D = -4A	P		62	80		
		V _{GS} = 10V, I _D = 7A	N		20.5	27.5		
		V _{GS} = -10V, I _D = -5A	P		37.5	45		
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 7A	N		16		S	
		V _{DS} = -5V, I _D = -5A	P		13			

DYNAMIC							
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz	N		680		pF
			P		780		
Output Capacitance	C _{oss}		N		105		
			P		145		
Reverse Transfer Capacitance	C _{rss}		N		75		
			P		79		
Total Gate Charge ²	Q _g	V _{DS} = 0.5*V _{(BR)DSS} , V _{GS} = 10V, I _D = 7A	N		14		nC
			P		15.1		
Gate-Source Charge ²	Q _{gs}		N		1.9		
			P		2.1		
Gate-Drain Charge ²	Q _{gd}		N		3.3		
			P		4.0		
Gate Resistance	R _g	V _{GS} =15mV, V _{DS} =0V, f=1MHz	N		1.7	2.5	Ω
			P		3.5	6	

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DYNAMIC							
Turn-On Delay Time ²	$t_{d(on)}$	N-Channel $V_{DD} = 10V$ $I_D \cong 1A, V_{GS} = 10V, R_{GEN} = 3\Omega$	N		4.6	7	nS
			P		7.7	11.5	
Rise Time ²	t_r		N		4	6	
			P		5.7	8.5	
Turn-Off Delay Time ²	$t_{d(off)}$	P-Channel $V_{DD} = -10V$ $I_D \cong -1A, V_{GS} = -10V, R_{GEN} = 3\Omega$	N		20	30	
			P		20	30	
Fall Time ²	t_f		N		5	8	
			P		9.5	14	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)							
Continuous Current	I_S		N			1.3	A
			P			-1.3	
Forward Voltage ¹	V_{SD}	$I_F = 1A, V_{GS} = 0V$	N			1	V
			P			-1	

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

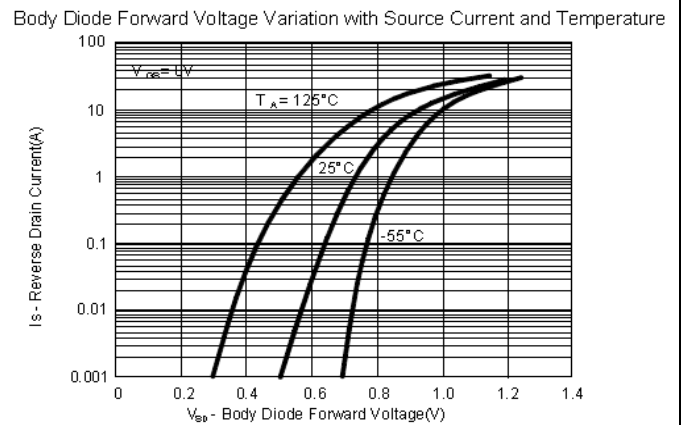
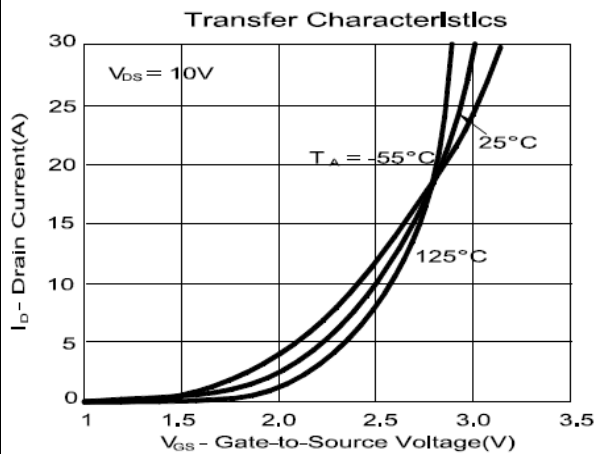
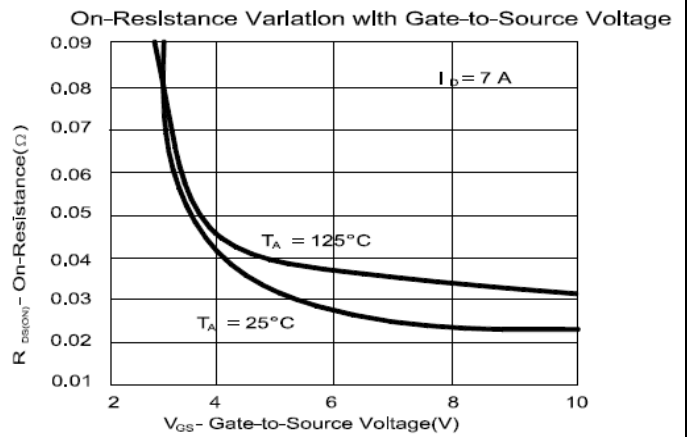
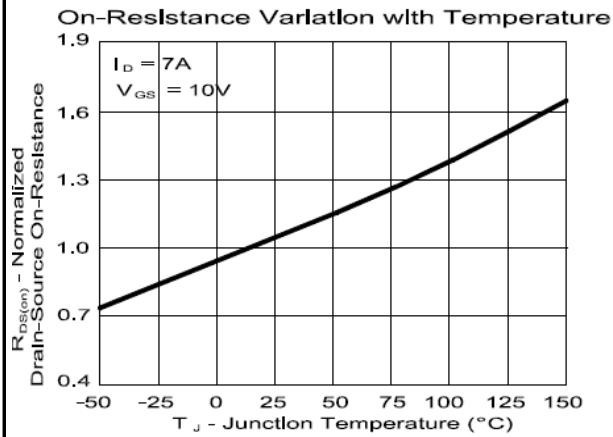
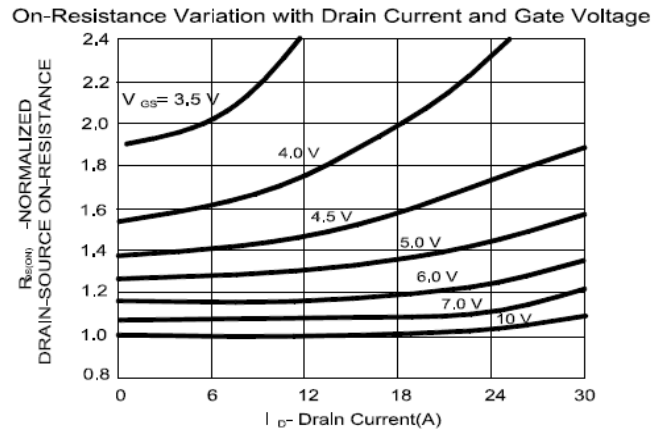
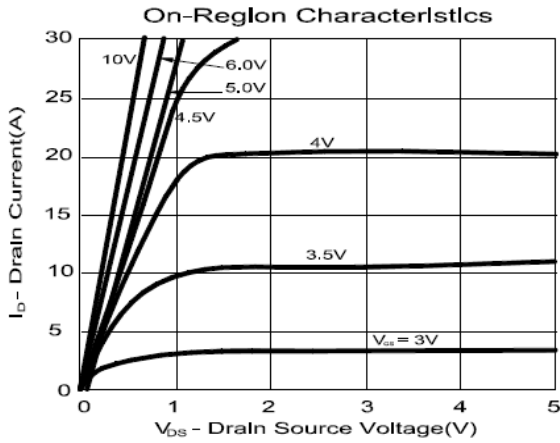
²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

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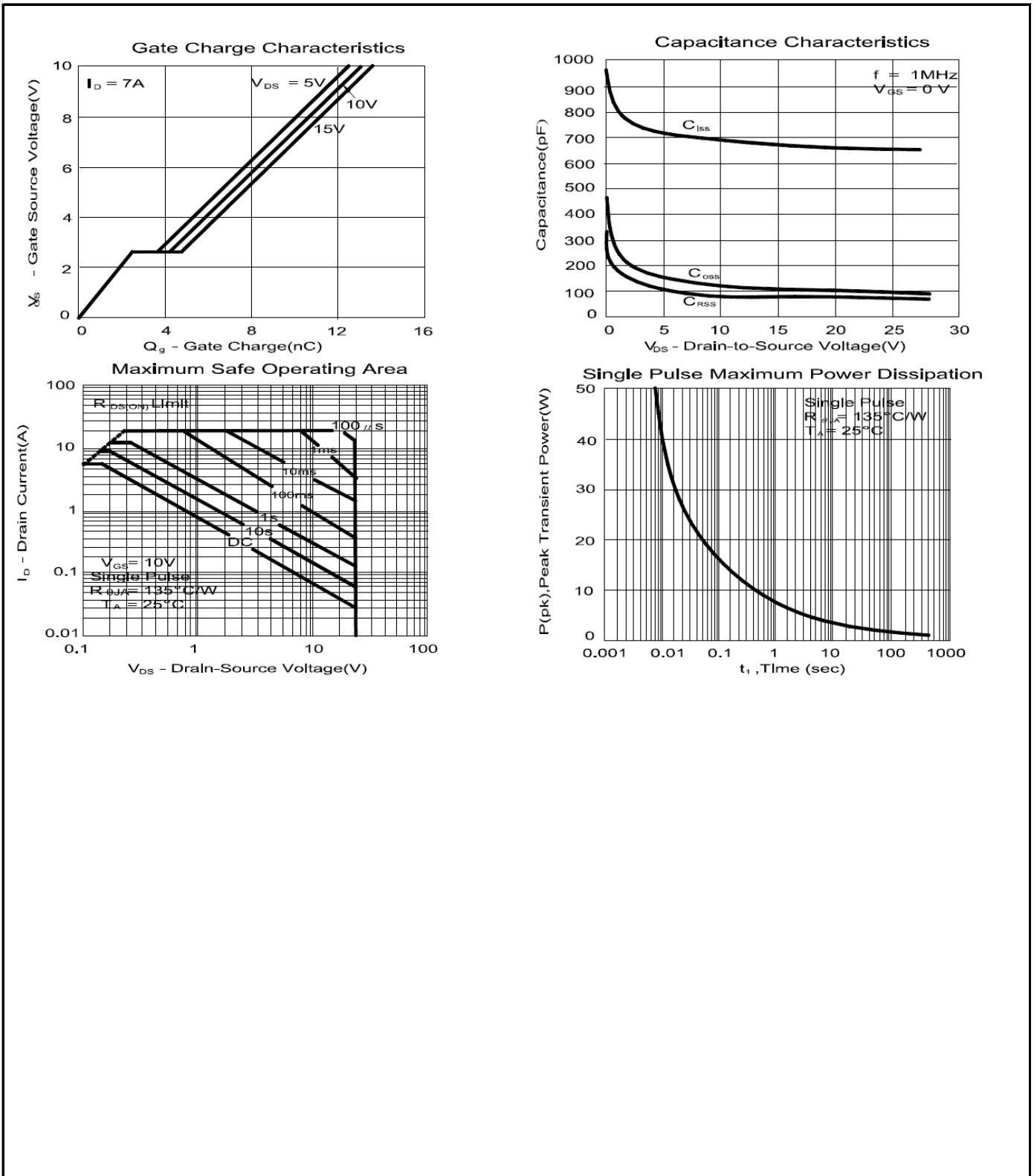
N&P-Channel Enhancement Mode MOSFET

N-CHANNEL



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N&P-Channel Enhancement Mode MOSFET

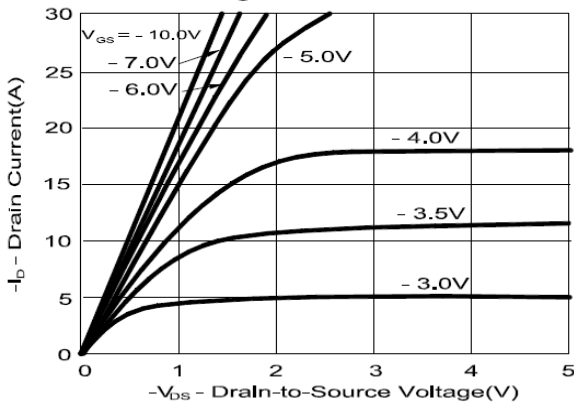


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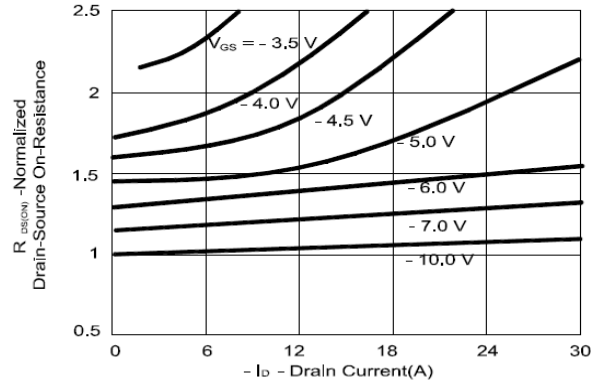
N&P-Channel Enhancement Mode MOSFET

P-CHANNEL

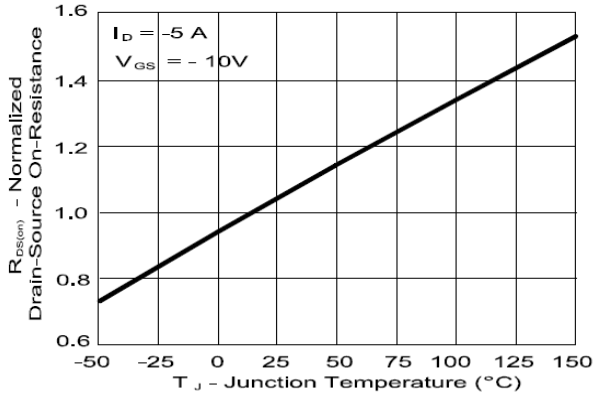
On-Region Characteristics



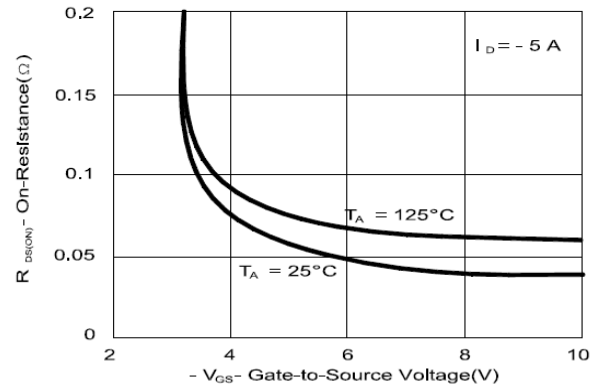
On-Resistance Variation with Drain Current and Gate Voltage



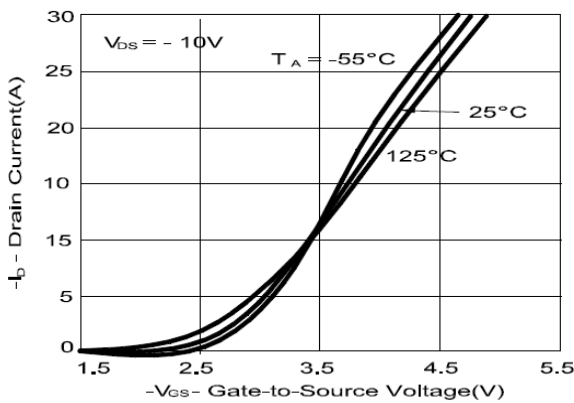
On-Resistance Variation with Temperature



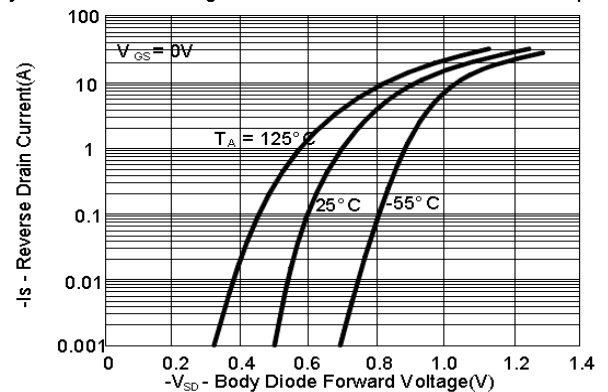
On-Resistance Variation with Gate-to-Source Voltage



Transfer Characteristics

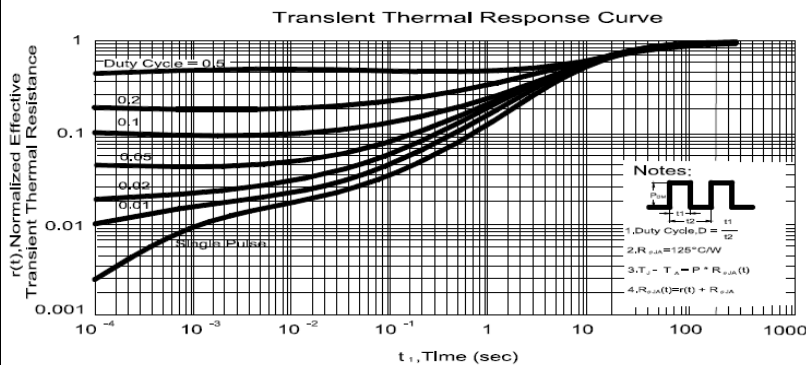
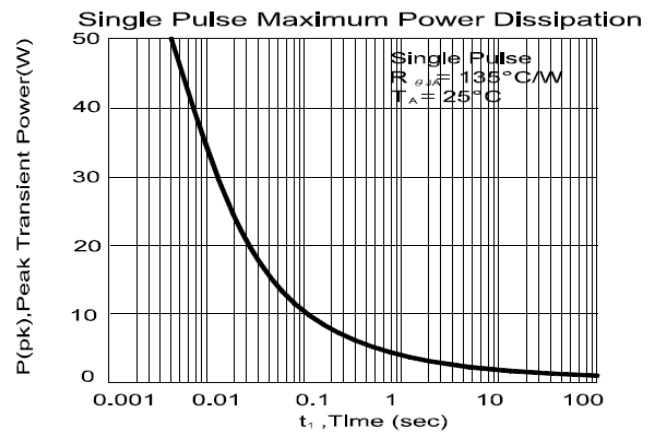
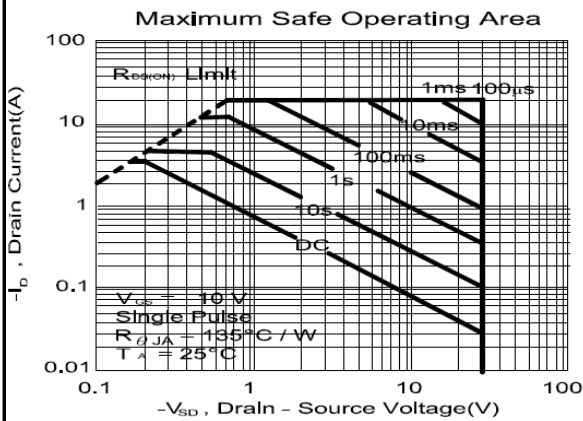
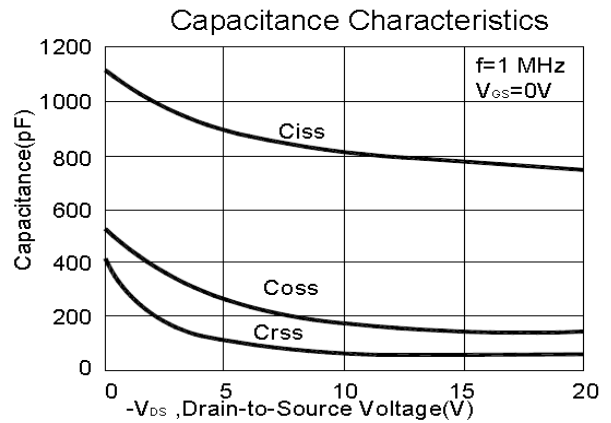
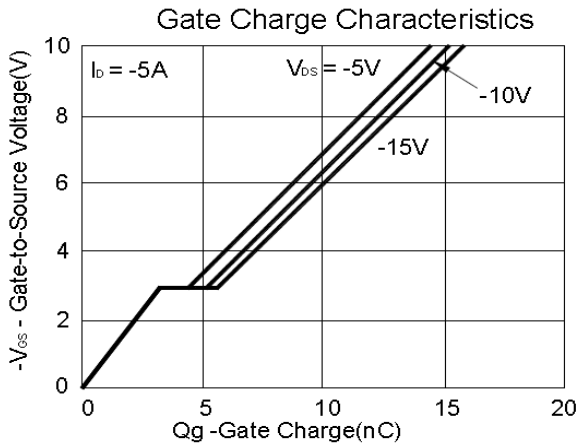


Body Diode Forward Voltage Variation with Source Current and Temperature



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Package Dimension

SOP-8 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.8	4.9	5.0	H	0.4	0.6	0.93
B	3.8	3.9	4.0	I	0.19	0.21	0.25
C	5.79	6.0	6.2	J	0.25	0.375	0.5
D	0.33	0.4	0.51	K	0°	3°	18°
E	1.25	1.27	1.29				
F	1.1	1.3	1.65				
G	0.05	0.15	0.25				

