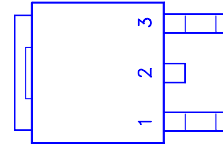
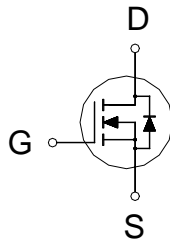


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
25	20m	35A



- 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
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	I_D	35	A
	$T_C = 100\text{ }^\circ\text{C}$		25	
Pulsed Drain Current ¹		I_{DM}	120	
Avalanche Current		I_{AR}	15	mJ
Avalanche Energy	$L = 0.133\text{mH}$	E_{AS}	15	
Repetitive Avalanche Energy ²	$L = 0.05\text{mH}$	E_{AR}	5.6	
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	50	W
	$T_C = 100\text{ }^\circ\text{C}$		35	
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	$R_{\theta JC}$		2.5	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		75	
Case-to-Heatsink	$R_{\theta CS}$	0.7		

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	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	25			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1.0	1.5	3.0	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$			± 250	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20\text{V}, V_{GS} = 0\text{V}$			25	μA
		$V_{DS} = 20\text{V}, V_{GS} = 0\text{V}, T_J = 125\text{ }^\circ\text{C}$			250	

On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 10V, V_{GS} = 10V$	35			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 15A$		23	31	m
		$V_{GS} = 10V, I_D = 15A$		15.5	20	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 15V, I_D = 30A$	14	28		S

DYNAMIC

Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		530	700	pF
Output Capacitance	C_{oss}			200	275	
Reverse Transfer Capacitance	C_{rss}			60	90	
Total Gate Charge ²	Q_g	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 10V,$ $I_D = 15A$		8.4	11	nC
Gate-Source Charge ²	Q_{gs}			2.5	3.1	
Gate-Drain Charge ²	Q_{gd}			6.4	9.6	
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = 15V$ $I_D \cong 15A, V_{GS} = 10V, R_{GS} = 12.7$		6.2	9.3	nS
Rise Time ²	t_r			11	17	
Turn-Off Delay Time ²	$t_{d(off)}$			23	34	
Fall Time ²	t_f			18	27	

SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_C = 25 °C)

Continuous Current	I_S				35	A
Pulsed Current ³	I_{SM}				120	
Forward Voltage ¹	V_{SD}	$I_F = I_S, V_{GS} = 0V$		1.1	1.4	V
Reverse Recovery Time	t_{rr}			15	18	nS
Reverse Recovery Charge	Q_{rr}			2	3	nC

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

²Independent of operating temperature.

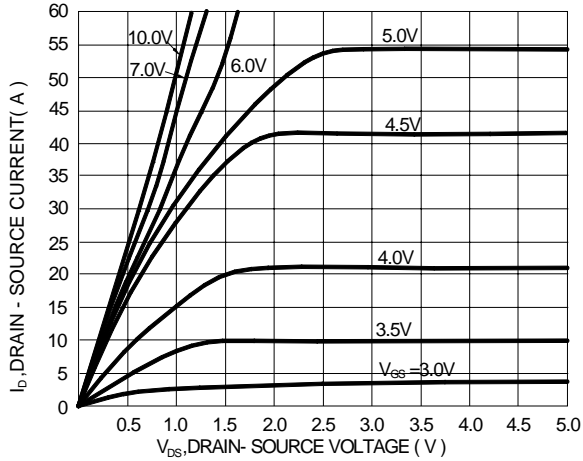
³Pulse width limited by maximum junction temperature.

REMARK: THE PRODUCT MARKED WITH “P2003BDG”, DATE CODE or LOT #

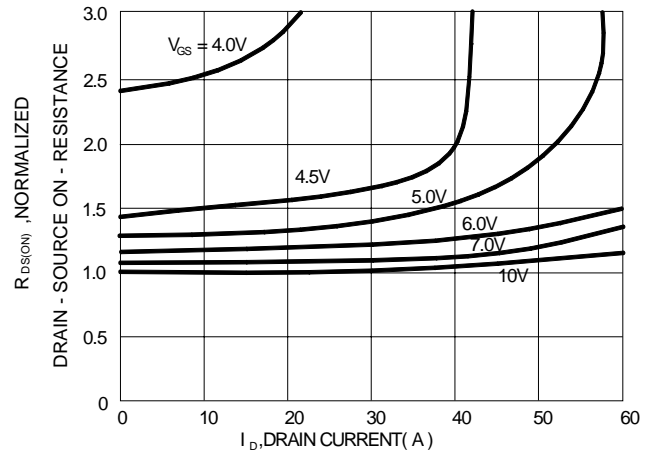
Orders for parts with Lead-Free plating can be placed using the PXXXXXXG parts name.

TYPICAL CHARACTERISTICS

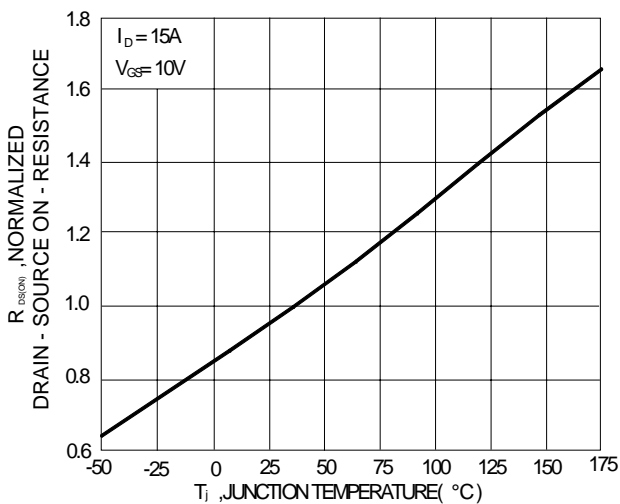
ON-REGION CHARACTERISTIC



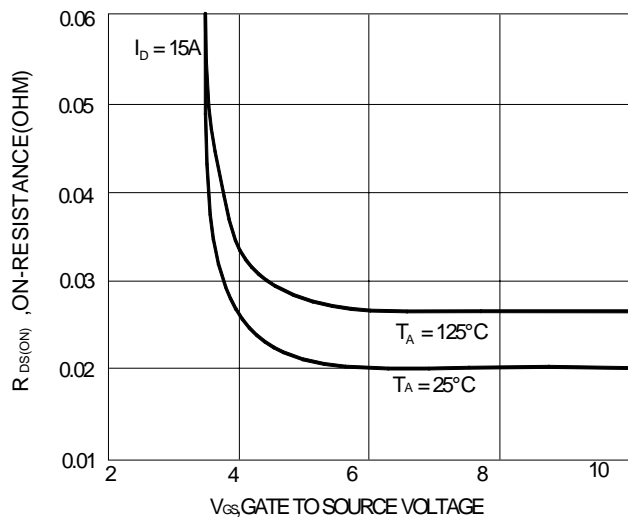
ON- RESISTANCE VARIATION WITH DRAIN CURRENT AND GATE VOLTAGE



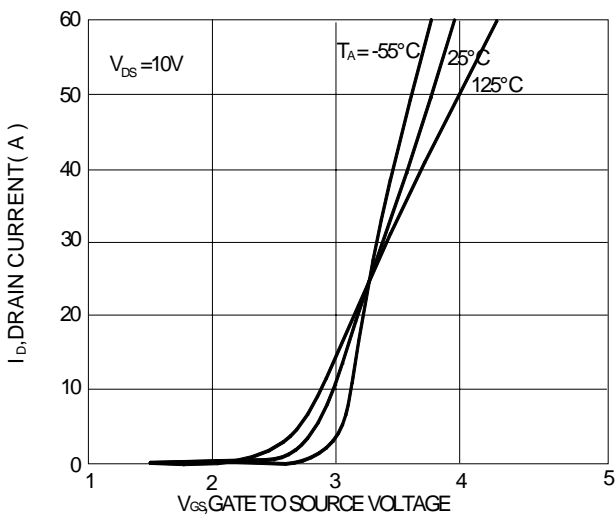
ON- RESISTANCE VARIATION WITH TEMPERATURE



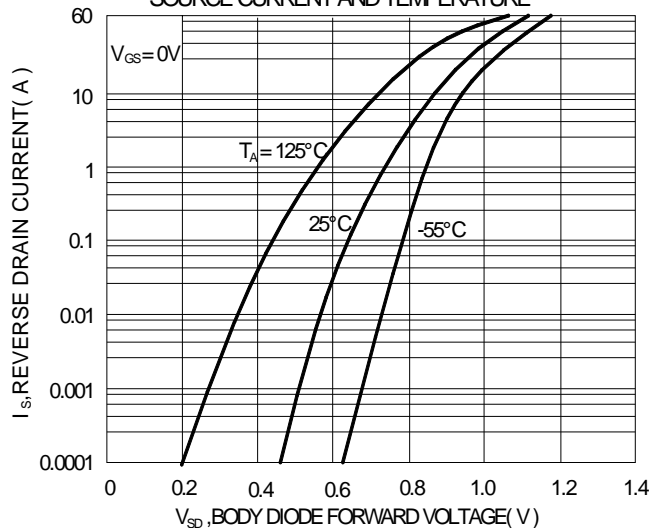
ON-RESISTANCE VARIATION WITH GATE-TO-SOURCE VOLTAGE

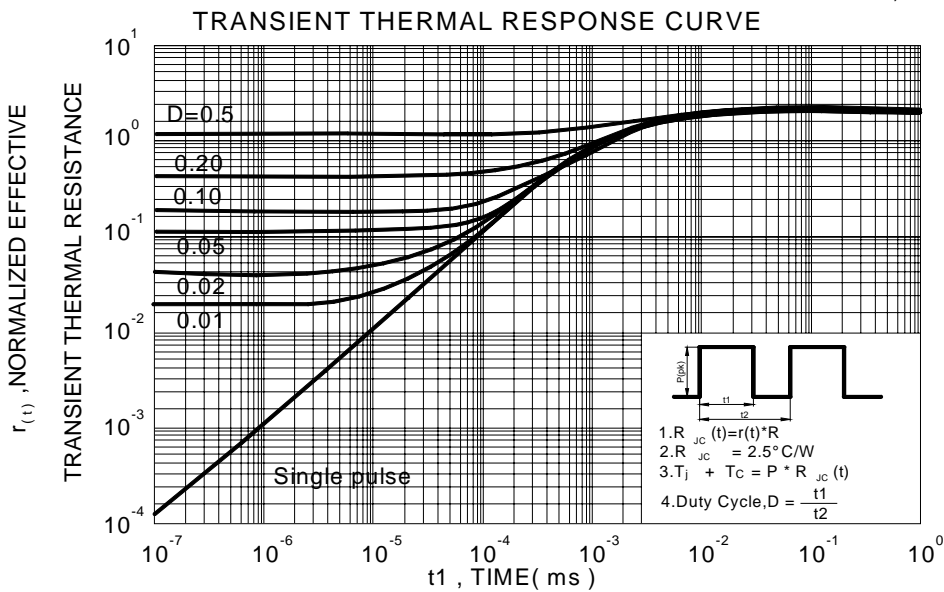
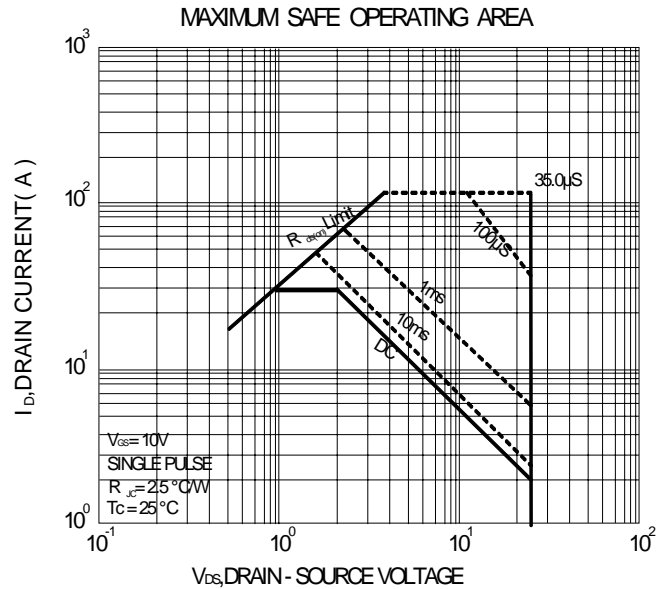
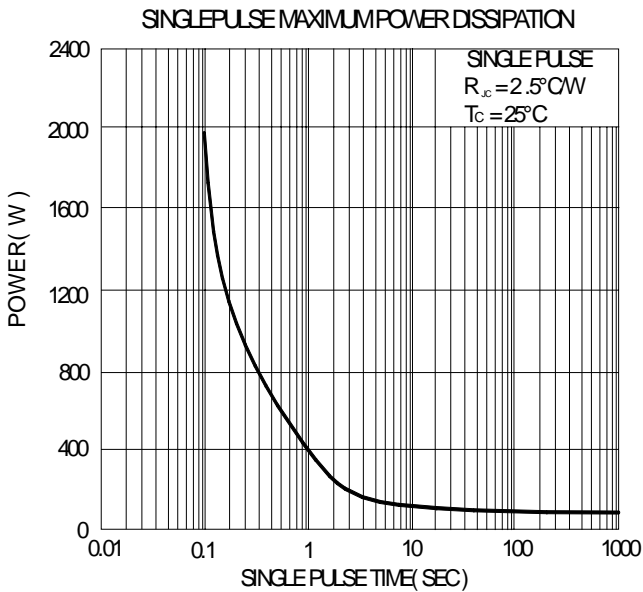
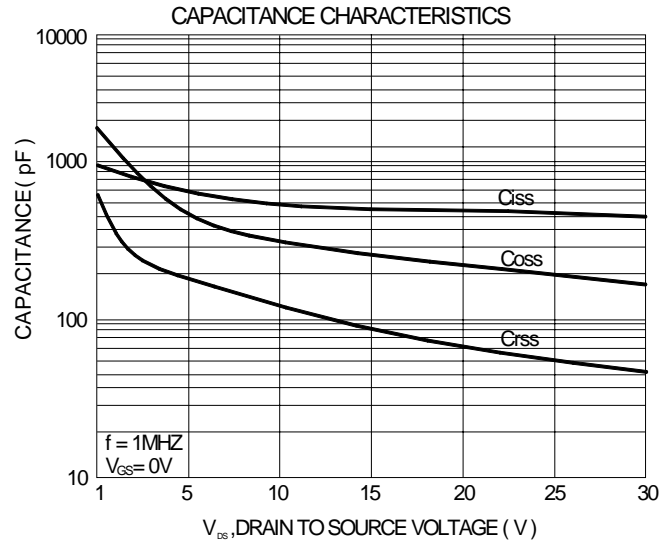
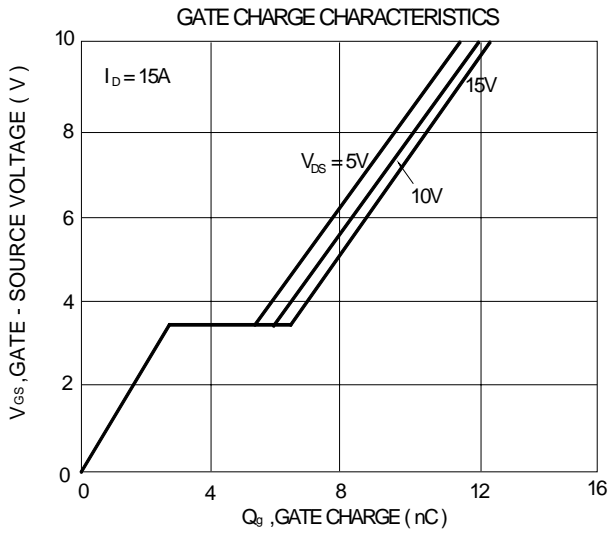


TRANSFER CHARACTERISTICS



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			

