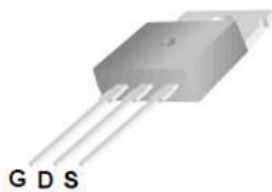


# P0806ATX

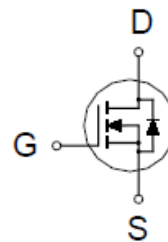
## N-Channel Enhancement Mode MOSFET

### PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
60V	$8m\Omega @ V_{GS} = 10V$	110A



TO-220



### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		$V_{GS}$	$\pm 20$	V
Continuous Drain Current <sup>1</sup>	$T_C = 25\text{ }^\circ\text{C}$	$I_D$	110	A
	$T_C = 100\text{ }^\circ\text{C}$		69	
Pulsed Drain Current <sup>2</sup>		$I_{DM}$	300	
Avalanche Current		$I_{AS}$	102	
Avalanche Energy	$L = 0.1\text{mH}$	$E_{AS}$	525	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	$P_D$	166	W
	$T_C = 100\text{ }^\circ\text{C}$		66	
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	$R_{\theta JC}$		0.75	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		62.5	

<sup>1</sup>Limited by maximum junction temperature.

<sup>2</sup>Limited by package.

# P0806ATX

## N-Channel Enhancement Mode MOSFET

### ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	60			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	2	3	4	V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 60V, V <sub>GS</sub> = 0V			1	μA
		V <sub>DS</sub> = 48V, V <sub>GS</sub> = 0V, T <sub>J</sub> = 125 °C			25	
On-State Drain Current <sup>1</sup>	I <sub>D(ON)</sub>	V <sub>DS</sub> = 10V, V <sub>GS</sub> = 10V	100			A
Drain-Source On-State	R <sub>DS(ON)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 55A		6.9	8	mΩ
Forward Transconductance <sup>1</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 50V, I <sub>D</sub> = 55A		90		S
<b>DYNAMIC</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 25V, f = 1MHz		4470		nF
Output Capacitance	C <sub>oss</sub>			1090		
Reverse Transfer Capacitance	C <sub>riss</sub>			120		
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 0V, f = 1MHz		2		Ω
Total Gate Charge <sup>2</sup>	Q <sub>g</sub>	V <sub>DS</sub> = 30V, V <sub>GS</sub> = 10V, I <sub>D</sub> = 50A		91		nC
Gate-Source Charge <sup>2</sup>	Q <sub>gs</sub>			23		
Gate-Drain Charge <sup>2</sup>	Q <sub>gd</sub>			33		
Turn-On Delay Time <sup>2</sup>	t <sub>d(on)</sub>	V <sub>DD</sub> = 15V, I <sub>D</sub> ≅ 55A, V <sub>GS</sub> = 10V, R <sub>GEN</sub> = 6Ω		20		nS
Rise Time <sup>2</sup>	t <sub>r</sub>			110		
Turn-Off Delay Time <sup>2</sup>	t <sub>d(off)</sub>			50		
Fall Time <sup>2</sup>	t <sub>f</sub>			65		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>J</sub> = 25 °C)</b>						
Continuous Current <sup>3</sup>	I <sub>S</sub>				110	A
Forward Voltage <sup>1</sup>	V <sub>SD</sub>	I <sub>F</sub> = 55A, V <sub>GS</sub> = 0V			1.3	V
Reverse Recovery Time	t <sub>rr</sub>	V <sub>GS</sub> = 0V, I <sub>F</sub> = 55A, di <sub>F</sub> /dt = 100A / μS		125		nS
Reverse Recovery Charge	Q <sub>rr</sub>			260		nC

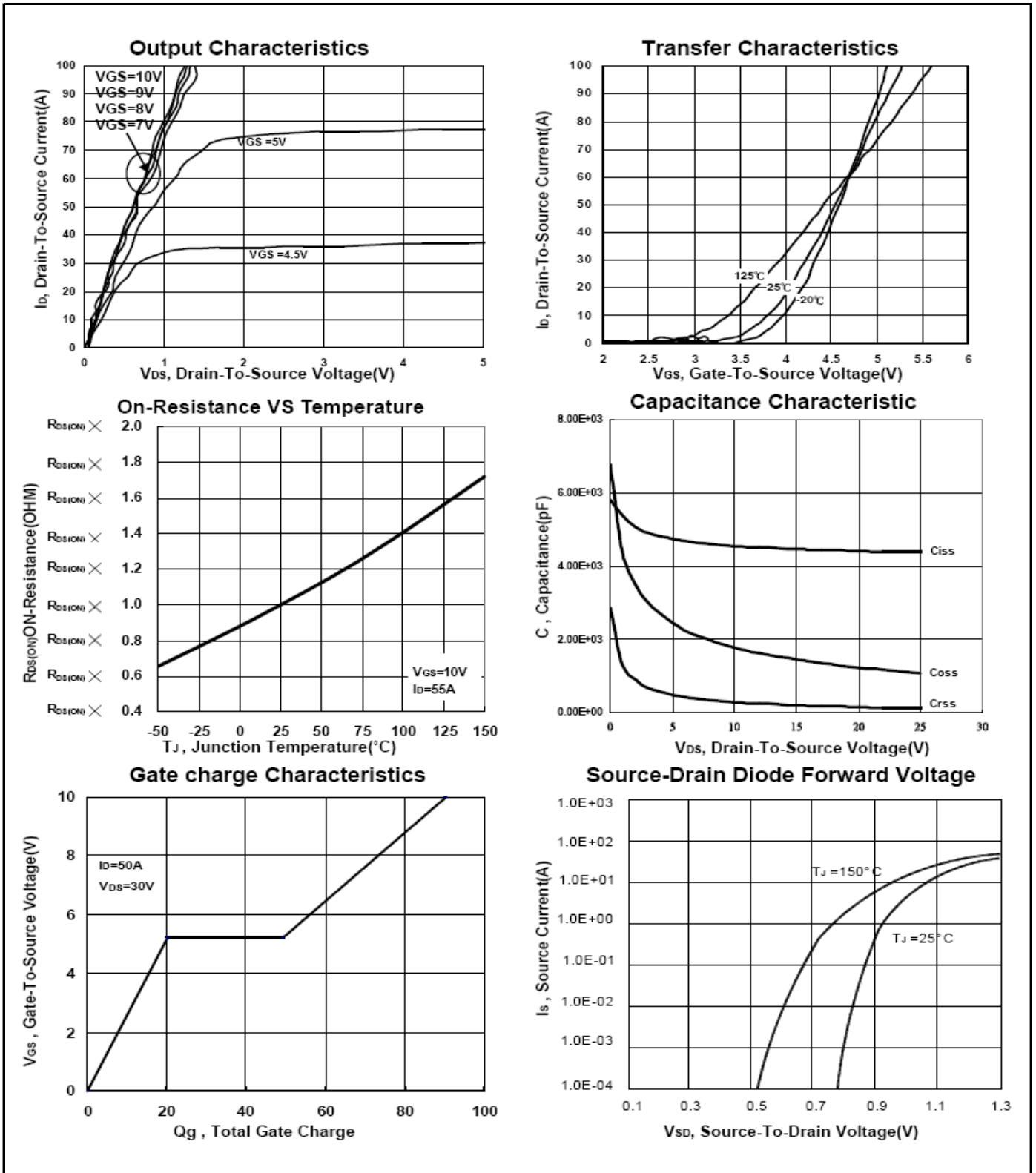
<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

<sup>2</sup>Independent of operating temperature.

<sup>3</sup>Limited by maximum junction temperature.

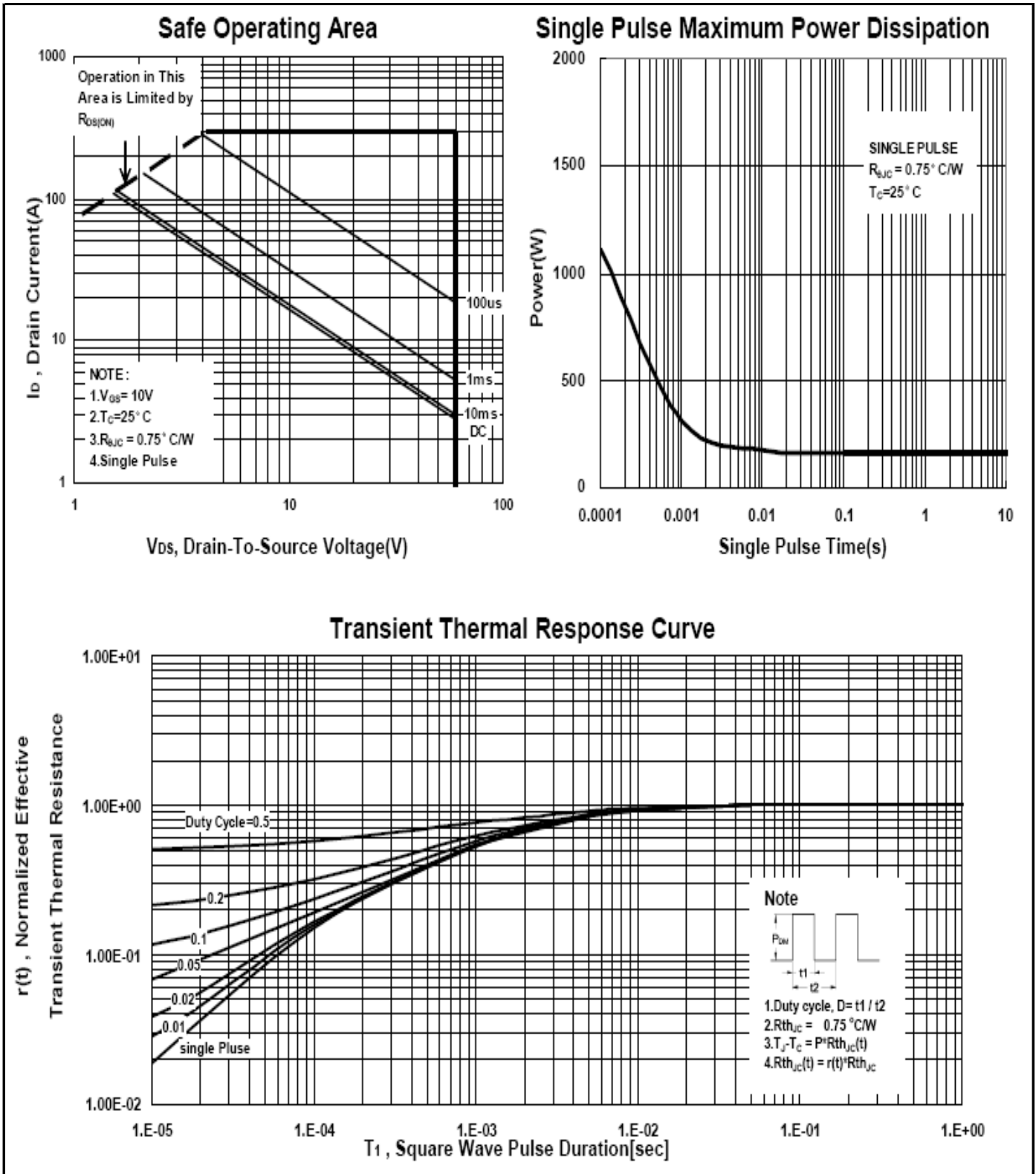
# P0806ATX

## N-Channel Enhancement Mode MOSFET



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### Package Dimension

### TO-220 (3-Lead) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	9.652	10.16	11.5	H	2.04	2.54	3.04
B	2.54	2.79	3.048	I	1.15	1.52	1.778
C	17.3		22.86	J	3.556	4.57	4.826
D	26.924	29.03	31.242	K	0.508	1.3	1.45
E	14.224	15.45	16.510	L	1.89	2.69	3.09
F	8.382	9.20	9.40	M	0.34	0.5	0.6
G	0.381	0.81	1.016	N			

