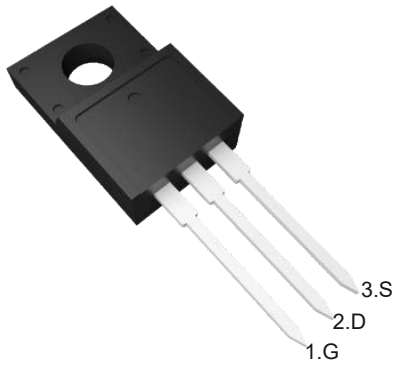
PJM50H15NTF

N-Channel Enhancement Mode Power MOSFET

Features

- Fast Switching
- Low Reverse transfer capacitances
- Low gate charge and low $R_{DS(on)}$
- V_{DS}= 500V,I_D= 15A
  $R_{DS(on)}$< 0.35Ω @V_{GS}= 10V

TO-220F

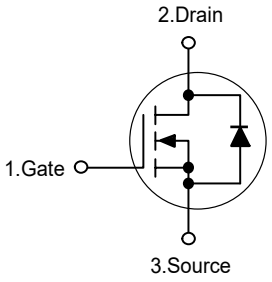


1.Gate 2.Drain 3.Source

Applications

- Power switch circuit of adaptor and charger

Schematic diagram



Absolute Maximum Ratings

Ratings at 25℃ ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	500	V
Gate-Source Voltage	V_{GS}	±30	V
Drain Current-Continuous	I_D	15	A
Drain Current-Pulsed Note1	I_{DM}	60	A
Single pulse avalanche energy Note4	E_{AS}	1200	mJ
Maximum Power Dissipation	P_D	70	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance,Junction-to-Ambient Note2	$R_{\theta JA}$	100	°C/W
Maximum Junction-to-Case Note2	$R_{\theta JC}$	1.79	°C/W

Electrical Characteristics

(Ta=25℃ unless otherwise specified)

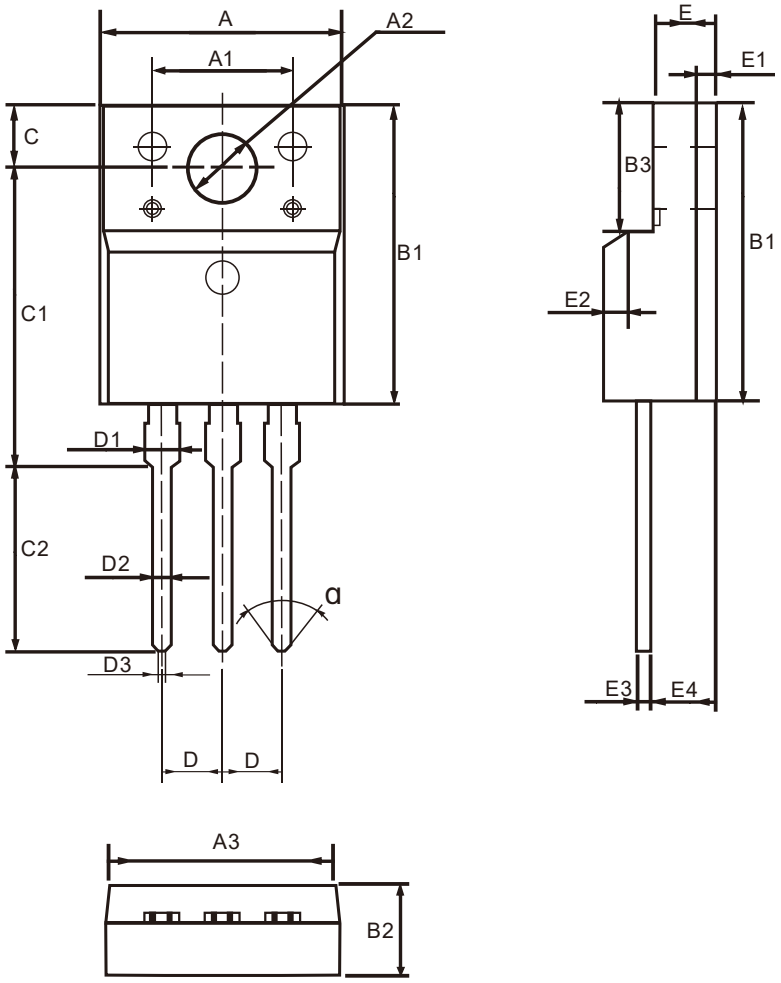
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	500	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=500V,V_{GS}=0V	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±30V,V_{DS}=0V	--	--	±100	nA
Gate Threshold Voltage Note3	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	2	--	4	V
Drain-Source On-Resistance Note3	$R_{DS(on)}$	V_{GS}=10V,I_D=7.5A	--	0.29	0.35	Ω
Forward Transconductance Note3	g_{FS}	V_{DS}=15V,I_D=15A	--	18	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V,f=1MHz	--	2350	--	pF
Output Capacitance	C_{oss}		--	230	--	pF
Reverse Transfer Capacitance	C_{rss}		--	25	--	pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=250V, I_D=15A V_{GS}=10V,R_G=6.1Ω	--	15	--	nS
Turn-on Rise Time	t_r		--	30	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	50	--	nS
Turn-off Fall Time	t_f		--	40	--	nS
Total Gate Charge	Q_g	V_{DD}=250V,I_D=15A, V_{GS}=10V	--	50	--	nC
Gate-Source Charge	Q_{gs}		--	12	--	nC
Gate-Drain Charge	Q_{gd}		--	20	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage Note3	V_{SD}	V_{GS}=0V,I_S=15A	--	--	1.5	V
Diode Forward Current Note2	I_S		--	--	15	A

Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2.Surface Mounted on FR4 Board, t ≤ 10 sec.
3.Pulse Test: Pulse width≤380μs, duty cycle≤2%.
4.E_{AS} Condition:L=10mH, I_D=15A, start T_J=25°C.

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	α（度）		30°	