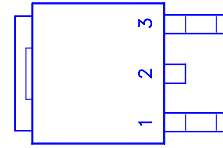
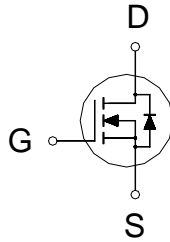


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30	25m	12A



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}	30	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	I_D	12	A
	$T_C = 70\text{ }^\circ\text{C}$		10	
Pulsed Drain Current ¹		I_{DM}	30	
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	32	W
	$T_C = 70\text{ }^\circ\text{C}$		22	
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-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	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			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}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 55\text{ }^\circ\text{C}$			10	

On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 5V, V_{GS} = 10V$	30			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 6A$		25	37	m
		$V_{GS} = 10V, I_D = 12A$		18	25	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 12A$		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	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 10V, I_D = 12A$			16	nC	
Gate-Source Charge ²	Q_{gs}				2.5		
Gate-Drain Charge ²	Q_{gd}				2.1		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = 10V, I_D \cong 1A, V_{GS} = 10V, R_{GEN} = 6$			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}	$I_F = 1A, V_{GS} = 0V$			1	V

¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

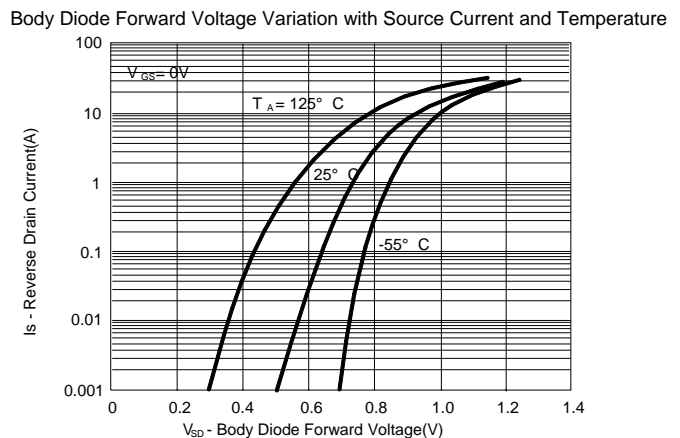
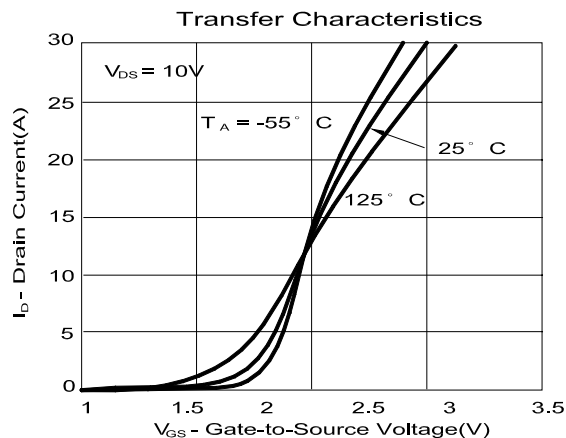
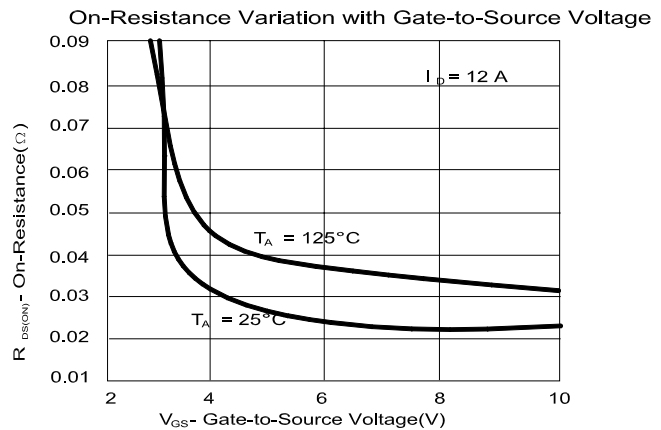
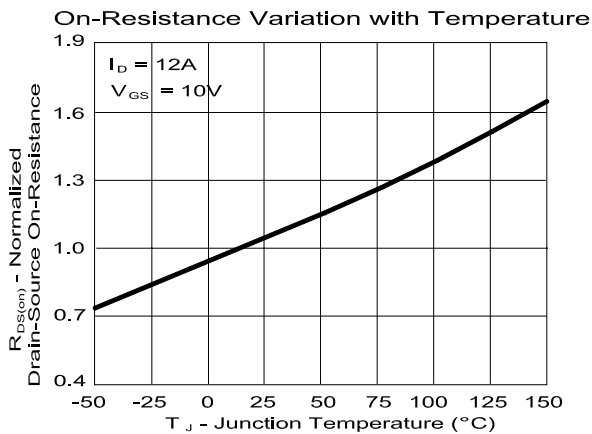
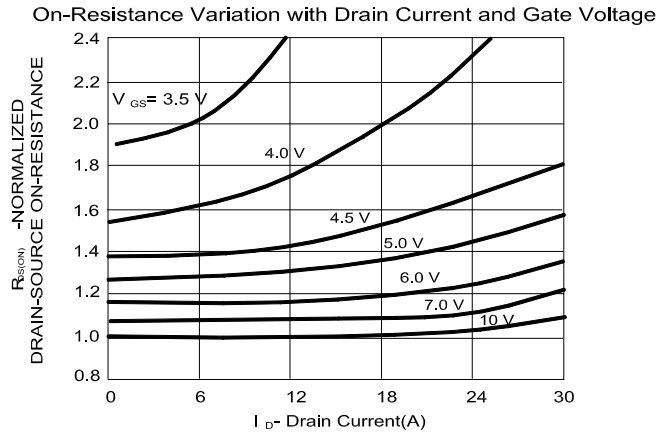
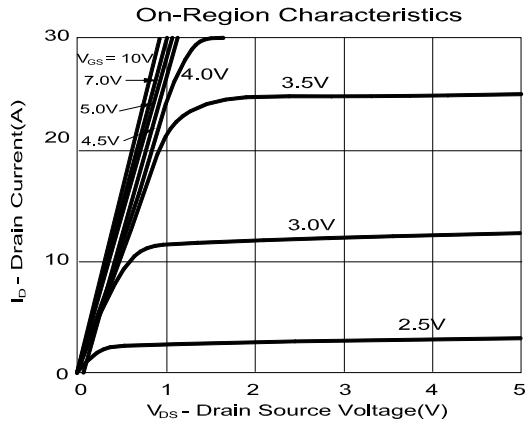
²Independent of operating temperature.

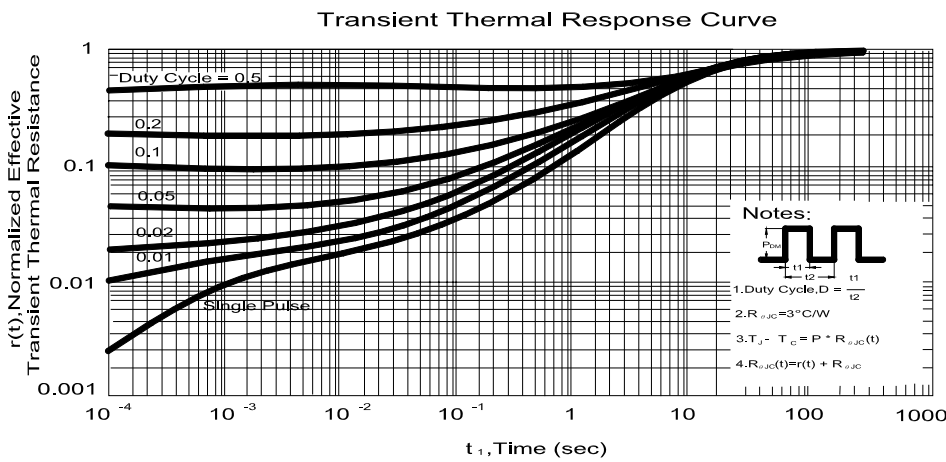
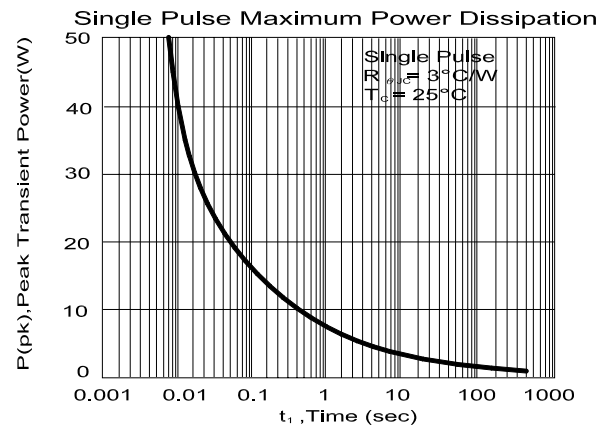
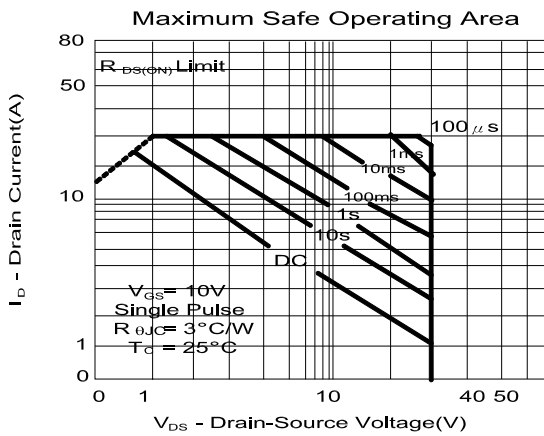
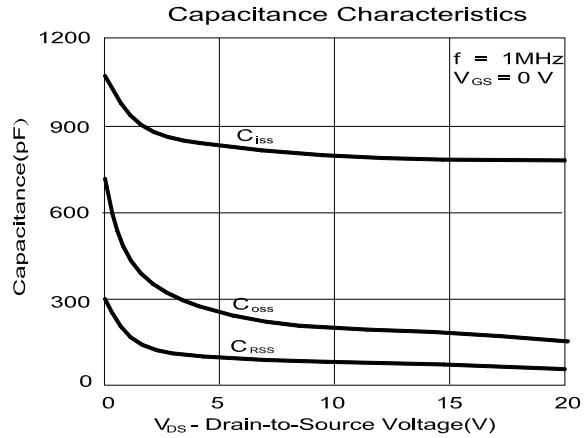
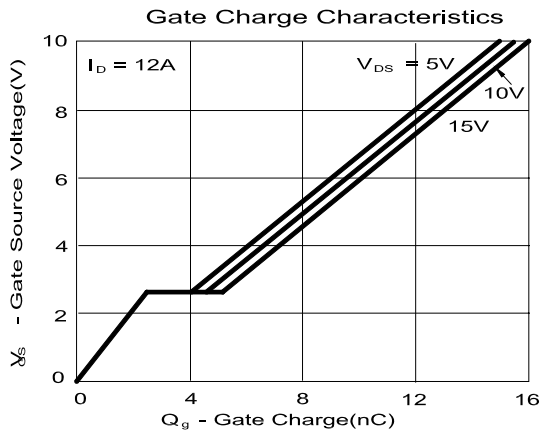
³Pulse width limited by maximum junction temperature.

REMARK: THE PRODUCT MARKED WITH “P2503BDG”, DATE CODE or LOT #

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

TYPICAL PERFORMANCE CHARACTERISTICS





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			

