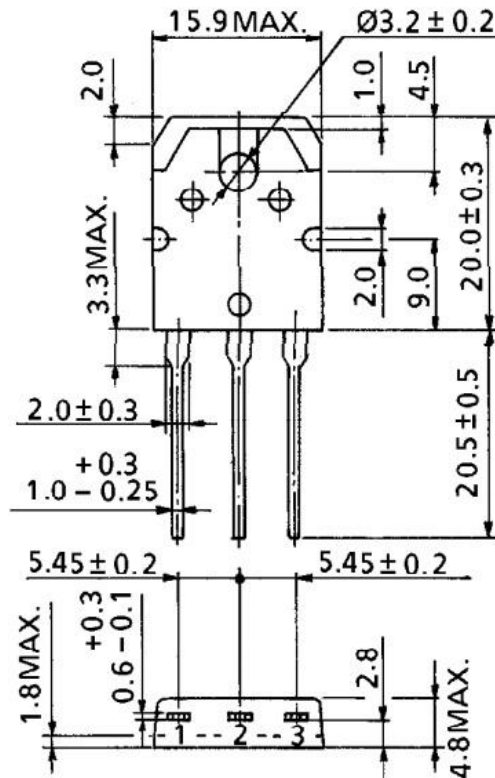
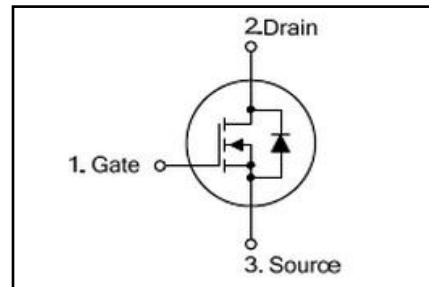
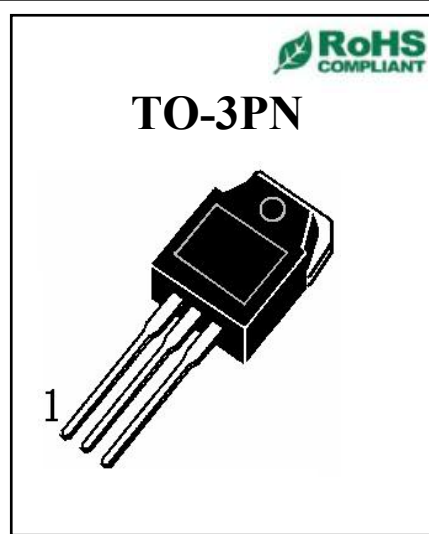


◆ **Features:**

- ◇ 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
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- ◇ 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



**IRFP460****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 | 20 | A |
| I _{DM} | Drain Current-Single Plused (Note 1) 漏极单次脉冲电流 | 80 | A |
| P _D | Power Dissipation (Note 2) 功率损耗 | 250 | W |
| T _j | Max.Operating junction temperature 最大结温 | 150 | °C |

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

| Symbol | 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 | -- | 4.0 | V | V _{DS} =V _{GS} , I _D =250μA |
| R _{DS(on)} | Drain-Source On-Resistance 漏源导通电阻 | -- | 0.23 | -- | 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 |
| g _{fs} | Forward Transconductance 正向跨导 | -- | 25 | -- | S | V _{DS} =40V, I _D =10A |
| Switching Characteristics | | | | | | |

**IRFP460****500V N-CHANNEL MOSFET**

| | | | | | | |
|--------------------------------|--|----|-------------|-------------|---------------|---|
| $T_{d(on)}$ | Turn-On Delay Time 开启延迟时间 | -- | 95 | 220 | ns | $V_{DS}=250V, I_D=20A,$ $R_G=25\Omega$ (Note 2) |
| T_r | Rise Time 上升时间 | -- | 370 | 740 | ns | |
| $T_{d(off)}$ | Turn-Off Delay Time 关闭延迟时间 | -- | 110 | 230 | ns | |
| T_f | Fall Time 下降时间 | -- | 100 | 225 | ns | |
| Q_g | Total Gate Charge 栅极总电荷 | -- | 45 | 62 | nC | $V_{DS}=480V,$ $V_{GS}=10V,$ $I_D=20A$ (Note 2) |
| Q_{gs} | Gate-Source Charge 栅源极电荷 | -- | 8.5 | -- | nC | |
| Q_{gd} | Gate-Drain Charge 栅漏极电荷 | -- | 18.5 | -- | nC | |
| Dynamic Characteristics | | | | | | |
| C_{iss} | Input Capacitance 输入电容 | -- | 2200 | 3210 | pF | $V_{DS}=25V, V_{GS}=0,$ $f=1MHz$ |
| C_{oss} | Output Capacitance 输出电容 | -- | 340 | 365 | pF | |
| C_{rss} | Reverse Transfer Capacitance 反向传输电容 | -- | 27 | 60 | pF | |
| I_S | Continuous Drain-Source Diode Forward Current (Note 2) 二极管导通正向持续电流 | -- | -- | 20 | A | |
| V_{SD} | Diode Forward On-Voltage 二极管正向导通电压 | -- | -- | 1.4 | V | $I_S=10A, V_{GS}=0$ |
| $R_{th(j-c)}$ | Thermal Resistance, Junction to Case 结到外壳的热阻 | -- | -- | 0.5 | $^{\circ}C/W$ | |

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

Note 2: Pulse test: PW \leq 300us , duty cycle \leq 2%.

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