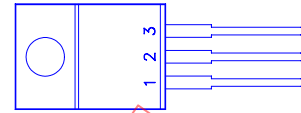
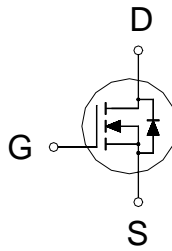


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
75	13m	80A



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	80	A
	$T_C = 100\text{ }^\circ\text{C}$		55	
Pulsed Drain Current ¹		I_{DM}	250	
Avalanche Current		I_{AR}	40	
Avalanche Energy	$L = 0.55\text{mH}$	E_{AS}	400	mJ
Repetitive Avalanche Energy ²	$L = 0.1\text{mH}$	E_{AR}	20	
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	192	W
	$T_C = 100\text{ }^\circ\text{C}$		76	
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	$R_{\theta JC}$		0.65	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		62.5	
Case-to-Heatsink	$R_{\theta CS}$	0.5		

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	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	75			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1.5	2.3	4.0	
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}	$V_{DS} = 60\text{V}, V_{GS} = 0\text{V}$			1	μA
		$V_{DS} = 60\text{V}, V_{GS} = 0\text{V}, T_J = 125\text{ }^\circ\text{C}$			10	

On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 10V, V_{GS} = 10V$	60			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 40A$		10.5	13	m
Forward Transconductance ¹	g_{fs}	$V_{DS} = 50V, I_D = 40A$		38		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		3820		pF
Output Capacitance	C_{oss}			610		
Reverse Transfer Capacitance	C_{rss}			130		
Total Gate Charge ²	Q_g	$V_{DS} = 60V, V_{GS} = 10V, I_D = 40A$			160	nC
Gate-Source Charge ²	Q_{gs}				30	
Gate-Drain Charge ²	Q_{gd}				55	
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = 40V, I_D \cong 40A, V_{GS} = 10V, R_{GS} = 2.5$		15		nS
Rise Time ²	t_r			65		
Turn-Off Delay Time ²	$t_{d(off)}$			50		
Fall Time ²	t_f			50		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_C = 25^\circ C$)						
Continuous Current	I_S				80	A
Pulsed Current ³	I_{SM}				250	
Forward Voltage ¹	V_{SD}	$I_F = 40A, V_{GS} = 0V$			1.3	V
Reverse Recovery Time	t_{rr}			100		nS
Peak Reverse Recovery Current	$I_{RM(REC)}$	$I_F = I_S, di_F/dt = 100A / \mu S$		200		A
Reverse Recovery Charge	Q_{rr}			410		nC

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

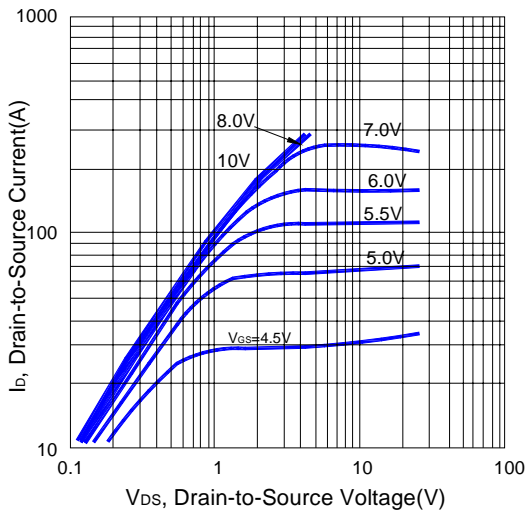
²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

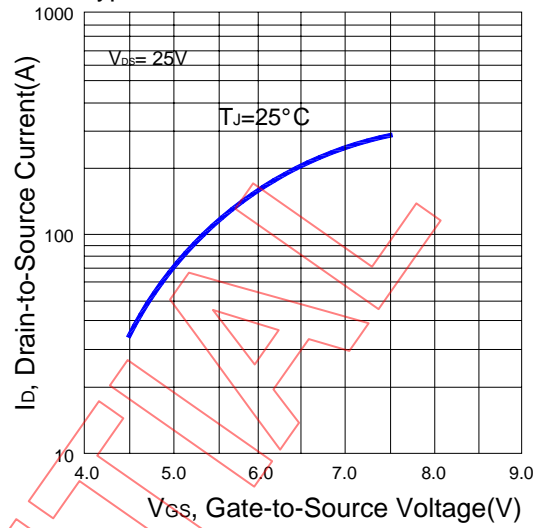
REMARK: THE PRODUCT MARKED WITH "P1308ATG", DATE CODE or LOT #

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

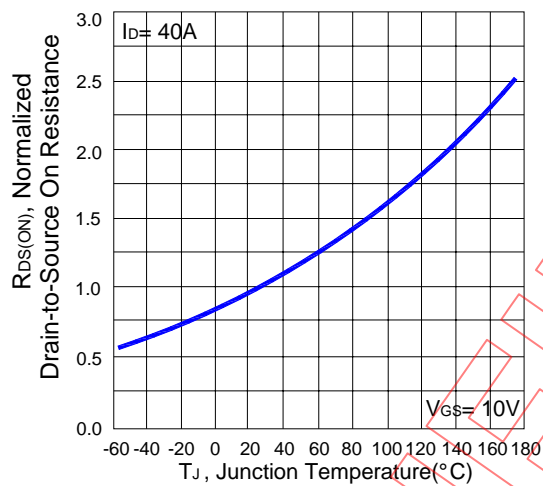
Typical Output Characteristics



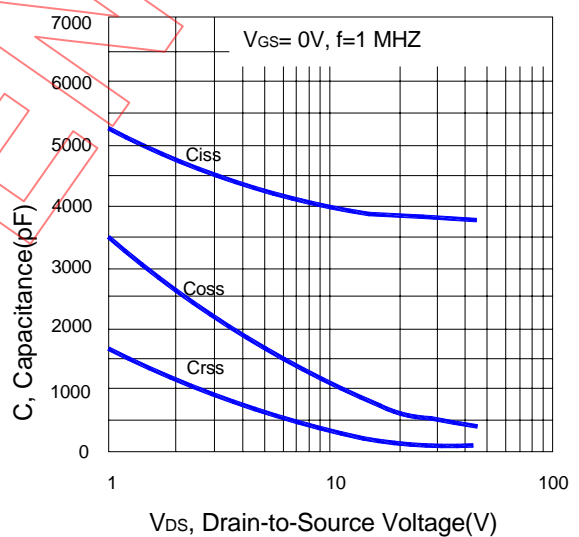
Typical Transfer Characteristics



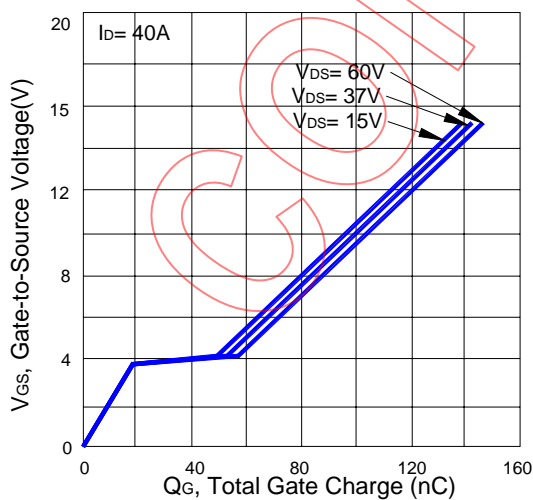
Normalized On-Resistance Vs. Temperature



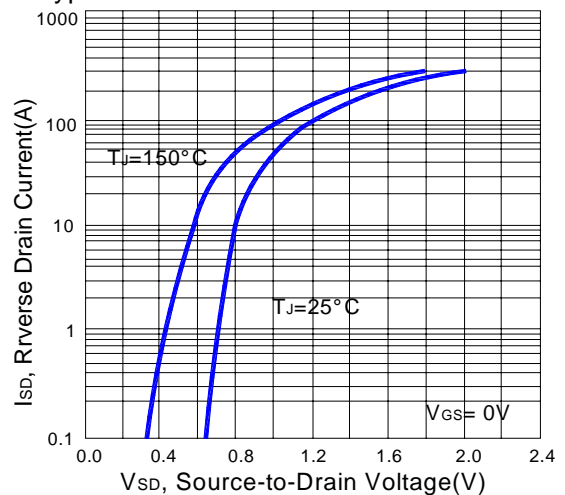
Capacitance-Characteristics

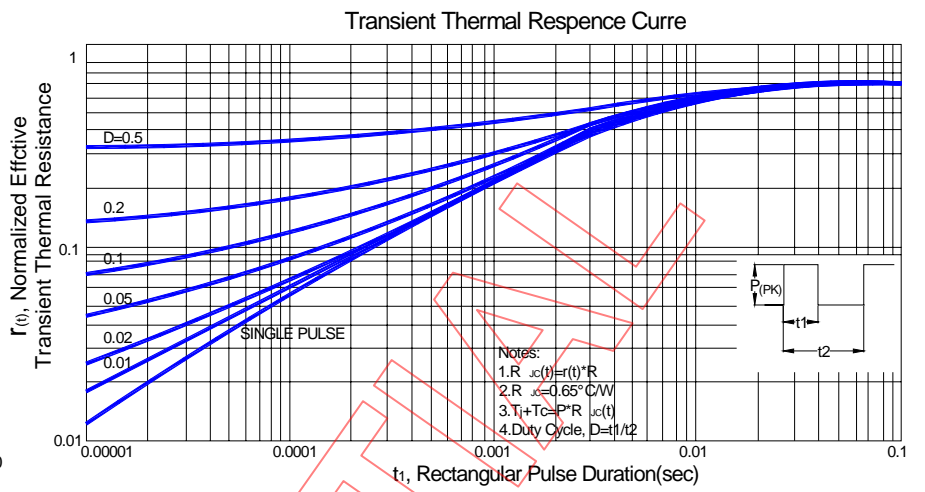
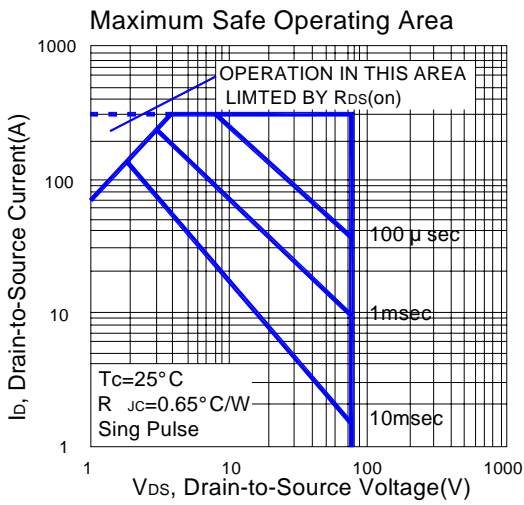


Typical Gate Charge Vs. Gate-to-Source Voltage



Typical Source-Drain Diode Forward Voltage





CONFIDENTIAL

TO-220 (3-Lead) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	9.78	10.16	10.54	H	2.4	2.54	2.68
B	2.61	2.74	2.87	I	1.19	1.27	1.35
C		20		J	4.4	4.6	4.8
D	28.5	28.9	29.3	K	1.14	1.27	1.4
E	14.6	15.0	15.4	L	2.3	2.6	2.9
F	8.4	8.8	9.2	M	0.26	0.46	0.66
G	0.72	0.8	0.88	N		7°	

