FAIRCHILD SEMICONDUCTOR®

QFET®

FQP18N50V2/FQPF18N50V2
500V N-Channel MOSFET

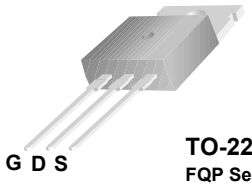
Features

- 550V @T_J = 150°C
- Typ. $R_{DS(on)}$ = 0.265Ω @V_{GS} = 10 V
- Low gate charge (typical 42 nC)
- Low Crss (typical 11 pF)
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability

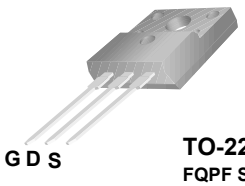
Description

These N-Channel enhancement mode power field effect transistors are produced using Fairchild's proprietary, planar stripe, DMOS technology.

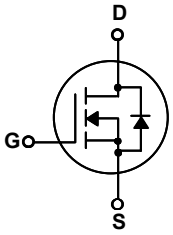
This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficient switched mode power supplies, active power factor correction, electronic lamp ballast based on half bridge topology.



TO-220
FQP Series



TO-220F
FQPF Series



Absolute Maximum Ratings

Symbol	Parameter		FQP18N50V2	FQPF18N50V2	Units
V_{DSS}	Drain-Source Voltage		500		V
I_D	Drain Current	- Continuous (T_C = 25°C)	18	18*	A
		- Continuous (T_C = 100°C)	12.1	12.1*	A
I_{DM}	Drain Current	- Pulsed (Note 1)	72	72*	A
V_{GSS}	Gate-Source Voltage		± 30		V
E_{AS}	Single Pulsed Avalanche Energy	(Note 2)	330		mJ
I_{AR}	Avalanche Current	(Note 1)	18		A
E_{AR}	Repetitive Avalanche Energy	(Note 1)	25		mJ
dv/dt	Peak Diode Recovery dv/dt	(Note 3)	4.5		V/ns
P_D	Power Dissipation (T_C = 25°C)		208	69	W
	- Derate above 25°C		1.67	0.55	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	FQP18N50V2	FQPF18N50V2	Units
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case	0.6	1.8	°C/W
$R_{\theta CS}$	Thermal Resistance, Case-to-Sink	0.5	--	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	62.5	62.5	°C/W