



# PJM100H10NTF

## N-Channel Enhancement Mode Power MOSFET

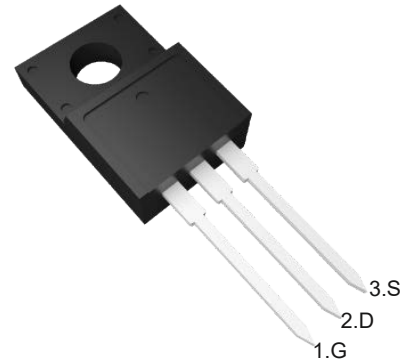
### Features

- Fast Switching
- Low Reverse transfer capacitances
- Low gate charge and low  $R_{DS(on)}$
- $V_{DS} = 1000V, I_D = 10A$   
 $R_{DS(on)} < 1.5\Omega @ V_{GS} = 10V$

### Applications

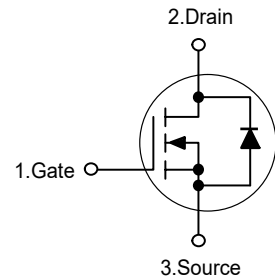
- Power switch circuit of adaptor and charger

TO-220F



1.Gate 2.Drain 3.Source

### Schematic diagram



### Absolute Maximum Ratings

Ratings at 25°C case temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	1000	V
Gate-Source Voltage	$V_{GS}$	$\pm 30$	V
Drain Current-Continuous	$I_D$	10	A
Drain Current-Pulsed <sup>Note1</sup>	$I_{DM}$	40	A
Single pulse avalanche energy <sup>Note4</sup>	$E_{AS}$	200	mJ
Maximum Power Dissipation	$P_D$	30	W
Junction Temperature	$T_J$	150	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C

### Thermal Characteristics

Thermal Resistance, Junction-to-Ambient <sup>Note2</sup>	$R_{\theta JA}$	100	°C/W
Maximum Junction-to-Case <sup>Note2</sup>	$R_{\theta JC}$	2.1	°C/W



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### Electrical Characteristics

(Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	1000	--	--	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=1000V, V_{GS}=0V$	--	--	1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 30V, V_{DS}=0V$	--	--	$\pm 100$	nA
Gate Threshold Voltage <sup>Note3</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.5	--	4.5	V
Drain-Source On-Resistance <sup>Note3</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=5A$	--	0.86	1.1	$\Omega$
Forward Transconductance <sup>Note3</sup>	$g_{FS}$	$V_{DS}=15V, I_D=5A$	--	7	--	S
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=25V, V_{GS}=0V, f=1MHz$	--	3538	--	pF
Output Capacitance	$C_{oss}$		--	240	--	pF
Reverse Transfer Capacitance	$C_{rss}$		--	30	--	pF
<b>Switching Characteristics</b>						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=500V, I_D=10A$ $V_{GS}=10V, R_G=9.1\Omega$	--	35	--	nS
Turn-on Rise Time	$t_r$		--	36	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	44	--	nS
Turn-off Fall Time	$t_f$		--	35	--	nS
Total Gate Charge	$Q_g$	$V_{DD}=500V$ $I_D=10A, V_{GS}=10V$	--	73	--	nC
Gate-Source Charge	$Q_{gs}$		--	16	--	nC
Gate-Drain Charge	$Q_{gd}$		--	27	--	nC
<b>Source-Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>Note3</sup>	$V_{SD}$	$V_{GS}=0V, I_S=10A$	--	--	1.5	V
Diode Forward Current <sup>Note2</sup>	$I_S$		--	--	10	A

Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface Mounted on FR4 Board,  $t \leq 10$  sec.

3. Pulse Test: Pulse width  $< 380\mu s$ , duty cycle  $< 2\%$ .

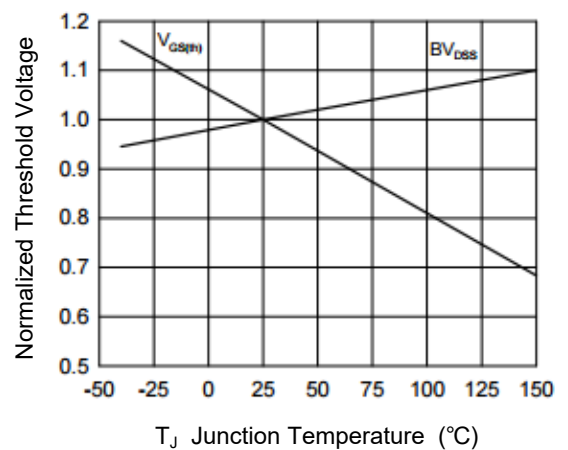
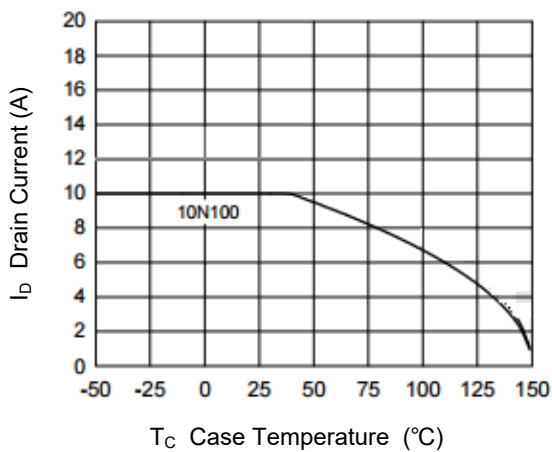
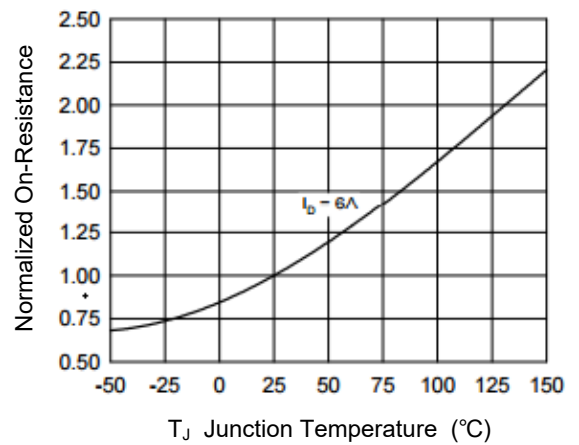
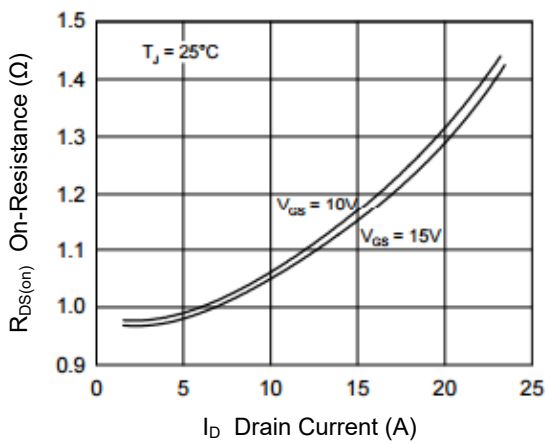
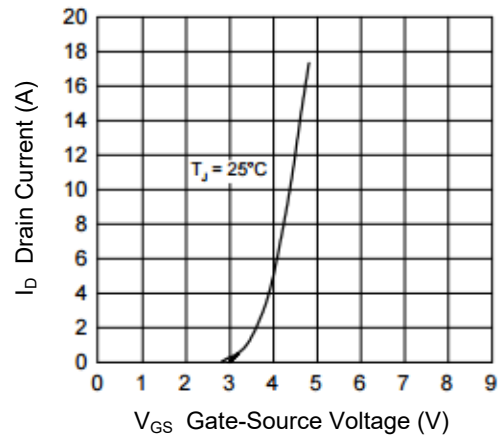
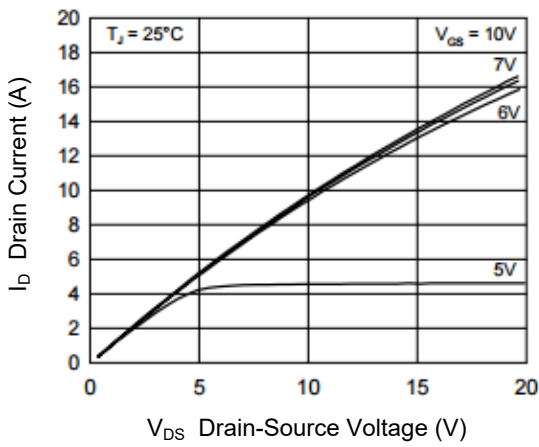
4.  $E_{AS}$  Condition:  $L=10mH, I_D=10A$ , start  $T_J=25^\circ C$ .



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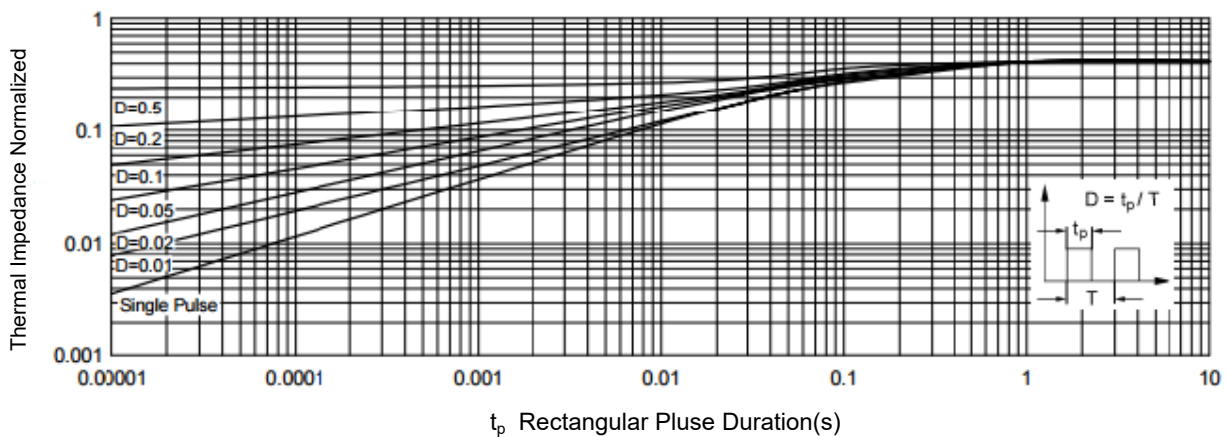
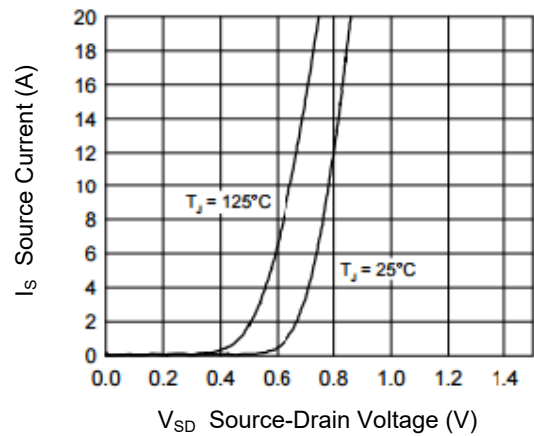
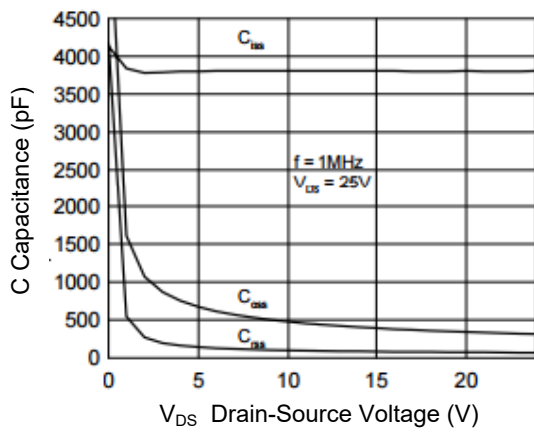
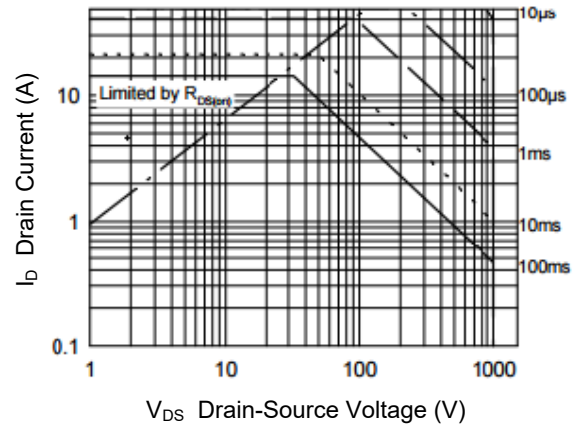
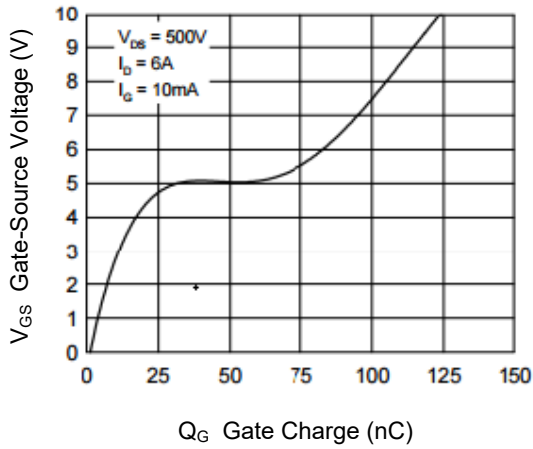
### Typical Characteristic Curves





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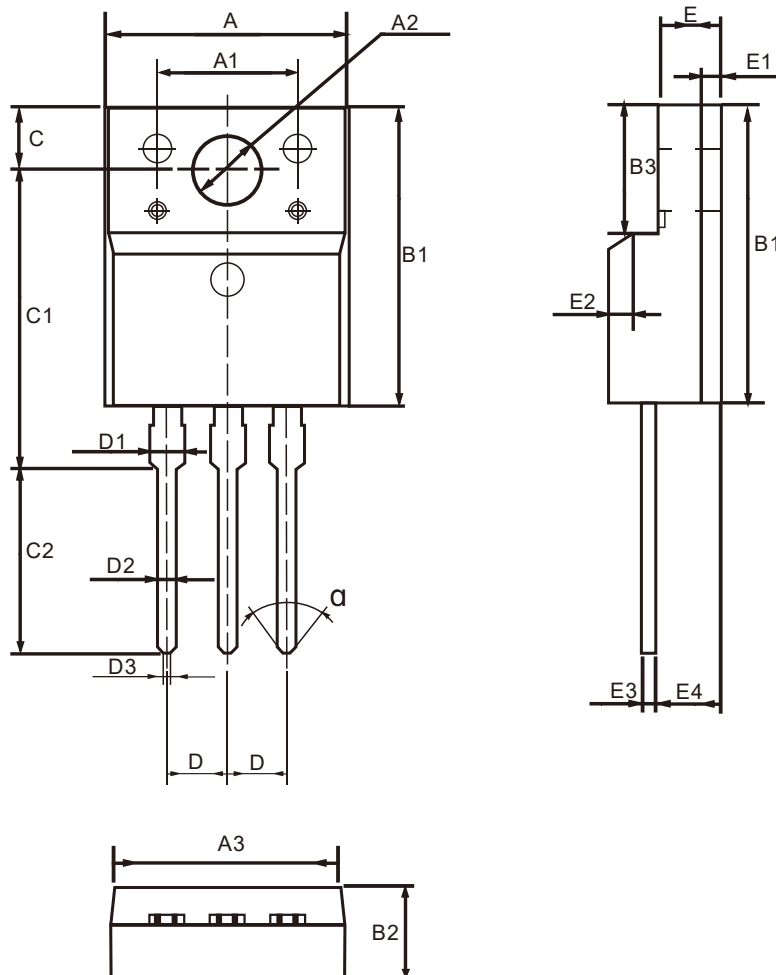
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## N-Channel Enhancement Mode Power MOSFET

### Package Outline

TO-220F

Dimensions in mm



TO-220F Package Dimensions

UNIT: mm

SYMBOL	min	nom	max	SYMBOL	min	nom	max
A	9.80		10.60	D		2.54	
A1		7.00		D1	1.15		1.55
A2	2.90		3.40	D2	0.60		1.00
A3	9.10		9.90	D3	0.20		0.50
B1	15.40		16.40	E	2.24		2.84
B2	4.35		4.95	E1		0.70	
B3	6.00		7.40	E2		1.0×45°	
C	3.00		3.70	E3	0.35		0.65
C1	15.00		17.00	E4	2.30		3.30
C2	8.80		10.80	$\alpha$ (度)		30°	