FAIRCHILD
SEMICONDUCTOR™

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QFET™

FQPF9N50

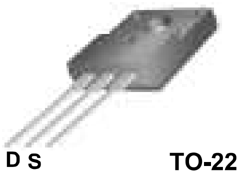
500V N-Channel MOSFET

General Description

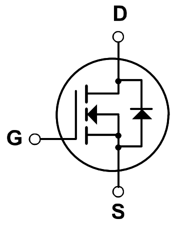
These N-Channel enhancement mode power field effect transistors are produced using Fairchild's proprietary, planar stripe, DMOS technology.
This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficiency switch mode power supply, power factor correction, electronic lamp ballast based on half bridge.

Features

- 5.3A, 500V, $R_{DS(on)}$ = 0.73Ω @V_{GS} = 10 V
- Low gate charge (typical 28 nC)
- Low Crss (typical 20 pF)
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability



TO-220F
FQPF Series



Absolute Maximum Ratings T_C = 25°C unless otherwise noted

Symbol	Parameter	FQPF9N50	Units
V_{DSS}	Drain-Source Voltage	500	V
I_D	Drain Current - Continuous (T_C = 25°C)	5.3	A
	- Continuous (T_C = 100°C)	3.4	A
I_{DM}	Drain Current - Pulsed (Note 1)	21	A
V_{GSS}	Gate-Source Voltage	± 30	V
E_{AS}	Single Pulsed Avalanche Energy (Note 2)	360	mJ
I_{AR}	Avalanche Current (Note 1)	5.3	A
E_{AR}	Repetitive Avalanche Energy (Note 1)	5.0	mJ
dv/dt	Peak Diode Recovery dv/dt (Note 3)	4.5	V/ns
P_D	Power Dissipation (T_C = 25°C)	50	W
	- Derate above 25°C	0.4	W/°C
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to +150	°C
T_L	Maximum lead temperature for soldering purposes, 1/8" from case for 5 seconds	300	°C

Thermal Characteristics

Symbol	Parameter	Typ	Max	Units
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case	--	2.5	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	--	62.5	°C/W