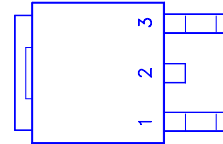
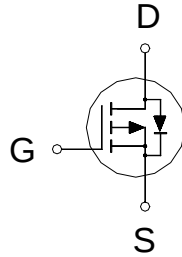


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-30	45m Ω	-12A



1. GATE
2. DRAIN
3. SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ 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	$T_C = 25^\circ\text{C}$	I_D	-12	A
	$T_C = 70^\circ\text{C}$		-10	
Pulsed Drain Current ¹		I_{DM}	-30	
Power Dissipation	$T_C = 25^\circ\text{C}$	P_D	48	W
	$T_C = 70^\circ\text{C}$		20	
Operating 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 ($T_C = 25^\circ\text{C}$, 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	-3.0	V
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
		$V_{DS} = -20V, V_{GS} = 0V, T_J = 125^\circ C$			10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = -5V, V_{GS} = -10V$	-30			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = -4.5V, I_D = -10A$		60	75	mΩ
		$V_{GS} = -10V, I_D = -12A$		37	45	
Forward Transconductance ¹	g_{fs}	$V_{DS} = -10V, I_D = -12A$		16		S

DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -15V, f = 1MHz		530		pF
Output Capacitance	C _{oss}			135		
Reverse Transfer Capacitance	C _{rss}			70		
Total Gate Charge ²	Q _g	V _{DS} = 0.5V _{(BR)DSS} , V _{GS} = -10V, I _D = -12A		10	14	nC
Gate-Source Charge ²	Q _{gs}			2.2		
Gate-Drain Charge ²	Q _{gd}			2		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = -15V, R _L = 1Ω I _D ≅ -1A, V _{GS} = -10V, R _{GS} = 6Ω		5.7		nS
Rise Time ²	t _r			10		
Turn-Off Delay Time ²	t _{d(off)}			18		
Fall Time ²	t _f			5		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _c = 25 °C)						
Continuous Current	I _S				-12	A
Pulsed Current ³	I _{SM}				-30	
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 / μS		15.5		nS
Reverse Recovery Charge	Q _{rr}				7.9	

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

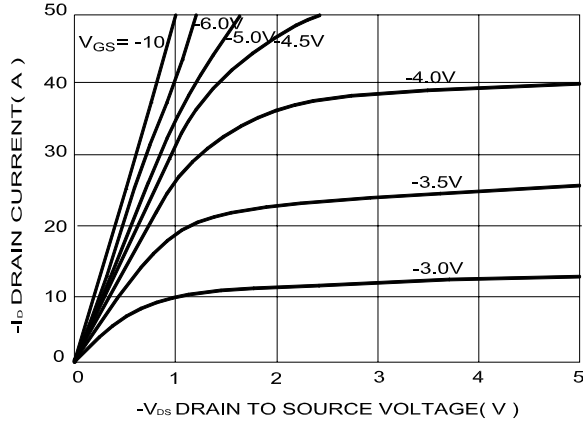
²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

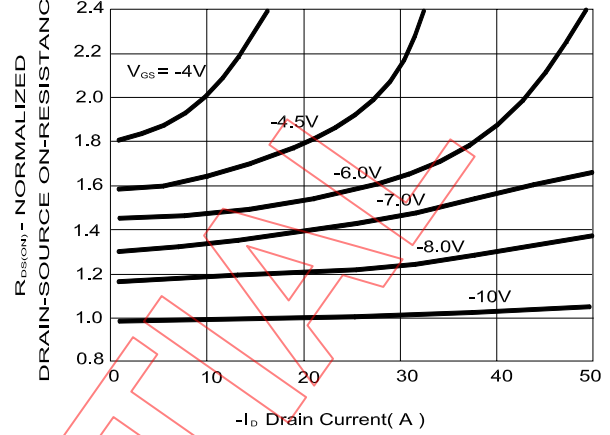
REMARK: THE PRODUCT MARKED WITH "P06P03LDG", DATE CODE or LOT #
Orders for parts with Lead-Free plating can be placed using the PXXXXXXXG parts name

Typical Characteristics

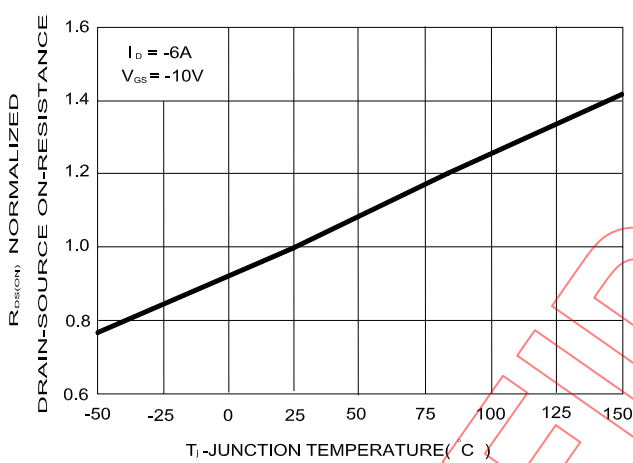
ON-REGION CHARACTERISTIC



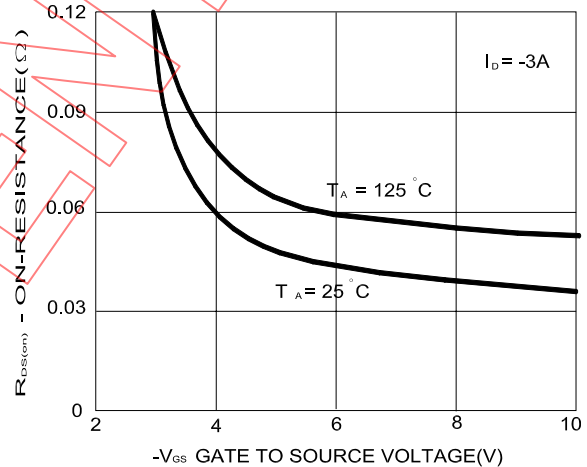
ON-RESISTANCE VARIATION WITH DRAIN CURRENT AND GATE VOLTAGE



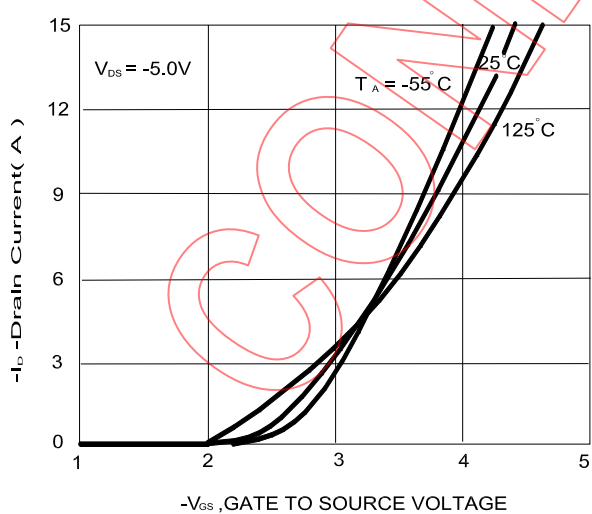
ON-RESISTANCE VARIATION WITH TEMPERATURE



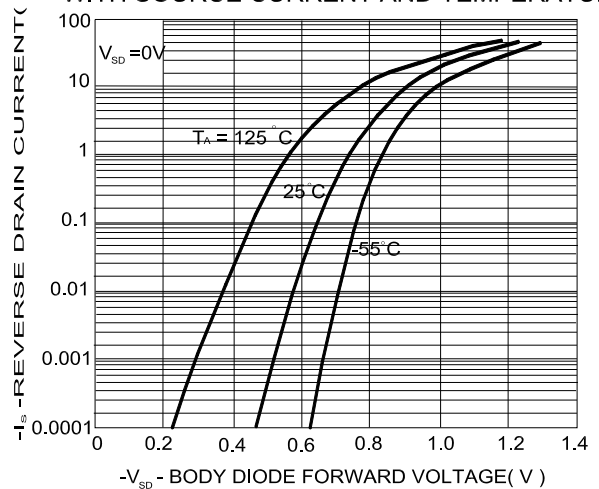
ON-RESISTANCE VARIATION WITH GATE-TO-SOURCE VOLTAGE

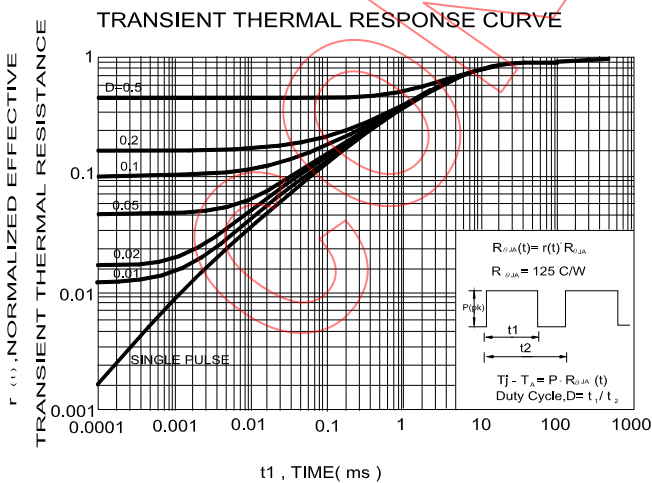
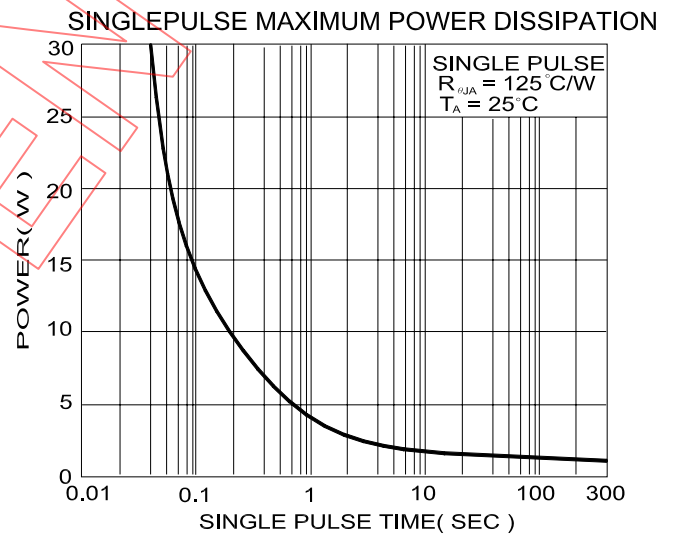
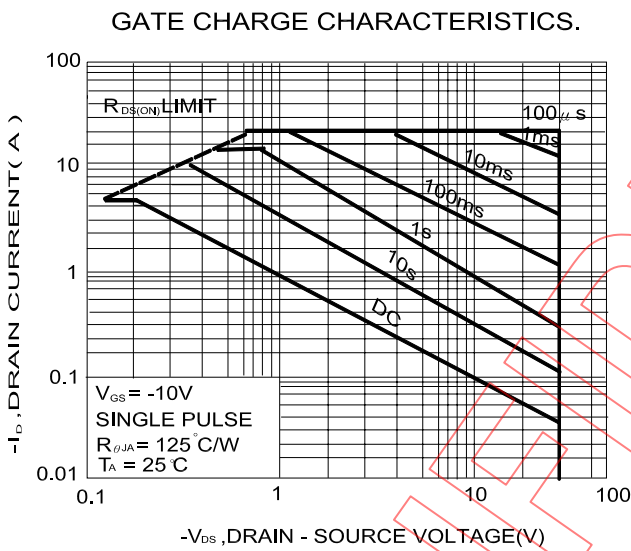
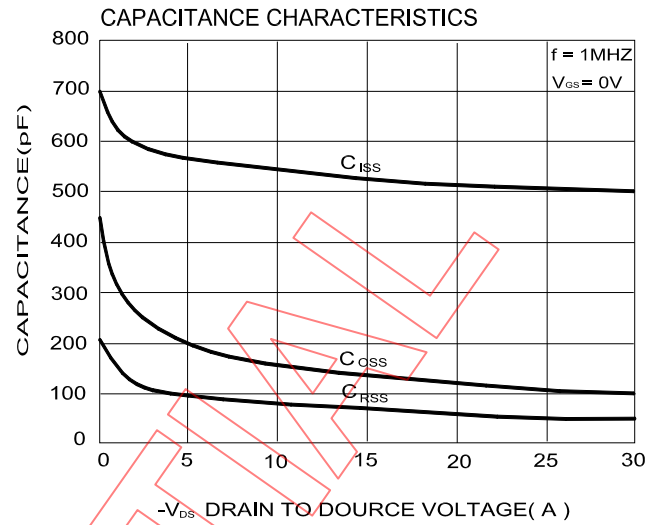
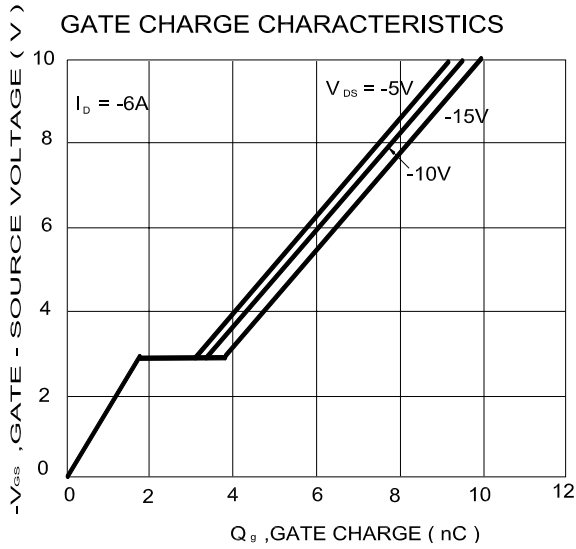


Transfer Characteristics



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			

