

◆ Features:

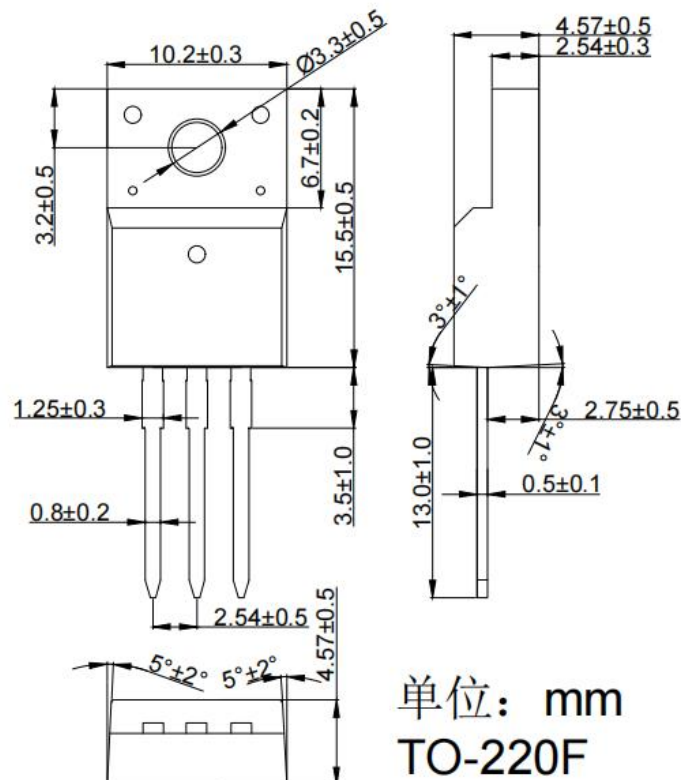
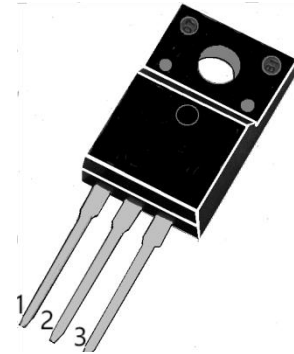
- ✧ Fast switching speed
开关速度快
- ✧ High input impedance and low level drive
高输入阻抗和低电平驱动
- ✧ Avalanche energy tested
雪崩能量测试
- ✧ Improved dv/dt capability, high ruggedness
提高 dv/dt 能力, 高耐用性

◆ Applications

- ✧ High efficiency switch mode power supplies
高效率开关电源
- ✧ Power factor correction
功率因数校正
- ✧ Electronic lamp ballast
电子整流器



TO-220F



单位: mm
TO-220F



TK12A50W

500V N-CHANNEL MOSFET

◆ Absolute Maximum Ratings (Tc=25°C)

Symbol	Parameters	Ratings	Unit
V _{DSS}	Drain-Source Voltage 漏源电压	500	V
V _{GS}	Gate-Source Voltage-Continuous 栅源电压	±30	V
I _D	Drain Current-Continuous (Note 2) 漏极持续电流	11.5	A
I _{DM}	Drain Current-Single Plused (Note 1) 漏极单次脉冲电流	46	A
P _D	Power Dissipation (Note 2) 功率损耗	35	W
T _j	Max.Operating junction temperature 最大结温	150	°C

◆ Electrical characteristics (Tc=25°C unless otherwise noted)

Symbo l	Parameters	Min	Typ	Max	Units	Conditions
Static Characteristics						
B _{VDSS}	Drain-Source Breakdown VoltageCurrent (Note 1) 漏极击穿电压	500	--	--	V	I _D =250μA, V _{GS} =0V, T _J =25°C
V _{GS(th)}	Gate Threshold Voltage 栅极开启电压	2.0	--	4.0	V	V _{DS} =V _{GS} , I _D =250μA
R _{DS(on)}	Drain-Source On-Resistance 漏源导通电阻	--	0.265	0.300	Ω	V _{GS} =10V, I _D =1A
I _{GSS}	Gate-Body Leakage Current 栅极漏电流	--	--	±100	nA	V _{GS} =±30V, V _{DS} =0
I _{DSS}	Zero Gate Voltage Drain Current 零栅极电压漏极电流	--	--	1	μA	V _{DS} =500V, V _{GS} =0
Switching Characteristics						

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T _{d (on)}	Turn-On Delay Time 开启延迟时间	--	55	--	ns	V _{DS} =400V, I _D =10A, R _G =10Ω (Note 2)
T _r	Rise Time 上升时间	--	30	--	ns	
T _{d (off)}	Turn-Off Delay Time 关闭延迟时间	--	104	--	ns	
T _f	Fall Time 下降时间	--	7	--	ns	
Q _g	Total Gate Charge 栅极总电荷	--	31	--	nC	V _{DS} =400V, V _{GS} =10V, I _D =20A (Note 2)
Q _{gs}	Gate-Source Charge 栅源极电荷	--	8	--	nC	
Q _{gd}	Gate-Drain Charge 栅漏极电荷	--	13	--	nC	
Dynamic Characteristics						
C _{iss}	Input Capacitance 输入电容	--	3200	--	pF	V _{DS} =25V, V _{GS} =0, f=1MHz
C _{oss}	Output Capacitance 输出电容	--	47	--	pF	
C _{rss}	Reverse Transfer Capacitance 反向传输电容	--	7	--	pF	
I _S	Continuous Drain-Source Diode Forward Current (Note 2) 二极管导通正向持续电流	--	--	11.5	A	
V _{SD}	Diode Forward On-Voltage 二极管正向导通电压	--	--	1.4	V	I _S =11A, V _{GS} =0
R _{th(j-c)}	Thermal Resistance, Junction to Case 结到外壳的热阻	--	--	3.57	°C/W	

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

Note 2: Pulse test: $PW \leq 300\mu s$, duty cycle $\leq 2\%$.