



60V N-Channel MOSFET

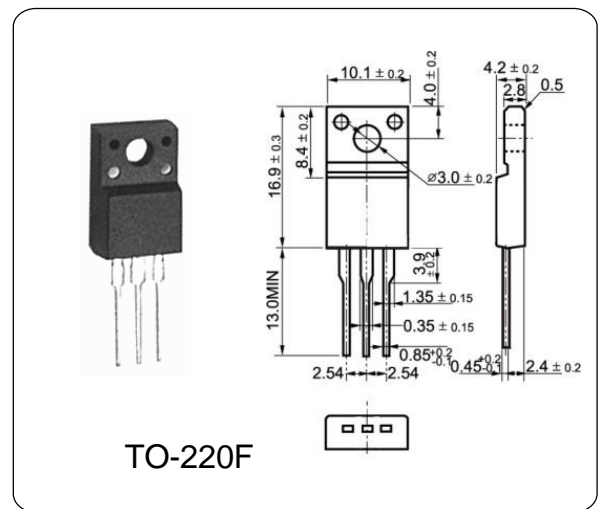
FQPF50N06

DESCRIPTION

These N-Channel enhancement mode power field effect transistors are produced using Fairchild's proprietary, planar stripe, DMOS technology. This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for low voltage applications such as automotive, DC/DC converters, and high efficiency switching for power management in portable and battery operated products.

ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C)

| Parameter | I | Value | Unit |
|-------------------------------------|-----------|----------|------|
| Drain-Source Voltage | V_{DSS} | 60 | V |
| Drain Current - Continuous | I_D | 50 | A |
| Drain Current - Pulsed | I_{DM} | 200 | A |
| Gate-Source Voltage | V_{GSS} | ± 25 | V |
| Power Dissipation | P_D | 120 | W |
| Max. Operating Junction Temperature | T_j | 150 | °C |
| Storage Temperature | T_{stg} | -55~150 | °C |



ELECTRICAL CHARACTERISTICS (Ta = 25 °C)

| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|------------------------------------|--------------|------------------------------------|------|------|------|-----------|
| Drain-Source Breakdown Voltage | BV_{DSS} | $V_{GS} = 0V, I_D = 250 \mu A$ | 60 | — | — | V |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS} = 60V, V_{GS} = 0V$ | — | — | 1.0 | μA |
| Gate-Body Leakage Current, Forward | I_{GSSF} | $V_{GS} = 25V, V_{DS} = 0V$ | — | — | 100 | nA |
| Gate-Body Leakage Current, Reverse | I_{GSSR} | $V_{GS} = -25V, V_{DS} = 0V$ | — | — | -100 | nA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = 250 \mu A$ | 2.0 | — | 4.0 | V |
| Static Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS} = 10V, I_D = 25A$ | — | 18 | 22 | $m\Omega$ |
| Forward Transconductance | g_{FS} | $V_{DS} = 25V, I_D = 25A$ | — | 22 | — | S |
| Drain-Source Diode Forward Voltage | V_{SD} | $V_{GS} = 0V, I_S = 50A$ | — | — | 1.5 | V |