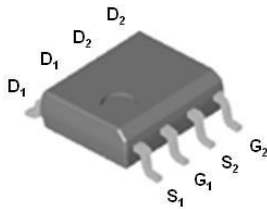


P2804NVG

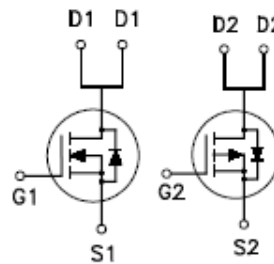
N&P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D	Channel
40V	28m Ω @ $V_{GS} = 10V$	7A	N
-40V	65m Ω @ $V_{GS} = -10V$	-6A	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	40	V
			P	-40	
Gate-Source Voltage		V_{GS}	N	± 20	
			P	± 20	
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	N	7	A
			P	-6	
	$T_A = 70\text{ }^\circ\text{C}$		N	6	
			P	-5	
Pulsed Drain Current ¹		I_{DM}	N	20	A
			P	-20	
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	N	2	W
			P		
	$T_A = 70\text{ }^\circ\text{C}$		N	1.3	
			P		
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	

P2804NVG

N&P-Channel Enhancement Mode MOSFET

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$	48	62.5	°C / W

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$.

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

PARAMETER	SYMBOL	TEST CONDITIONS	CH.	LIMITS			UNITS
				MIN	TYP	MAX	
STATIC							
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	N	40			V
		$V_{GS} = 0V, I_D = -250\mu A$	P	-40			
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	N	1	2	3	V
		$V_{DS} = V_{GS}, I_D = -250\mu A$	P	-1	-2	-3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$	N			± 100	nA
		$V_{DS} = 0V, V_{GS} = \pm 20V$	P			± 100	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 32V, V_{GS} = 0V$	N			1	μA
		$V_{DS} = -32V, V_{GS} = 0V$	P			-1	
		$V_{DS} = 30V, V_{GS} = 0V, T_J = 55\text{ }^\circ\text{C}$	N			10	
		$V_{DS} = -30V, V_{GS} = 0V, T_J = 55\text{ }^\circ\text{C}$	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	$R_{DS(ON)}$	$V_{GS} = 5V, I_D = 6A$	N		27	42	m Ω
		$V_{GS} = -5V, I_D = -4.5A$	P		80	94	
		$V_{GS} = 10V, I_D = 7A$	N		21	28	
		$V_{GS} = -10V, I_D = -5A$	P		50	65	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 10V, I_D = 7A$	N		19		S
		$V_{DS} = -10V, I_D = -5A$	P		11		

P2804NVG

N&P-Channel Enhancement Mode MOSFET

DYNAMIC							
Input Capacitance	C_{iss}	N-Channel $V_{GS} = 0V, V_{DS} = 10V, f = 1MHz$	N		790	988	pF
			P		690	863	
Output Capacitance	C_{oss}	P-Channel $V_{GS} = 0V, V_{DS} = -10V, f = 1MHz$	N		175	245	
			P		310	430	
Reverse Transfer Capacitance	C_{rss}	N-Channel $V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 10V, I_D = 7A$	N		65	98	nC
			P		75	113	
Total Gate Charge ²	Q_g	P-Channel $V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = -10V, I_D = -5A$	N		16		
Gate-Source Charge ²	Q_{gs}		P		14		
Gate-Drain Charge ²	Q_{gd}	N-Channel $V_{DS} = 20V, I_D \cong 1A, V_{GS} = 10V, R_{GEN} = 6\Omega$	N		2.5		
			P		2.2		
Turn-On Delay Time ²	$t_{d(on)}$	P-Channel $V_{DS} = -20V, R_L = 1\Omega, I_D \cong -1A, V_{GS} = -10V, R_{GEN} = 6\Omega$	N		2.1		nS
			P		1.9		
Rise Time ²	t_r	N-Channel $V_{DS} = 20V, I_D \cong 1A, V_{GS} = 10V, R_{GEN} = 6\Omega$	N		2.2	4.4	
			P		6.7	13.4	
Turn-Off Delay Time ²	$t_{d(off)}$	P-Channel $V_{DS} = -20V, R_L = 1\Omega, I_D \cong -1A, V_{GS} = -10V, R_{GEN} = 6\Omega$	N		7.5	15	
			P		9.7	19.4	
Fall Time ²	t_f	N-Channel $V_{DS} = 20V, I_D \cong 1A, V_{GS} = 10V, R_{GEN} = 6\Omega$	N		11.8	21.3	
			P		19.8	35.6	
		P-Channel $V_{DS} = -20V, R_L = 1\Omega, I_D \cong -1A, V_{GS} = -10V, R_{GEN} = 6\Omega$	N		3.7	7.4	
			P		12.3	22.2	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)							
Continuous Current	I_S		N			1.3	A
			P			-1.3	
Pulsed Current ³	I_{SM}		N			2.6	
			P			-2.6	
Forward Voltage ¹	V_{SD}	$I_F = I_S, V_{GS} = 0V$	N			1	V
		$I_F = I_S, V_{GS} = 0V$	P			-1	

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

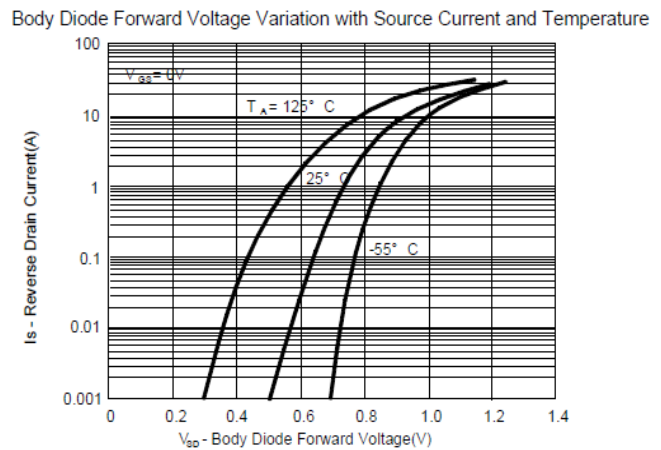
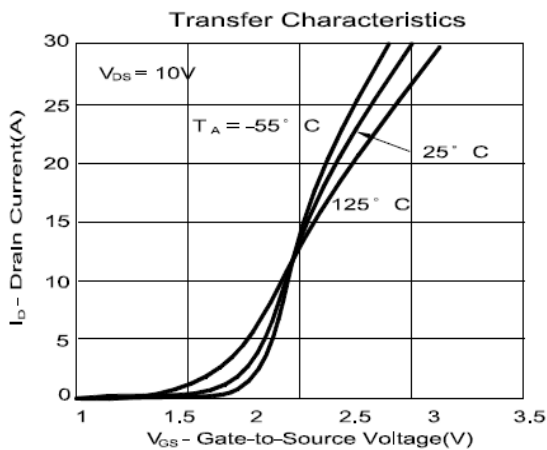
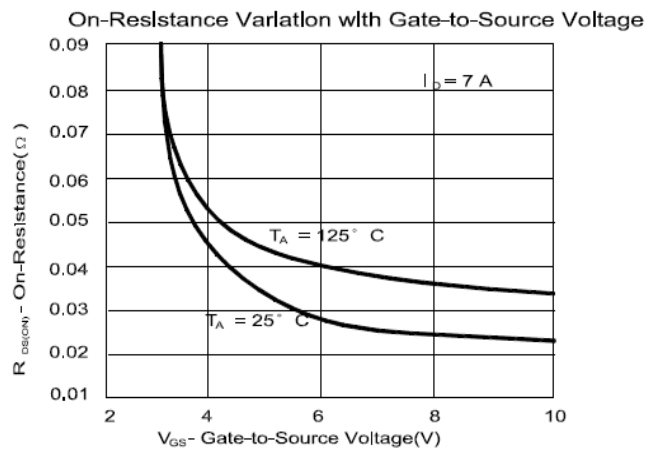
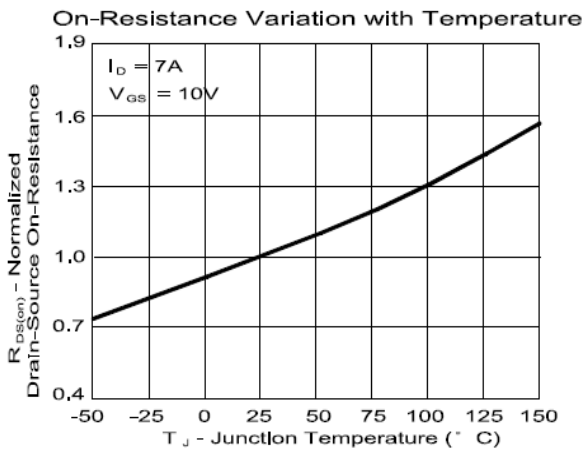
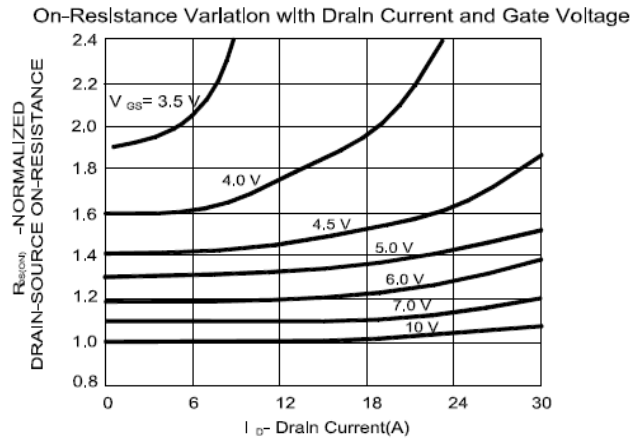
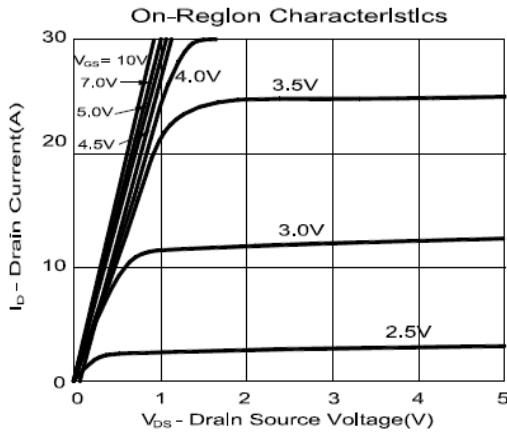
²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

P2804NVG

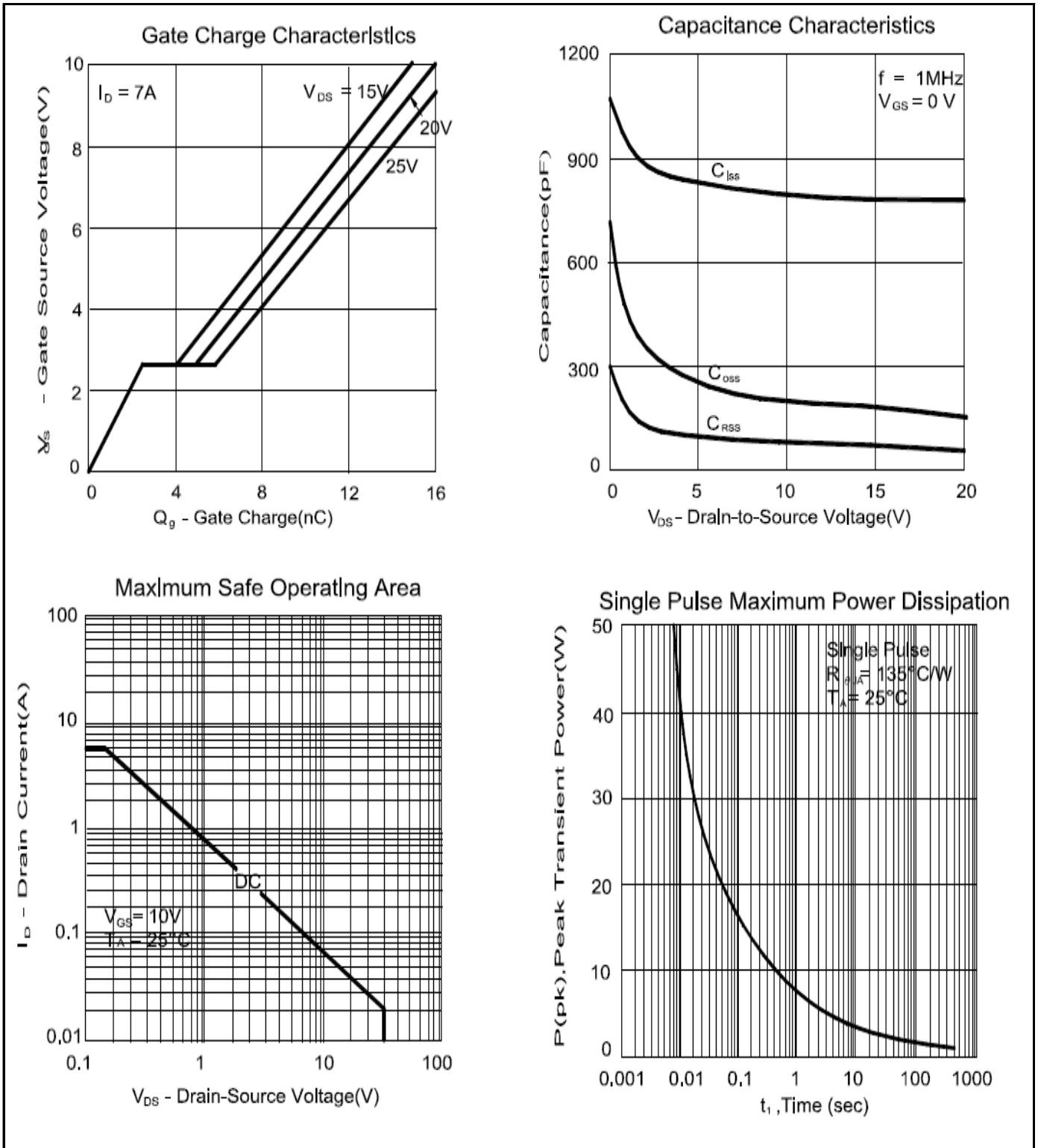
N&P-Channel Enhancement Mode MOSFET

TYPICAL PERFORMANCE CHARACTERISTICS N-CHANNEL



P2804NVG

N&P-Channel Enhancement Mode MOSFET

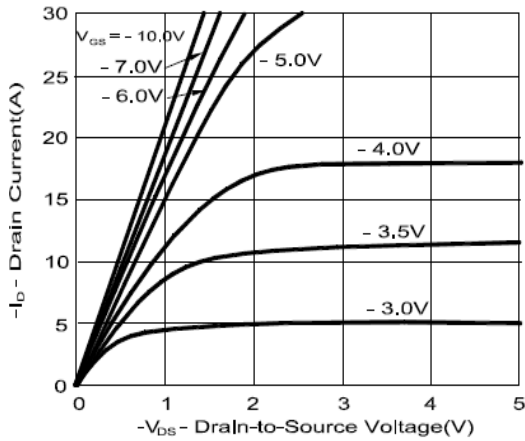


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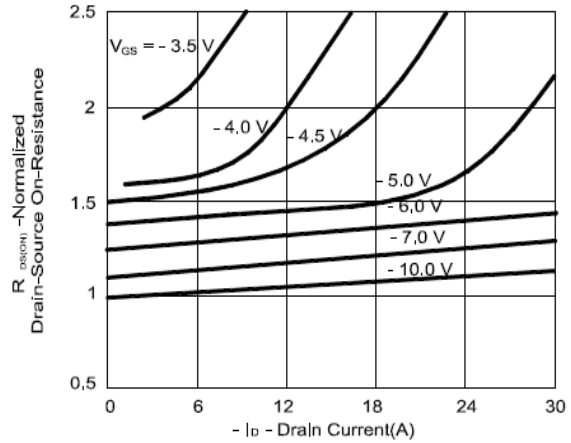
N&P-Channel Enhancement Mode MOSFET

P-CHANNEL

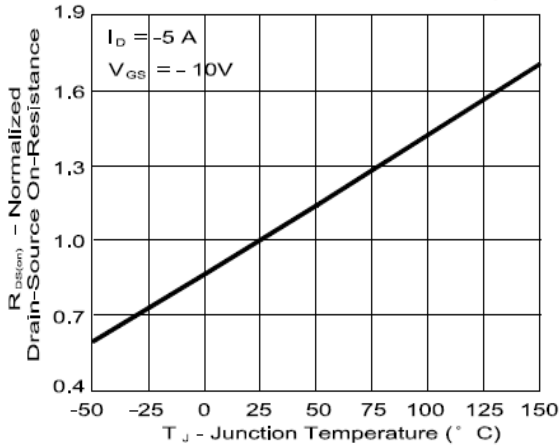
On-Region Characteristics



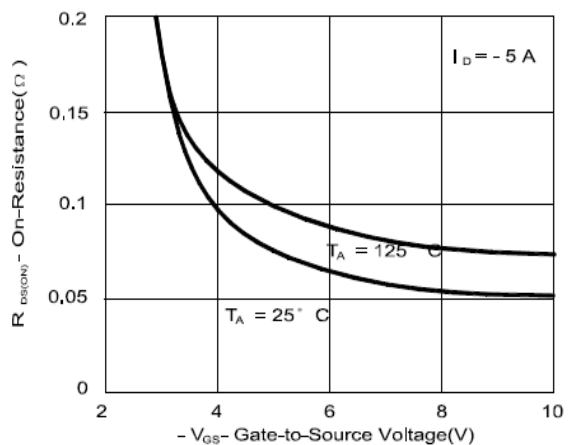
On-Resistance Variation with Drain Current and Gate Voltage



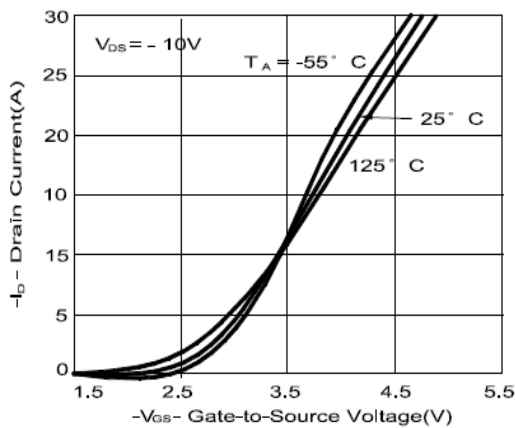
On-Resistance Variation with Temperature



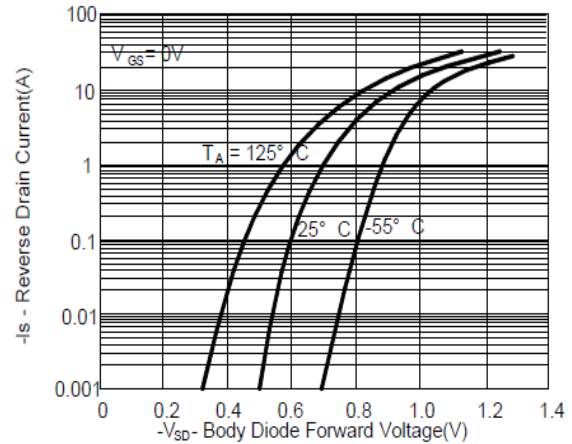
On-Resistance Variation with Gate-to-Source Voltage



Transfer Characteristics

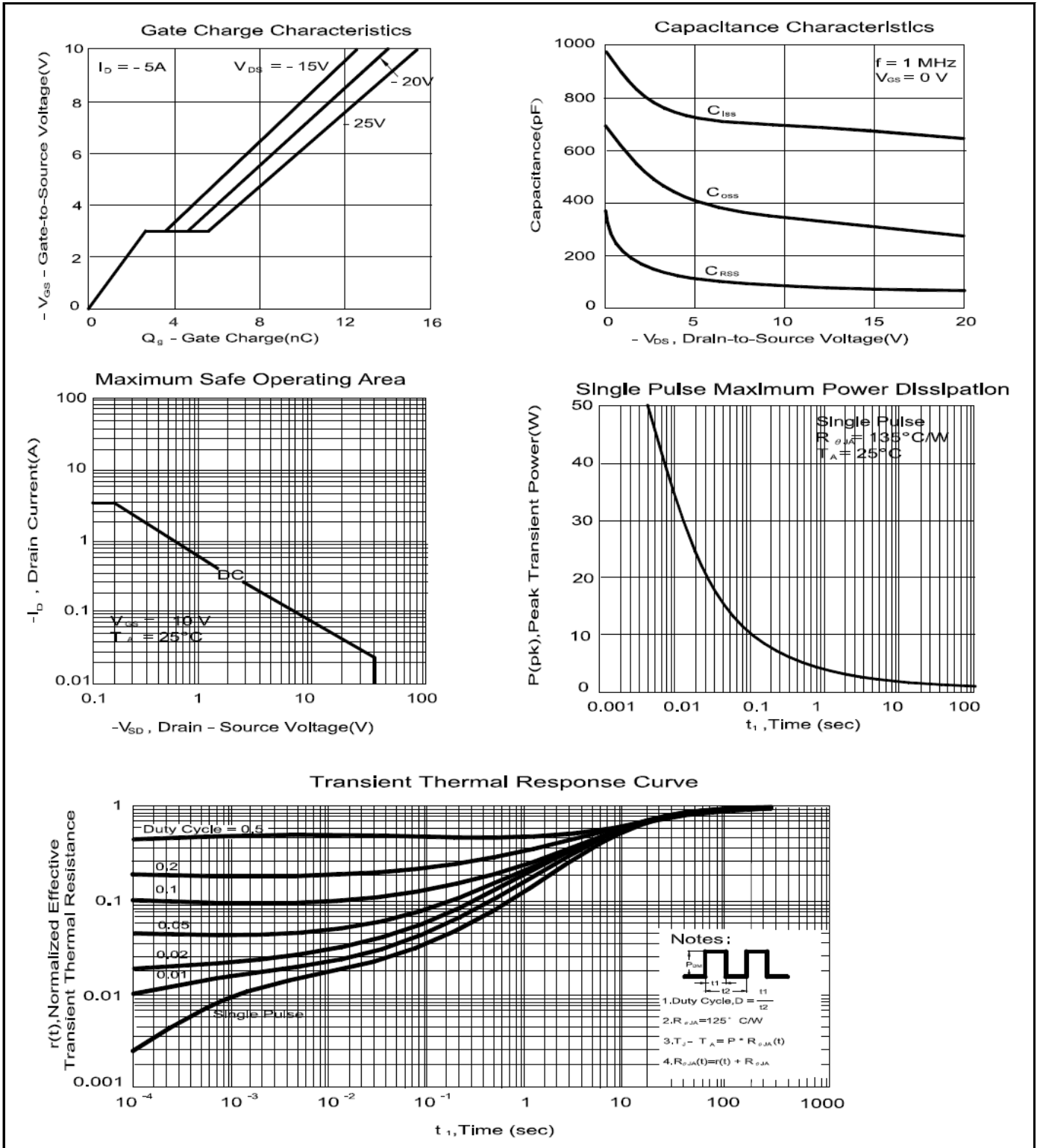


Body Diode Forward Voltage Variation with Source Current and Temperature



P2804NVG

N&P-Channel Enhancement Mode MOSFET



P2804NVG

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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				

