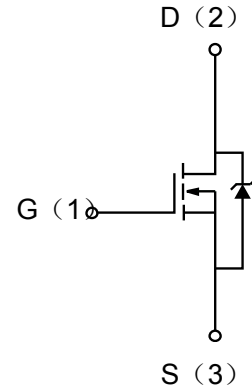


Description

The enhancement mode MOS is extremely high density cell and low on-resistance.

MOSFET Product Summary		
$V_{DS}(V)$	$R_{DS(on)}(\Omega)$	$I_D(A)$
600	0.98@ $V_{GS}=10V$	8.0


Absolute maximum rating@25°C

Rating	Symbol	PNMTO6 00V8	PNMTOF 600V8	Units	
Drain-Source Voltage	V_{DS}	600		V	
Gate-Source Voltage	V_{GS}	± 30		V	
Continuous Drain Current	I_D	8		A	
Total Power Dissipation	$T_A=25^\circ C$	P_D	166	40	W
	Derate above 25°C	P_D	1.82	0.40	W / °C
Junction and Storage Temperature Range	T_J, T_{STG}	-50 to 150		°C	
Maximum lead temperature for soldering purpose, 1/8" from case for 5 seconds	T_L	300		°C	

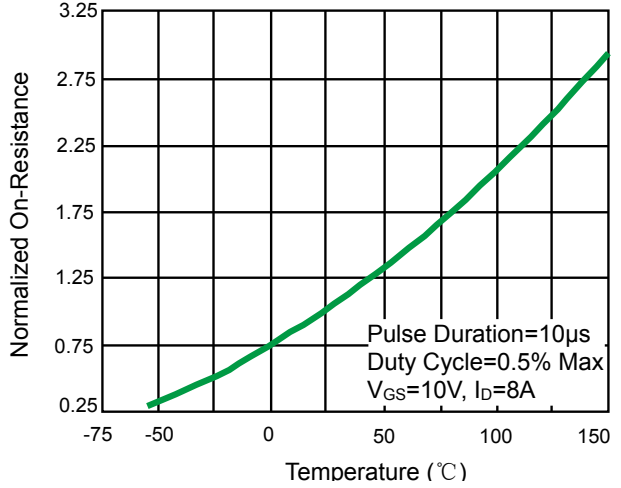
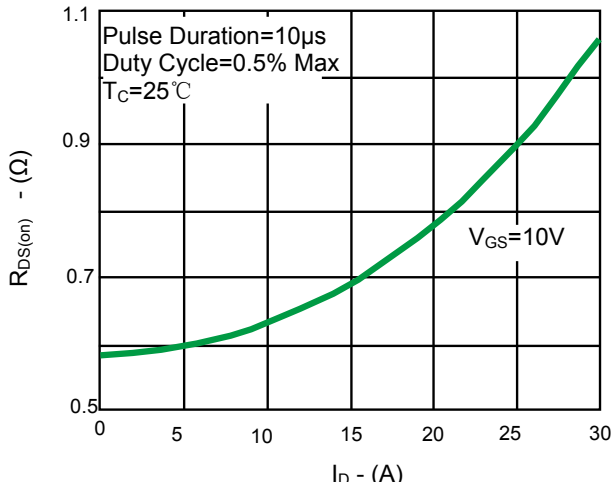
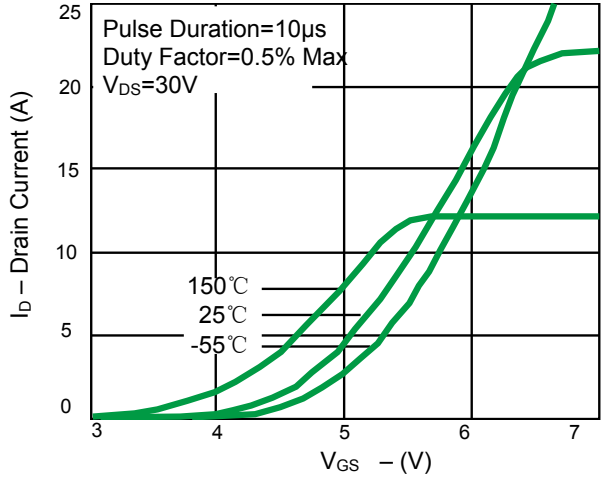
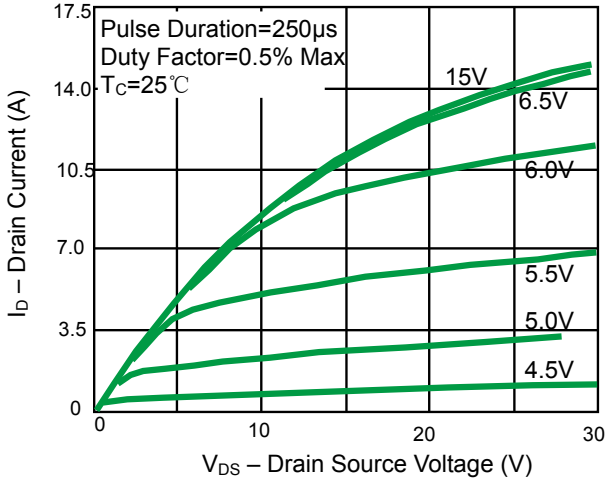
Thermal Characteristics

Parameter	Symbol	Conditions	PNMTO 600V8	PNMTO F600V8	Units
Maximum Junction-to-Ambient	$R_{\theta JA}$	Drain lead soldered to water cooled heatsink, P_D adjusted for a peak junction temperature of +150°C	62	100	°C/W
Maximum Junction-to-Case	$R_{\theta JC}$	1 cubic foot chamber, free air.	0.75	3.1	°C/W

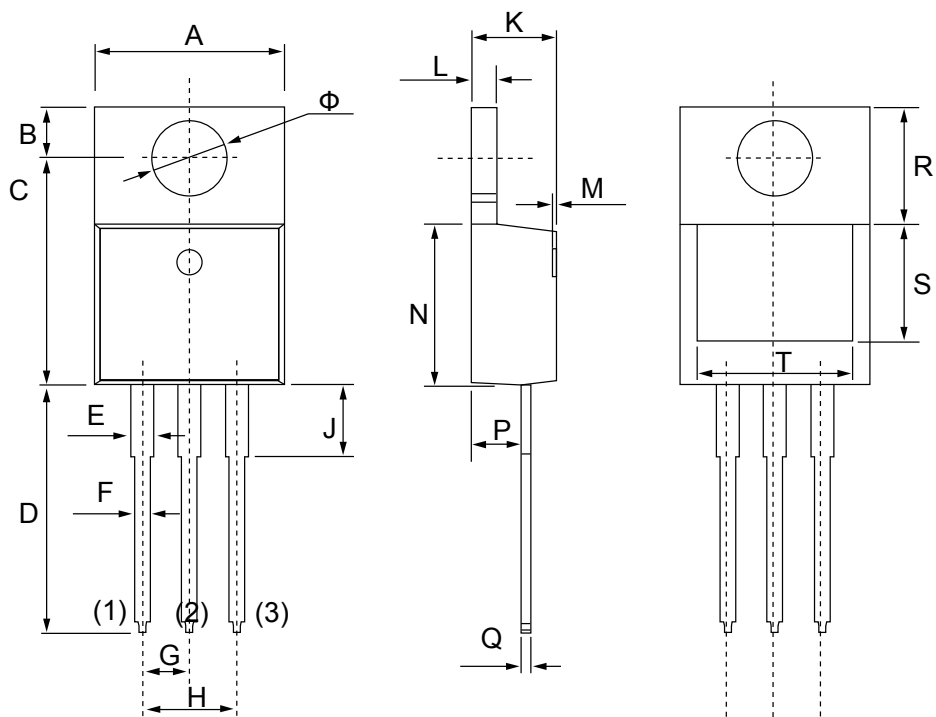
Electrical characteristics per line @ 25 °C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
STATIC PARAMETERS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = 250\mu A, V_{GS} = 0V$	600		-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 600V, V_{GS} = 0V$	-	-	25	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 30V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2		4	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 4.8A$	-	0.98	1.15	Ω
Forward Transconductance	g_{FS}	$V_{DS} = 15V, I_D = 8A$		9.37		S
Diode Forward Voltage	V_{SD}	$I_S = 8A, V_{GS} = 0V$			1.5	V
Maximum Body-Diode Continuous Current	I_S				8	A
Maximum Body-Diode Pulse Current	I_{SM}				32	A
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS} = 0V, V_{DS} = 25V,$ $f = 1MHz$		1431		pF
Output Capacitance	C_{OSS}			109		pF
Reverse Transfer Capacitance	C_{RSS}			9.5		pF
SWITCHING PARAMETERS						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 300V, V_{GS} = 10V,$ $R_G = 9.1\Omega,$ $I_D = 8A$	-	13.6		ns
Turn-Off Delay Time	$t_{d(off)}$		-	41.0		ns
Turn-On Rise Time	t_r			14.0		ns
Turn-Off Fall Time	t_f			23.6		ns
Total Gate Charge	Q_g	$V_{DS} = 300V$ $I_D = 8A$		28.4		nC
Gate Source Charge	Q_{gs}			7.3		nC
Gate Drain Charge	Q_{gd}			11.2		nC
Body Diode Reverse Recovery Time	t_{rr}	$I_F = 8A, di/dt = 100A/\mu s, V_{GS} = 0V$ $V_{DD} = 60V$		538	807	ns
Body Diode Reverse Recovery Charge	Q_{rr}			3181	4772	nC

Typical Characteristics

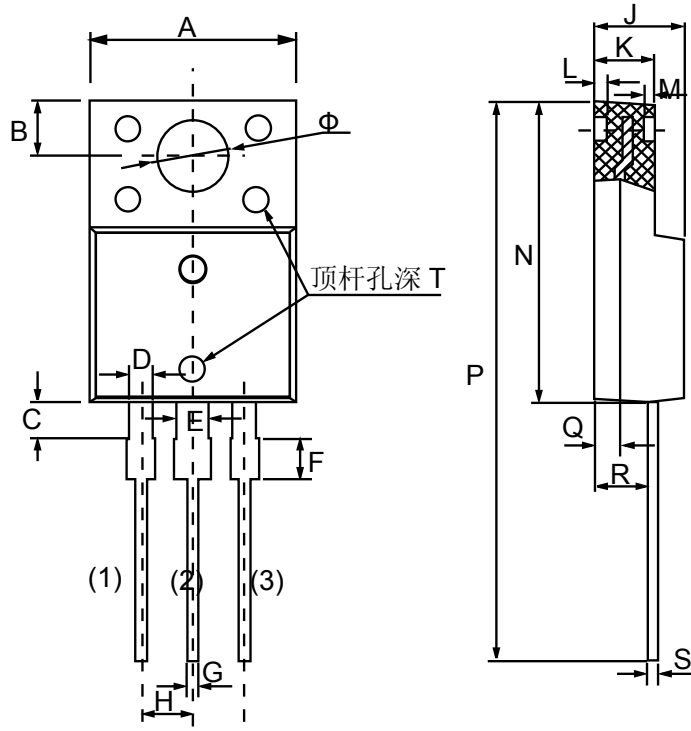


Product dimension(PNMTO600V8)(TO-220)




Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	10.010	10.350	0.394	0.407
B	2.590	2.890	0.102	0.114
C	12.060	12.460	0.475	0.491
D	13.400	13.800	0.528	0.543
E	1.170	1.370	0.046	0.054
F	0.710	0.910	0.028	0.036
G	2.540 TYP.		0.100 TYP.	
H	4.980	5.180	0.196	0.204
J	3.560	3.960	0.140	0.156
K	4.470	4.670	0.176	0.184
L	1.200	1.400	0.047	0.055
M	0.000	0.300	0.000	0.012
N	8.500	8.900	0.335	0.350
P	2.520	2.820	0.099	0.111
Q	0.380	0.520	0.014	0.020
R	6.600 REF.		0.260 REF.	
S	6.060 REF.		0.239 REF.	
T	8.440 REF.		0.332 REF.	
Φ	3.735	3.935	0.147	0.155

Product dimension (PNMTOF600V8)(TO-220F)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	9.960	10.360	0.392	0.408
B	2.700 REF		0.106 REF	
C	1.700	1.900	0.067	0.075
D	1.100	1.350	0.043	0.053
E	1.500	1.750	0.059	0.069
F	1.900	2.100	0.075	0.083
G	0.500	0.750	0.020	0.030
H	2.540 TYP		0.100 TYP	
J	4.300	4.700	0.169	0.185
K	2.800	3.200	0.110	0.126
L	0.800 REF		0.031 REF	
M	0.500 REF		0.020 REF	
N	14.800	15.200	0.583	0.598
P	28.000	28.400	1.102	1.118
Q	1.300 REF		0.051 REF	
R	2.500	2.900	0.098	0.114
S	0.500	0.750	0.020	0.030
T	0.000	0.300	0.000	0.012
Φ	3.500 REF		0.138 REF	


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