FAIRCHILD SEMICONDUCTOR™

January 2001

QFET™

FQPF13N10

100V N-Channel MOSFET

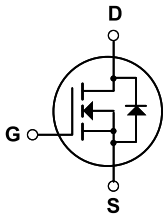
General Description

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 low voltage applications such as audio amplifier, high efficiency switching DC/DC converters, and DC motor control.

Features

- 8.7A, 100V, $R_{DS(on)}$ = 0.18Ω @V_{GS} = 10 V
- Low gate charge (typical 12 nC)
- Low Crss (typical 20 pF)
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability
- 175°C maximum junction temperature rating

TO-220F
FQPF Series



Absolute Maximum Ratings

T_C = 25°C unless otherwise noted

Symbol	Parameter		FQPF13N10	Units
V_{DSS}	Drain-Source Voltage		100	V
I_D	Drain Current - Continuous (T_C = 25°C)		8.7	A
	- Continuous (T_C = 100°C)		6.15	A
I_{DM}	Drain Current - Pulsed	(Note 1)	34.8	A
V_{GSS}	Gate-Source Voltage		± 25	V
E_{AS}	Single Pulsed Avalanche Energy	(Note 2)	95	mJ
I_{AR}	Avalanche Current	(Note 1)	8.7	A
E_{AR}	Repetitive Avalanche Energy	(Note 1)	3.0	mJ
dv/dt	Peak Diode Recovery dv/dt	(Note 3)	6.0	V/ns
P_D	Power Dissipation (T_C = 25°C)		30	W
	- Derate above 25°C		0.2	W/°C
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +175	°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	--	5.0	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	--	62.5	°C/W