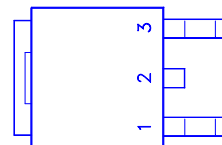
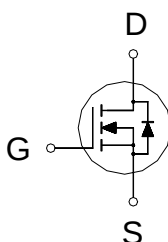


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
40V	28m Ω	10A



1. GATE
2. DRAIN
3. SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	40	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	10	A
	$T_C = 100\text{ }^{\circ}\text{C}$		8	
Pulsed Drain Current ¹		I_{DM}	40	
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	32	W
	$T_C = 100\text{ }^{\circ}\text{C}$		22	
Operating 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	

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		3	$^{\circ}\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		75	$^{\circ}\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$
ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	40			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.5	2.5	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 250	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 32V, V_{GS} = 0V$			1	μA
		$V_{DS} = 30V, V_{GS} = 0V, T_C = 125\text{ }^{\circ}C$			10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 10V, V_{GS} = 10V$	40			A

Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 8A		30	42	mΩ
		V _{GS} = 10V, I _D = 10A		21	28	
Forward Transconductance ¹	g _{fs}	V _{DS} = 10V, I _D = 10A		19		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 10V, f = 1MHz		790		pF
Output Capacitance	C _{oss}			175		
Reverse Transfer Capacitance	C _{rss}			65		
Total Gate Charge ²	Q _g	V _{DS} = 0.5V _{(BR)DSS} , V _{GS} = 10V, I _D = 10A		16		nC
Gate-Source Charge ²	Q _{gs}			2.5		
Gate-Drain Charge ²	Q _{gd}			2.1		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 20V, R _L = 1Ω I _D ≅ 1A, V _{GS} = 10V, R _{GEN} = 6Ω		2.2	4.4	nS
Rise Time ²	t _r			7.5	15	
Turn-Off Delay Time ²	t _{d(off)}			11.8	21.3	
Fall Time ²	t _f			3.7	7.4	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _C = 25 °C)						
Continuous Current	I _S				1.3	A
Pulsed Current ³	I _{SM}				2.6	
Forward Voltage ¹	V _{SD}	I _S = I _S , V _{GS} = 0V			1	V
Reverse Recovery Time	t _{rr}	I _F = 5 A, dI _F /dt = 100A / μS		15.5		nS
Reverse Recovery Charge	Q _{rr}			7.9		nC

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

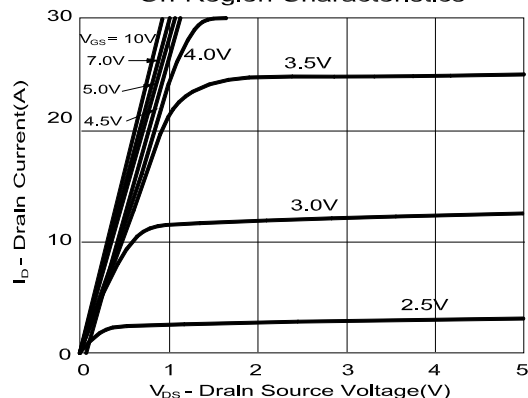
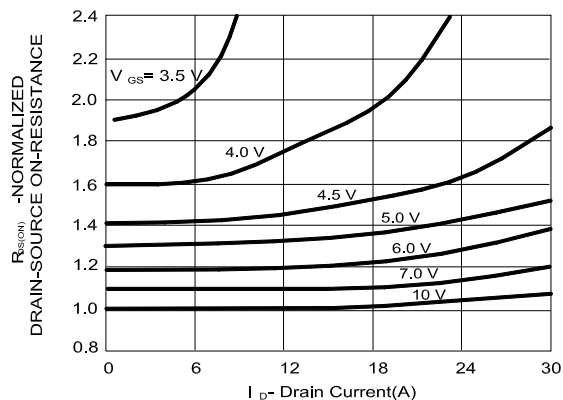
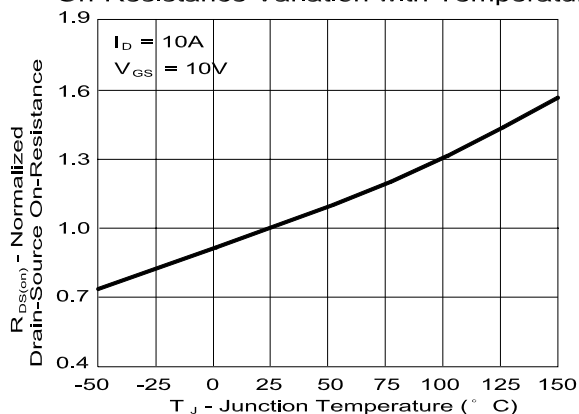
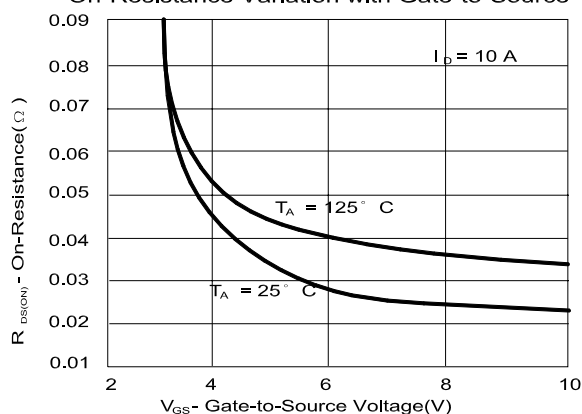
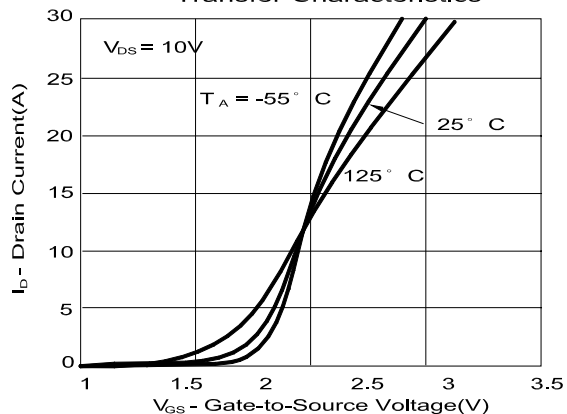
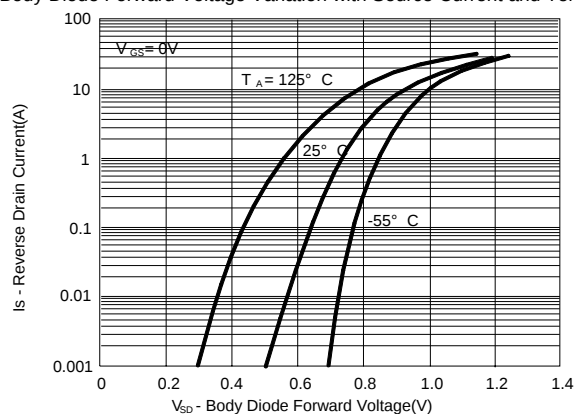
²Independent of operating temperature.

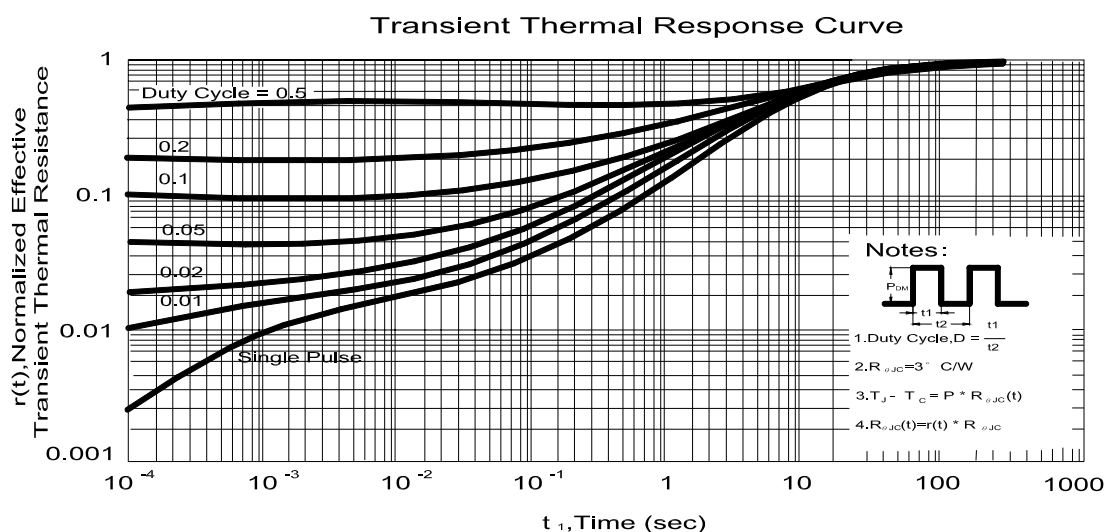
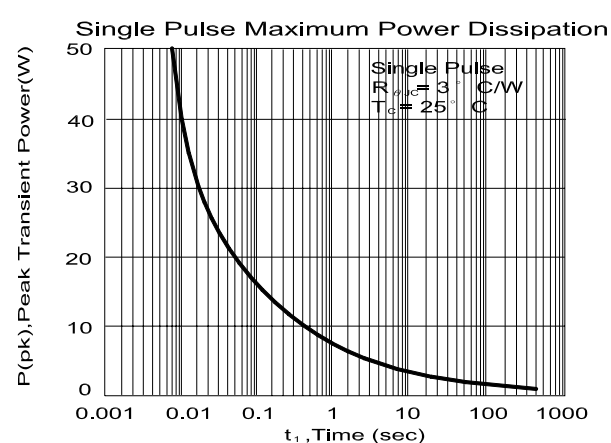
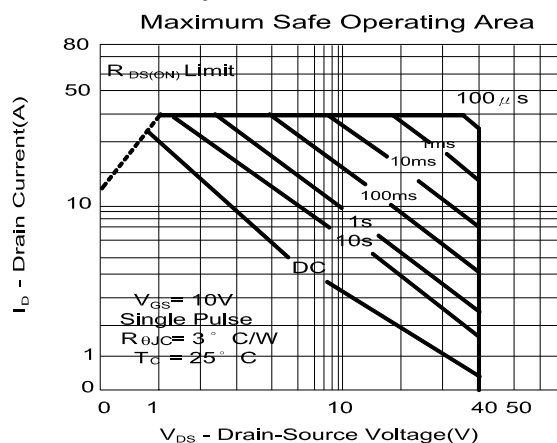
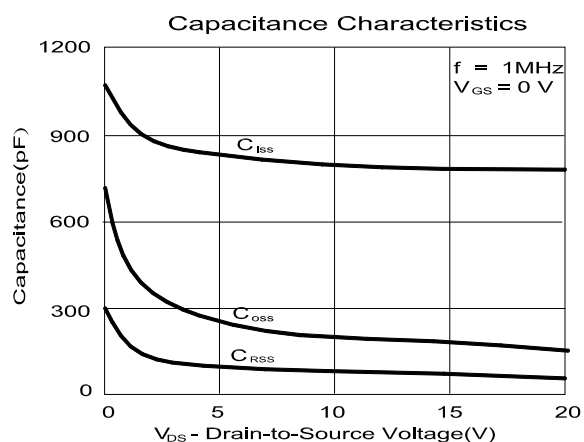
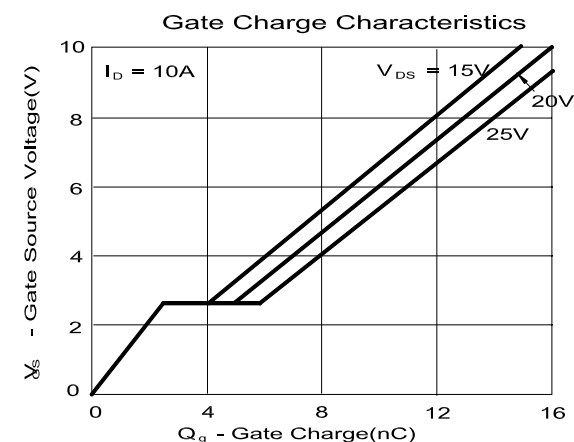
³Pulse width limited by maximum junction temperature.

REMARK: THE PRODUCT MARKED WITH "P2804BDG", DATE CODE or LOT #

Orders for parts with Lead-Free plating can be placed using the PXXXXXXG parts name.

TYPICAL PERFORMANCE CHARACTERISTICS

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




TO-252 (DPAK) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	9.35		10.4	H	0.89		2.03
B	2.2		2.4	I	6.35		6.80
C	0.45		0.6	J	5.2		5.5
D	0.89		1.5	K	0.6		1
E	0.45		0.69	L	0.5		0.9
F	0.03		0.23	M	3.96	4.57	5.18
G	5.2		6.2	N			

