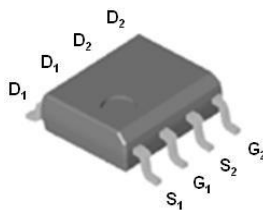


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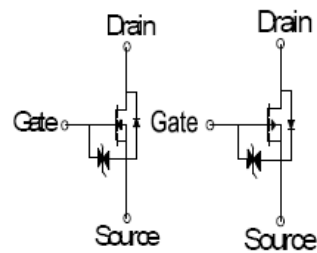
N&P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D	Channel
30V	21m Ω @ $V_{GS} = 10V$	8A	N
-30V	34m Ω @ $V_{GS} = -10V$	-6A	P



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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	8	A
			P	-6	
	$T_A = 70\text{ }^{\circ}\text{C}$		N	6	
			P	-5	
Pulsed Drain Current ¹		I_{DM}	N	36	
			P	-27	
Avalanche Current		I_{AS}	N	20	
			P	-20	
Avalanche Energy	L = 0.1mH	E_{AS}	N	21	mJ
			P	21	
Power Dissipation	$T_A = 25\text{ }^{\circ}\text{C}$	P_D	N	2	W
			P	2	
	$T_A = 70\text{ }^{\circ}\text{C}$		N	1.3	
			P	1.3	
Junction & Storage Temperature Range		T_J, T_{STG}		-55 to 150	$^{\circ}\text{C}$
Lead Temperature (¹ / ₁₆ " from case for 10 sec.)		T_L		275	

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THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		40	$^{\circ}\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT	
			MIN	TYP	MAX		
STATIC							
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	N	30		V	
		$V_{GS} = 0V, I_D = -250\mu A$	P	-30			
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	N	1.0	1.5	3.0	
		$V_{DS} = V_{GS}, I_D = -250\mu A$	P	-1.0	-1.5	-3.0	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 16V$	N			± 25	μA
		$V_{DS} = 0V, V_{GS} = \pm 16V$	P			± 25	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$	N			1	μA
		$V_{DS} = -24V, V_{GS} = 0V$	P			-1	
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 55^{\circ}C$	N			10	
		$V_{DS} = -20V, V_{GS} = 0V, T_J = 55^{\circ}C$	P			-10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 5V, V_{GS} = 10V$	N	36			A
		$V_{DS} = -5V, V_{GS} = -10V$	P	-27			
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 6A$	N		22	31	$m\Omega$
		$V_{GS} = -4.5V, I_D = -5A$	P		35	56	
		$V_{GS} = 10V, I_D = 7A$	N		16	21	
		$V_{GS} = -10V, I_D = -6A$	P		21	34	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 10V, I_D = 5A$	N		14		S
		$V_{DS} = -10V, I_D = -5A$	P		8		

DYNAMIC							
Input Capacitance	C _{iss}	N-Channel V _{GS} = 0V, V _{DS} = 15V, f = 1MHz	N		520		pF
			P		1060		
Output Capacitance	C _{oss}	P-Channel V _{GS} = 0V, V _{DS} = -15V, f = 1MHz	N		159		
			P		231		
Reverse Transfer Capacitance	C _{rss}		N		85		
			P		163		

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DYNAMIC							
Total Gate Charge ²	Q _g	N-Channel V _{DS} = 0.5V _{(BR)DSS} , V _{GS} = 10V, I _D = 7A P-Channel V _{DS} = 0.5V _{(BR)DSS} , V _{GS} = -10V, I _D = -6A	N		11		nC
			P		19		
Gate-Source Charge ²	Q _{gs}		N		2		
			P		4		
Gate-Drain Charge ²	Q _{gd}		N		2.5		
			P		3		
Turn-On Delay Time ²	t _{d(on)}	N-Channel V _{DS} = 15V I _D ≅ 1A, V _{GS} = 10V, R _{GEN} = 6 Ω P-Channel V _{DS} = -15V, R _L = 1 Ω I _D ≅ -1A, V _{GS} = -10V, R _{GEN} = 6 Ω	N		9		nS
			P		10		
Rise Time ²	t _r		N		11		
			P		15		
Turn-Off Delay Time ²	t _{d(off)}		N		18		
			P		68		
Fall Time ²	t _f		N		20		
			P		34		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _A = 25 °C)							
Continuous Current	I _S		N			8	A
			P			-6	
Forward Voltage ¹	V _{SD}	I _F = 7A, V _{GS} = 0V I _F = -6A, V _{GS} = 0V	N			1	V
			P			-1	
Reverse Recovery Time	t _{rr}	I _F = 7A, dI _F /dt = 100A / μS I _F = -6A, dI _F /dt = 100A / μS	N		15.5		nS
			P		15.5		
Reverse Recovery Charge	Q _{rr}		N		7.9		nC
			P		7.9		

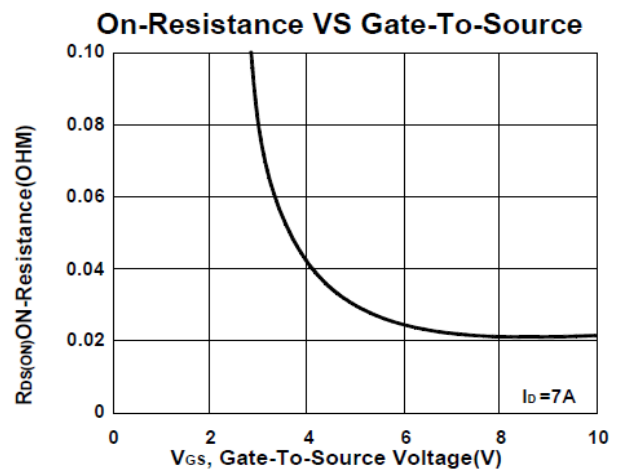
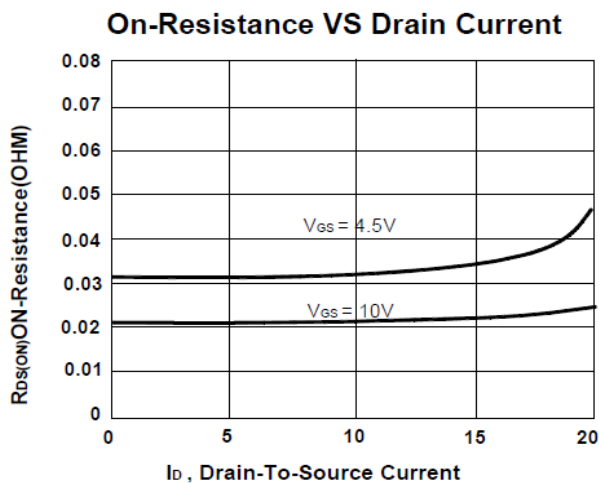
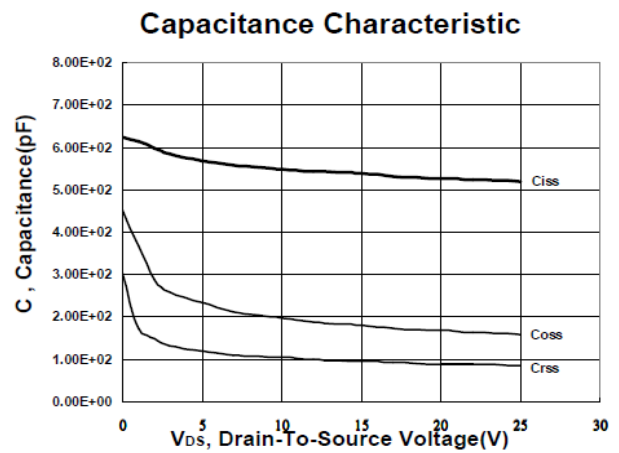
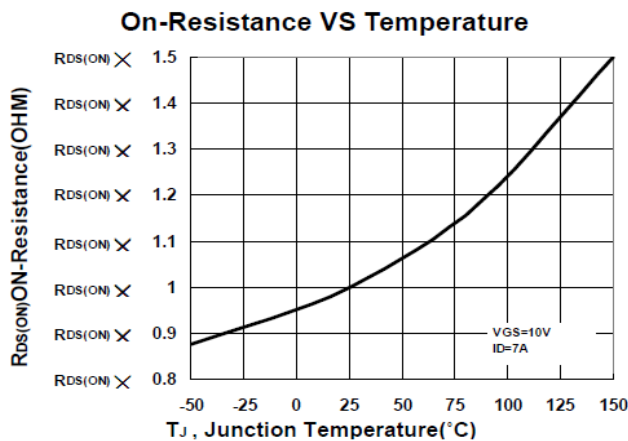
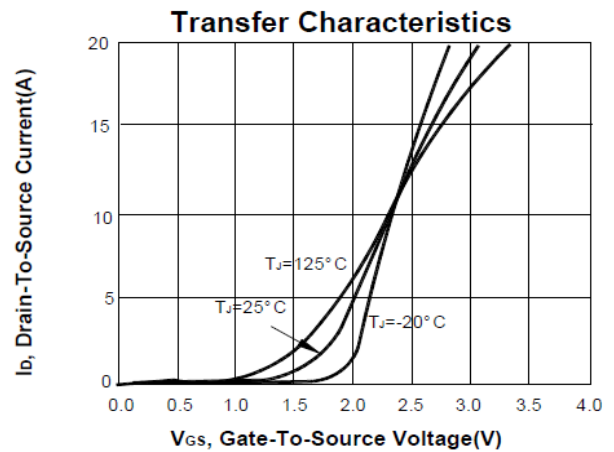
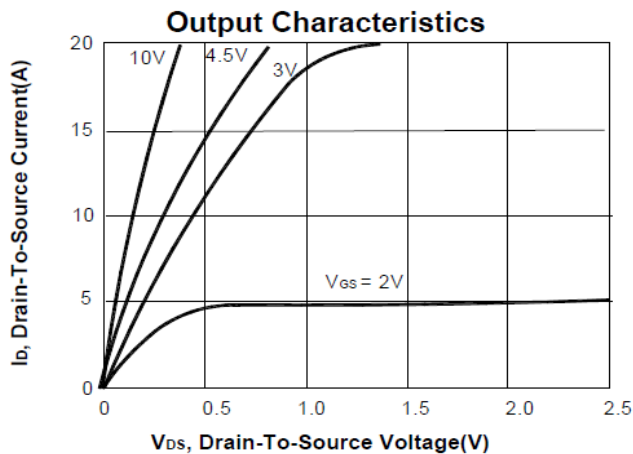
¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

Remark : ESD protected Gate.

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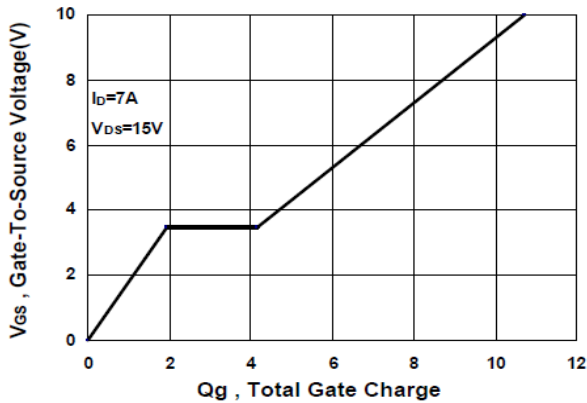
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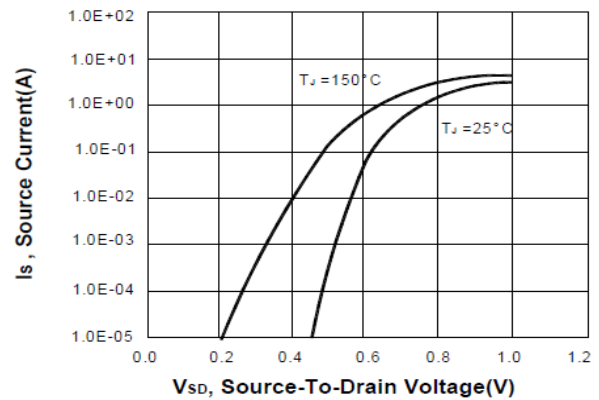
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N&P-Channel Enhancement Mode MOSFET

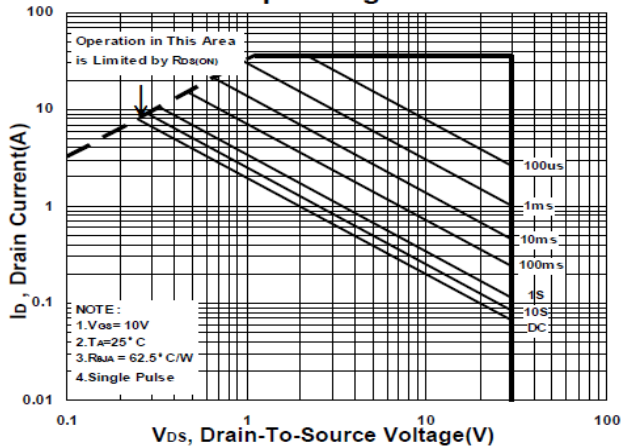
Gate charge Characteristics



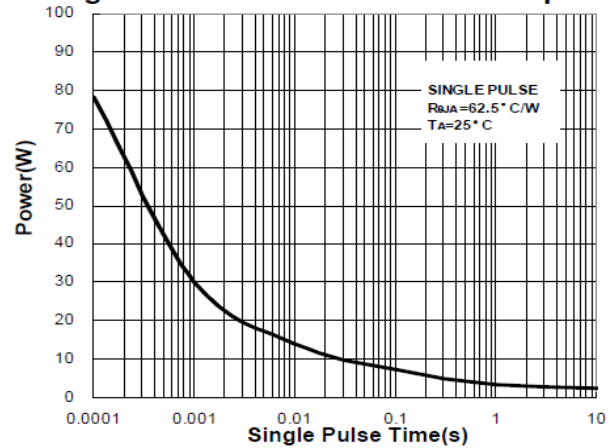
Source-Drain Diode Forward Voltage



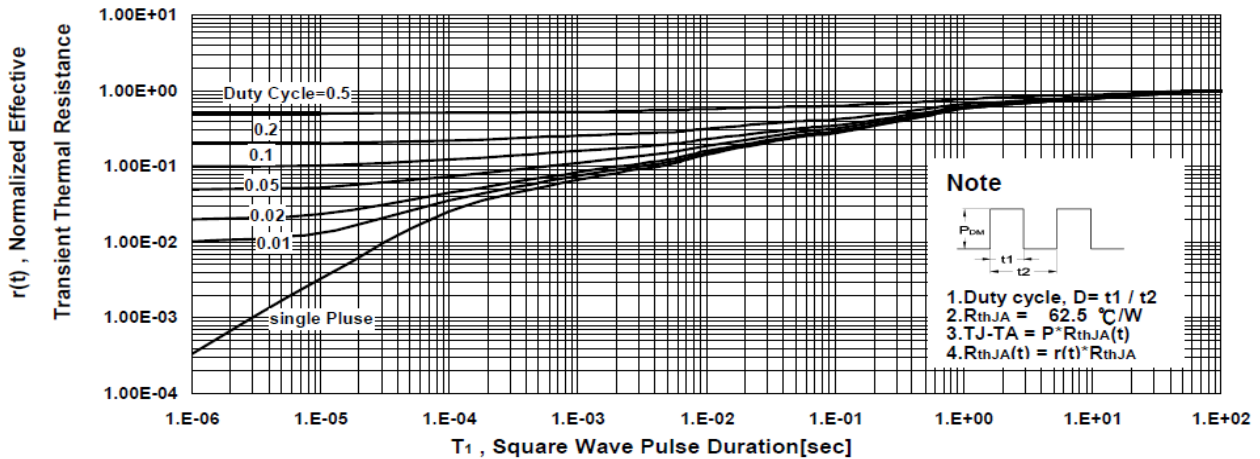
Safe Operating Area



Single Pulse Maximum Power Dissipation



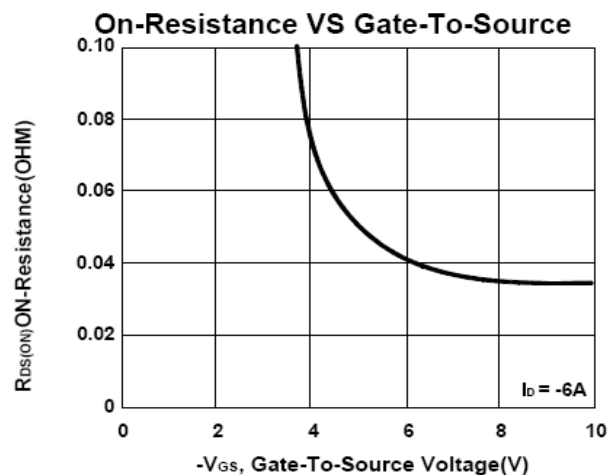
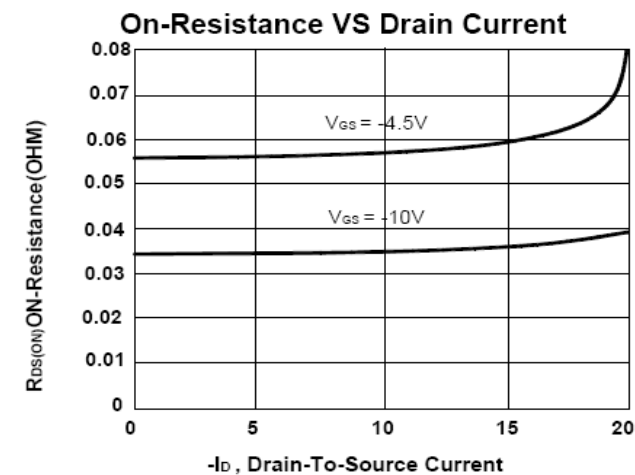
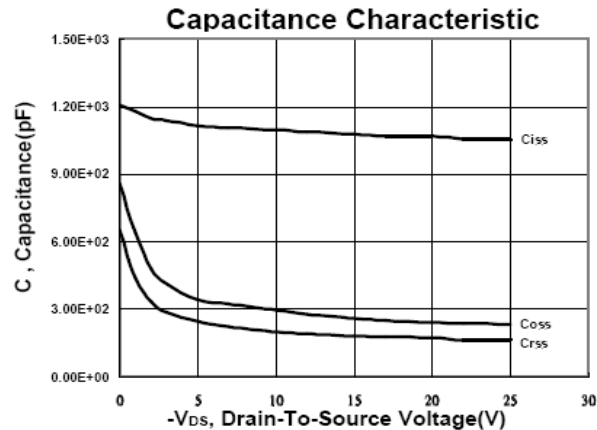
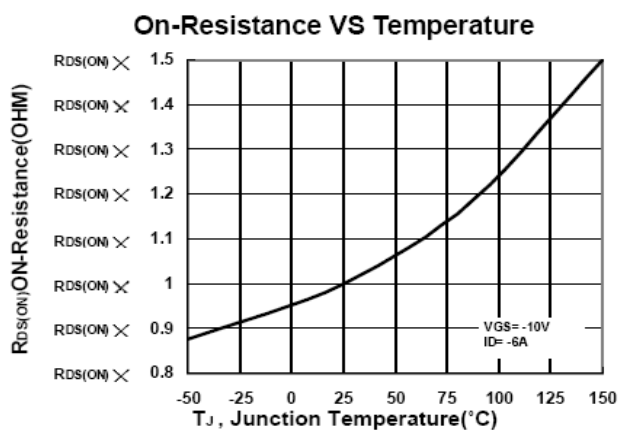
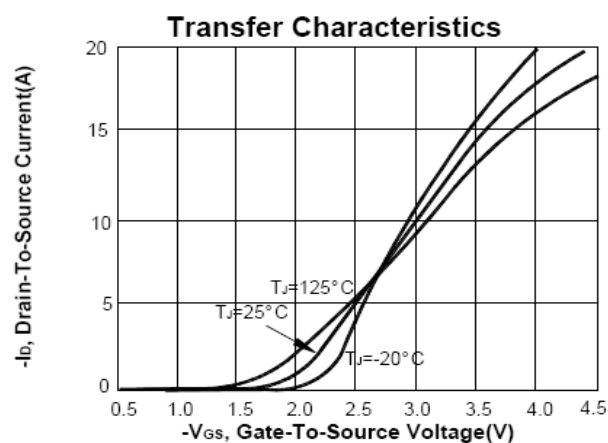
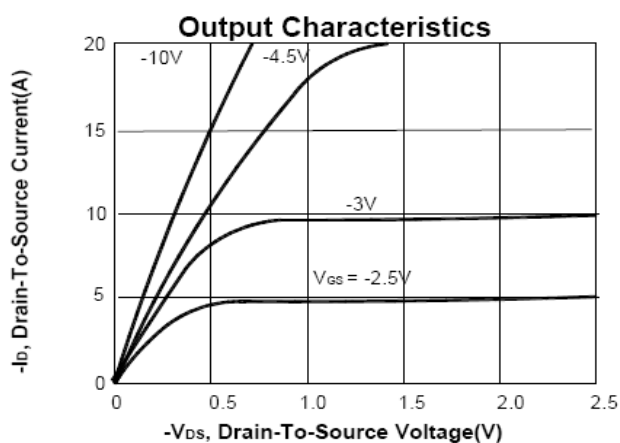
Transient Thermal Response Curve



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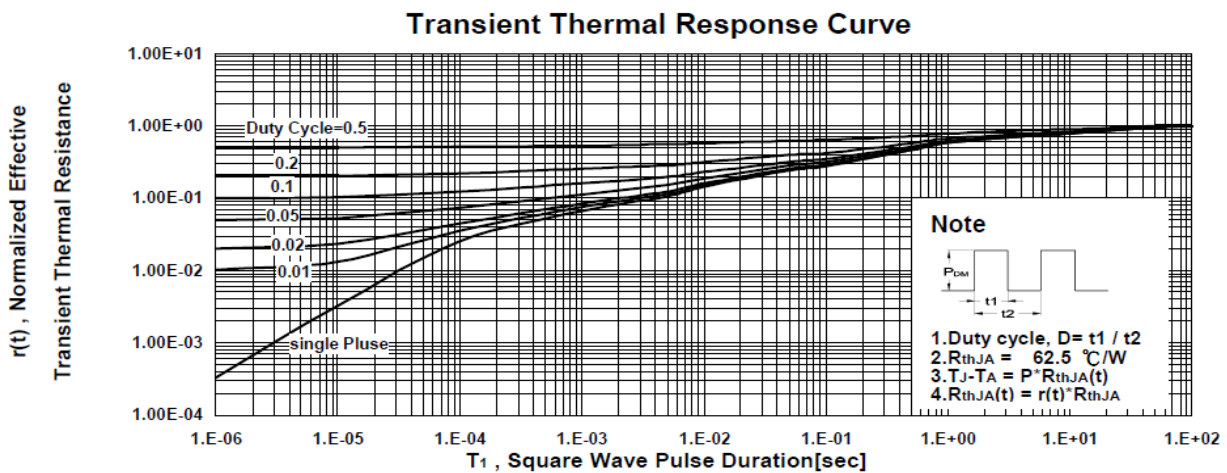
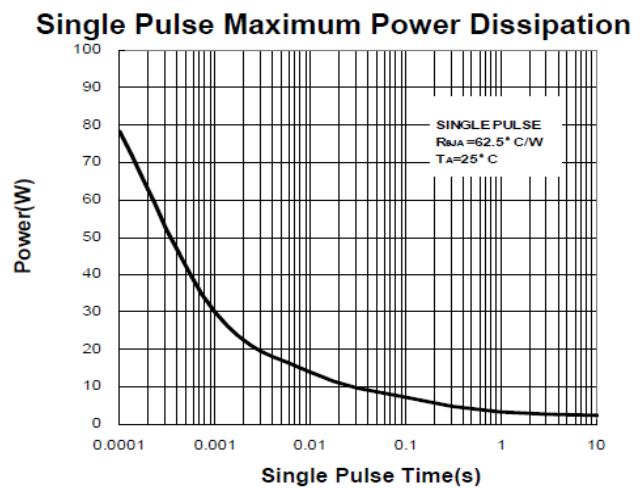
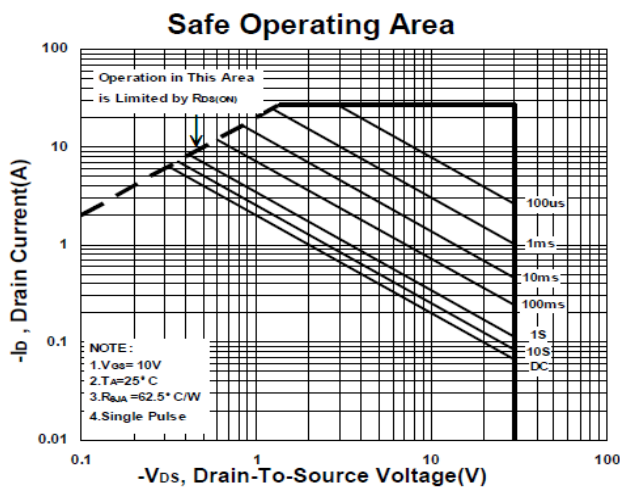
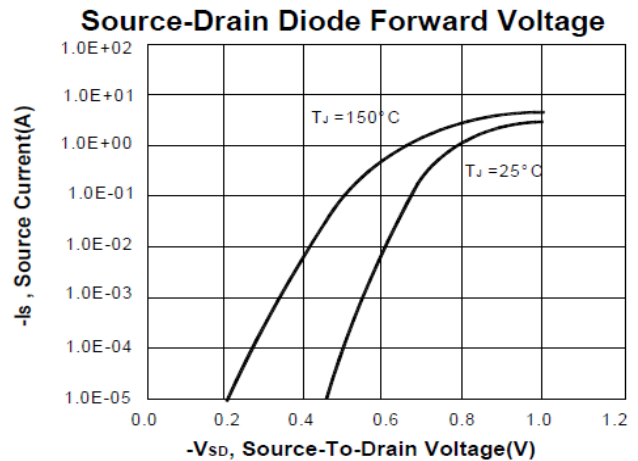
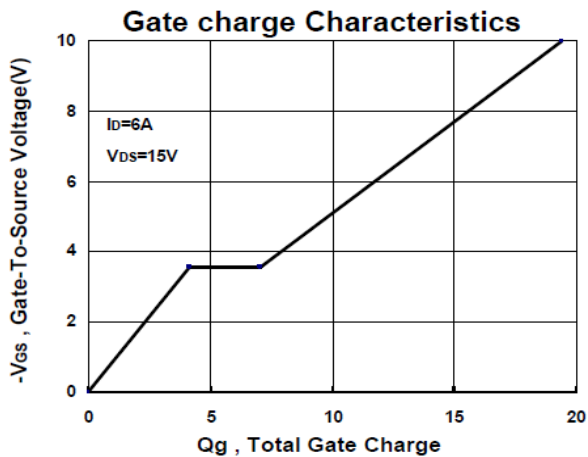
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TYPICAL PERFORMANCE CHARACTERISTICS P-CHANNEL



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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				

