FAIRCHILD SEMICONDUCTOR®

August 2007

QFET®

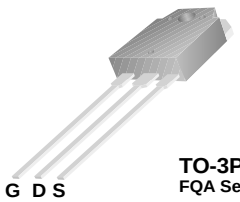
FQA46N15 / FQA46N15_F109
150V N-Channel MOSFET

Features

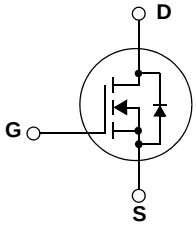
- 50A, 150V, $R_{DS(on)}$ = 0.042Ω @V_{GS} = 10 V
- Low gate charge (typical 85 nC)
- Low Crss (typical 100pF)
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability
- 175°C maximum junction temperature rating

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-3PN
FQA Series



Absolute Maximum Ratings

Symbol	Parameter			FQA46N15	Units
V_{DSS}	Drain-Source Voltage			150	V
I_D	Drain Current	- Continuous (T_C = 25°C)		50	A
		- Continuous (T_C = 100°C)		35.3	A
I_{DM}	Drain Current	- Pulsed	(Note 1)	200	A
V_{GSS}	Gate-Source Voltage			± 25	V
E_{AS}	Single Pulsed Avalanche Energy		(Note 2)	650	mJ
I_{AR}	Avalanche Current		(Note 1)	50	A
E_{AR}	Repetitive Avalanche Energy		(Note 1)	25	mJ
dv/dt	Peak Diode Recovery dv/dt		(Note 3)	6.0	V/ns
P_D	Power Dissipation (T_C = 25°C)			250	W
		- Derate above 25°C		1.67	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				

Thermal Characteristics