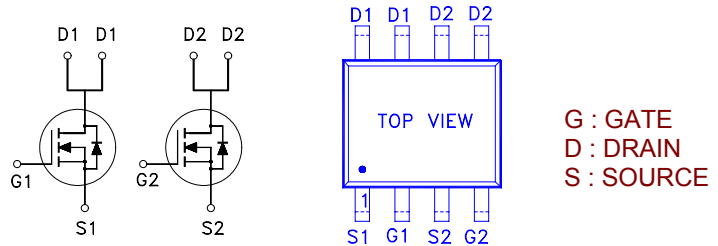


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30	21mΩ	7A



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	7	A
	$T_C = 70\text{ }^\circ\text{C}$		6	
Pulsed Drain Current ¹		I_{DM}	40	
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	2	W
	$T_C = 70\text{ }^\circ\text{C}$		1.3	
Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C
Lead Temperature (¹ / ₁₆ " from case for 10 sec.)		T_L	275	

THERMAL RESISTANCE RATINGS

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

¹Pulse width limited by maximum junction temperature.

²Duty cycle ≤ 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	3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			±100	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	$I_{D(ON)}$	$V_{DS} = 5V, V_{GS} = 10V$	25			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 6A$		21	35	mΩ
		$V_{GS} = 10V, I_D = 7A$		15	21	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 15V, I_D = 5A$		24		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$		1650		pF
Output Capacitance	C_{oss}			365		
Reverse Transfer Capacitance	C_{rss}			170		
Total Gate Charge ²	Q_g	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 5V, I_D = 7A$		18	25	nC
Gate-Source Charge ²	Q_{gs}			5.5		
Gate-Drain Charge ²	Q_{gd}			6.7		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 15V, I_D \cong 1A, V_{GS} = 10V, R_{GEN} = 6\Omega$		11	20	nS
Rise Time ²	t_r			9	18	
Turn-Off Delay Time ²	$t_{d(off)}$			25	40	
Fall Time ²	t_f			11	20	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_c = 25^\circ C$)						
Continuous Current	I_S				1.3	A
Pulsed Current ³	I_{SM}				2.5	
Forward Voltage ¹	V_{SD}	$I_F = 1A, V_{GS} = 0V$			1.2	V
Reverse Recovery Time	t_{rr}	$I_F = 5A, dI_F/dt = 100A / \mu S$		15.5		nS
Reverse Recovery Charge	Q_{rr}			7.9		

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

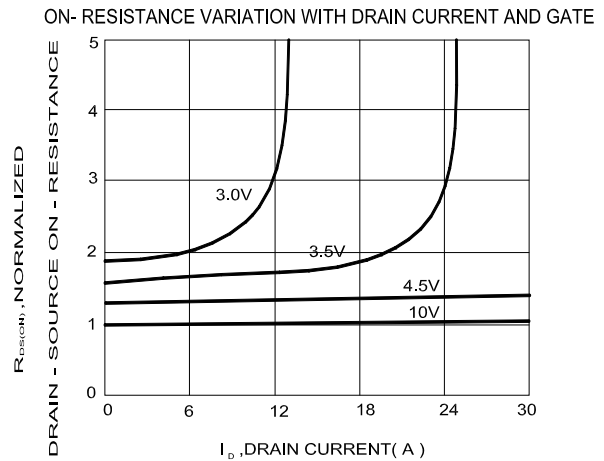
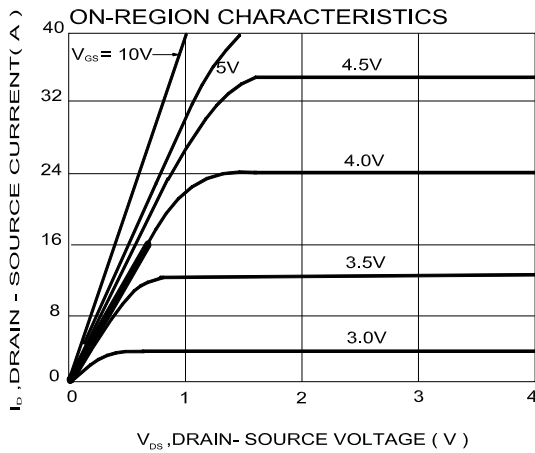
²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

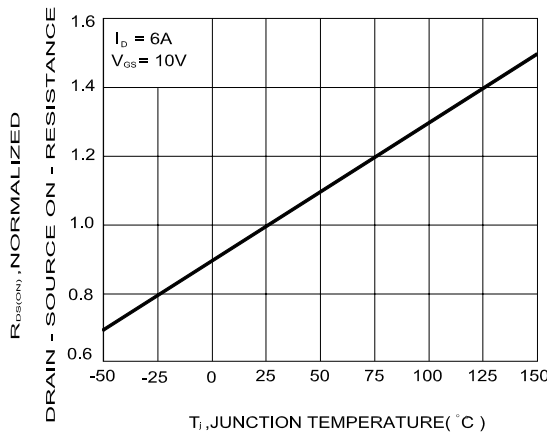
REMARK: THE PRODUCT MARKED WITH “P2103HVG”, DATE CODE or LOT #

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

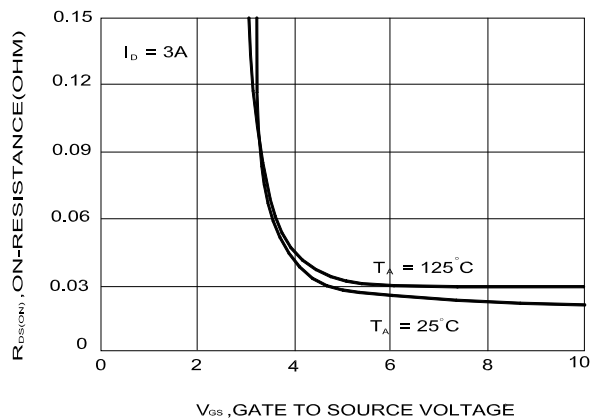
TYPICAL PERFORMANCE CHARACTERISTICS



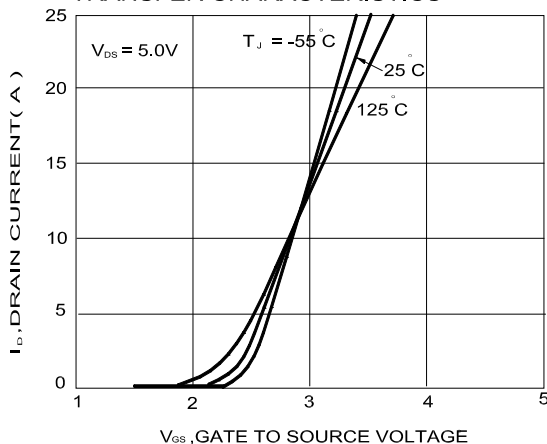
ON-RESISTANCE VARIATION WITH TEMPERATURE



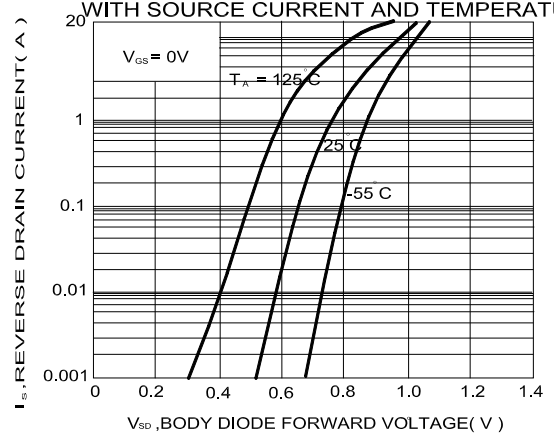
ON-RESISTANCE VARIATION WITH GATE-TO-SOURCE VOLTAGE

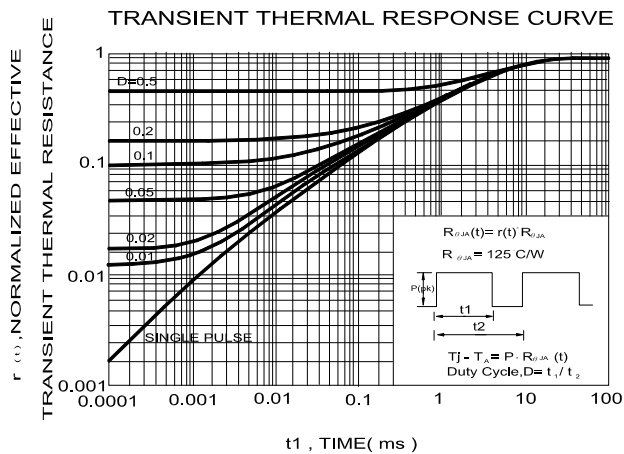
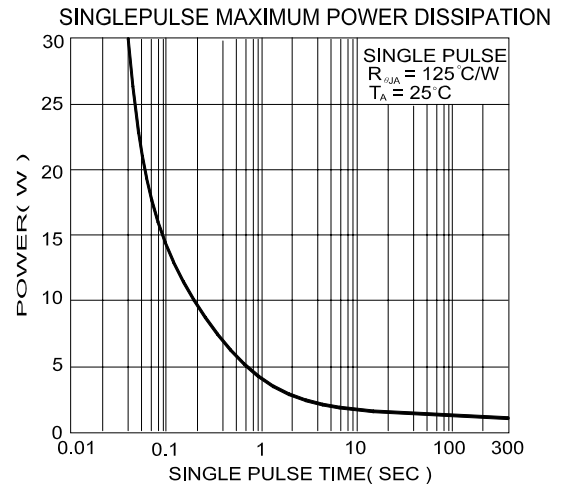
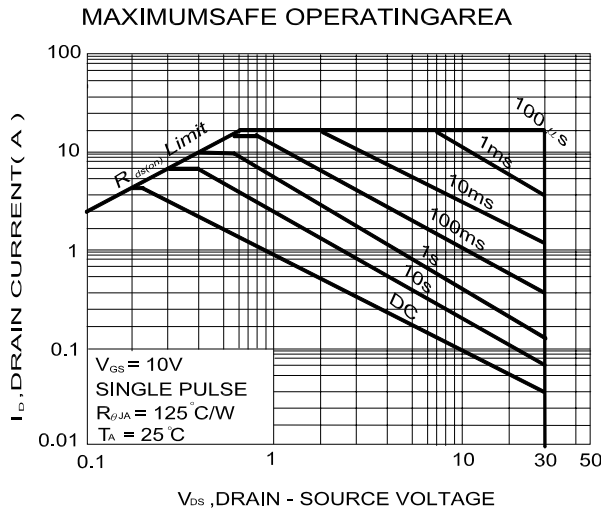
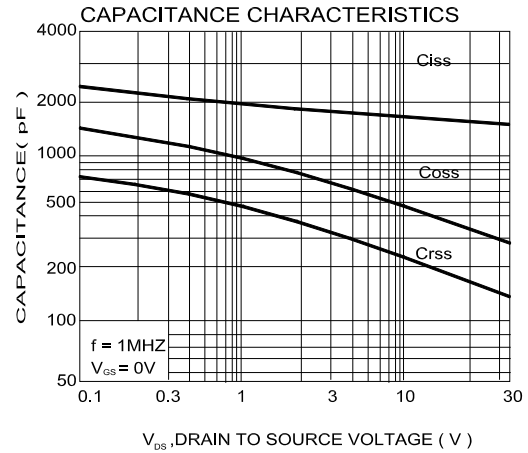
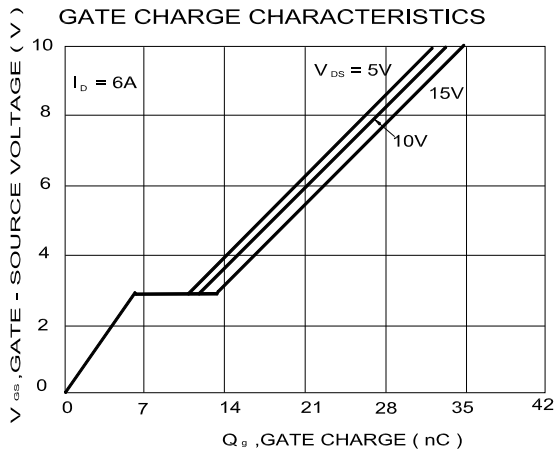


TRANSFER CHARACTERISTICS



BODY DIODE FORWARD VOLTAGE VARIATION WITH SOURCE CURRENT AND TEMPERATURE





SOIC-8(D) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.8	4.9	5.0	H	0.5	0.715	0.83
B	3.8	3.9	4.0	I	0.18	0.254	0.25
C	5.8	6.0	6.2	J		0.22	
D	0.38	0.445	0.51	K	0°	4°	8°
E		1.27		L			
F	1.35	1.55	1.75	M			
G	0.1	0.175	0.25	N			

