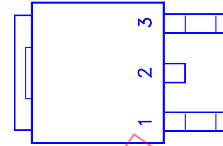
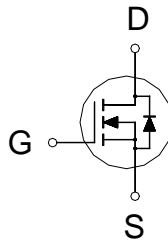


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
150	60m	20A



- 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}	± 12	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	I_D	20	A
	$T_C = 100\text{ }^\circ\text{C}$		15	
Pulsed Drain Current ¹		I_{DM}	60	
Avalanche Current		I_{AR}	20	
Avalanche Energy	$L = 0.47\text{mH}$	E_{AS}	94	mJ
Repetitive Avalanche Energy ²	$L = 0.47\text{mH}$	E_{AR}	35	
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	48	W
	$T_C = 100\text{ }^\circ\text{C}$		20	
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	$R_{\theta JC}$		2.6	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		110	

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	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	150			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	0.45	0.75	1.20	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{V}, V_{GS} = \pm 12\text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 120\text{V}, V_{GS} = 0\text{V}$			1	μA
		$V_{DS} = 100\text{V}, V_{GS} = 0\text{V}, T_J = 125\text{ }^\circ\text{C}$			10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 5\text{V}, V_{GS} = 5\text{V}$	60			A

Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 3V, I_D = 3A$	62	80	m
		$V_{GS} = 5V, I_D = 10A$	56	70	
		$V_{GS} = 10V, I_D = 15A$	50	60	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 10A$	26		S

DYNAMIC

Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$	7660		pF
Output Capacitance	C_{oss}		725		
Reverse Transfer Capacitance	C_{rss}		420		
Total Gate Charge ²	Q_g	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 4.5V,$ $I_D = 10A$	107	140	nC
Gate-Source Charge ²	Q_{gs}		18		
Gate-Drain Charge ²	Q_{gd}		60		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 75V,$ $I_D \cong 10A, V_{GS} = 10V, R_{GS} = 16$	18		nS
Rise Time ²	t_r		115		
Turn-Off Delay Time ²	$t_{d(off)}$		338		
Fall Time ²	t_f		384		

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

Continuous Current	I_S			20	A
Pulsed Current ³	I_{SM}			60	
Forward Voltage ¹	V_{SD}	$I_F = I_S, V_{GS} = 0V$		1.3	V
Reverse Recovery Time	t_{rr}	$I_F = I_S, di_F/dt = 100A / \mu S$		57	nS
Peak Reverse Recovery Current	$I_{RM(REC)}$		60		A
Reverse Recovery Charge	Q_{rr}		0.130		μC

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

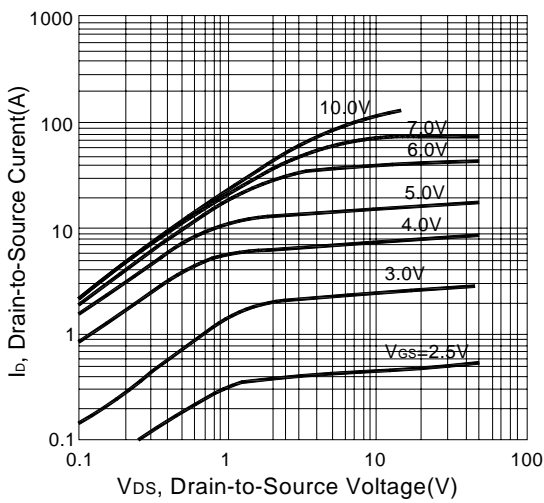
²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

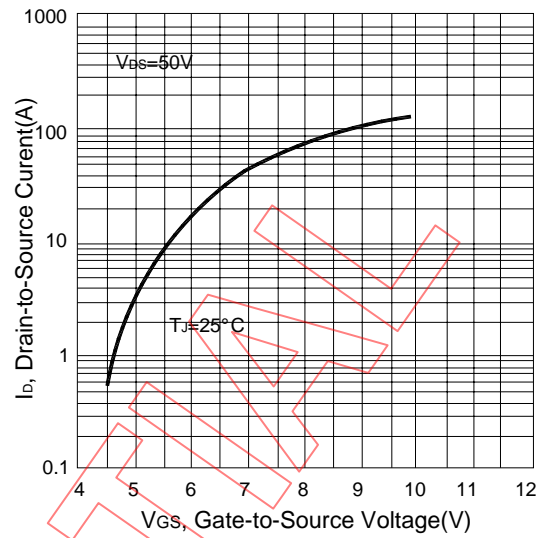
REMARK: THE PRODUCT MARKED WITH "P6015CDG", DATE CODE or LOT #

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

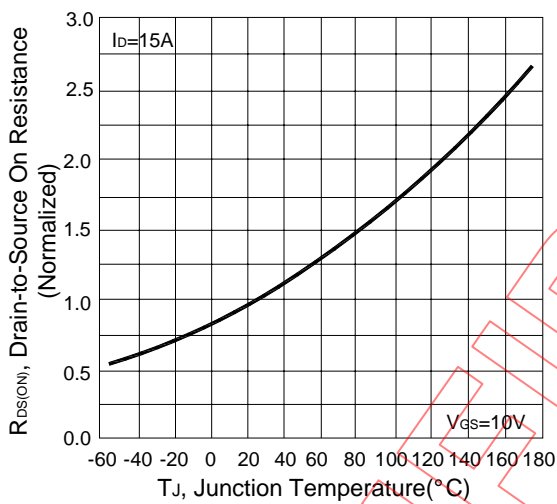
Typical Output Characteristics



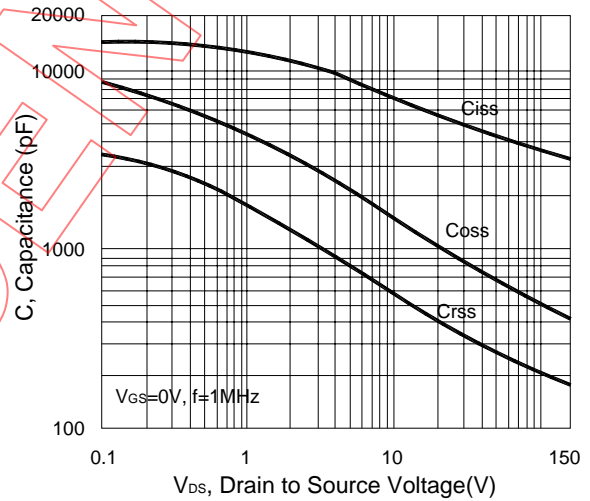
Typical Transfer Characteristics



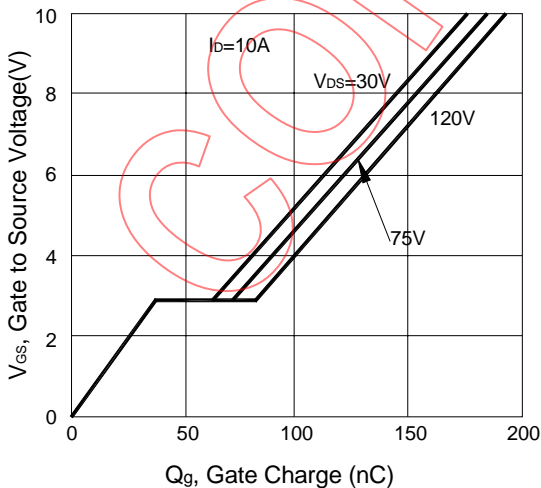
Normalized On-Resistance Vs. Temperature



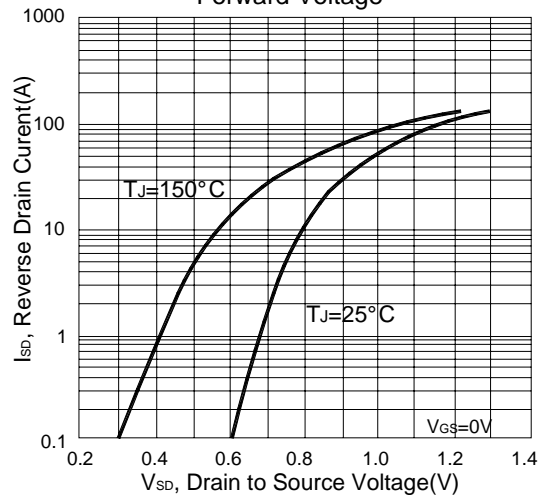
Capacitance vs Drain to Source Voltage



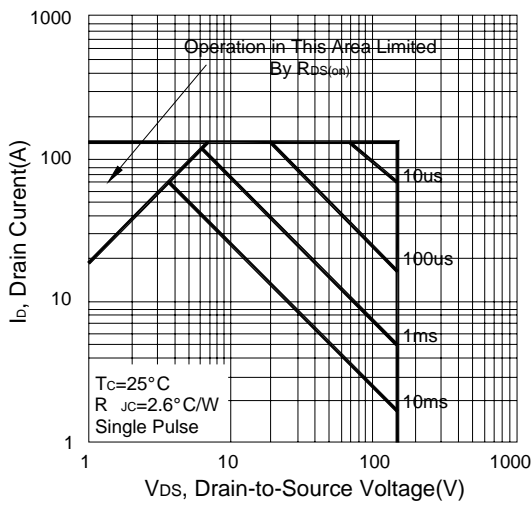
Gate Charge Waveforms for Constant Gate Currents



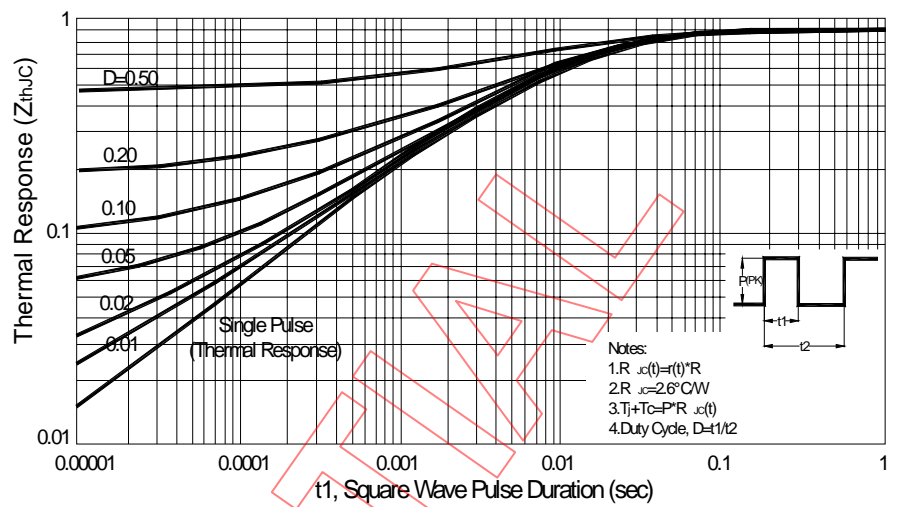
Typical Source-Drain Diode Forward Voltage



Maximum Safe Operating Area



Transient Thermal Response Curve



CONFIDENTIAL

TO-252 (DPAK) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	8.90		10.42	H	0.80	1.4	1.70
B	2.20	2.3	2.44	I	6.35	6.5	6.80
C	0.45	0.5	0.60	J	4.80	5.0	5.50
D	0.89	1.2	1.50	K	0.50	0.8	1.50
E	0.35	0.5	0.65	L	0.40	0.6	0.89
F	0		0.23	M	4.10	4.6	5.10
G	5.20	5.5	6.22	N			

