

FQP5N60C / FQPF5N60C

N-Channel QFET® MOSFET

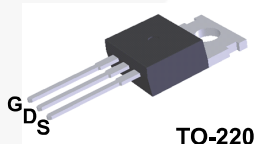
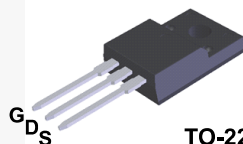
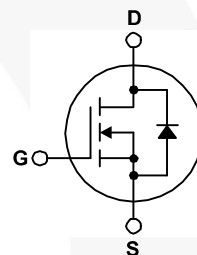
600 V, 4.5 A, 2.5 Ω

Description

This N-Channel enhancement mode power MOSFET is produced using Fairchild Semiconductor's proprietary planar stripe and DMOS technology. This advanced MOSFET technology has been especially tailored to reduce on-state resistance, and to provide superior switching performance and high avalanche energy strength. These devices are suitable for switched mode power supplies, active power factor correction (PFC), and electronic lamp ballasts.

Features

- 4.5 A, 600 V, $R_{DS(on)} = 2.5 \Omega$ (Max.) @ $V_{GS} = 10$ V, $I_D = 2.25$ A
- Low Gate Charge (Typ. 15 nC)
- Low C_{rss} (Typ. 6.5 pF)
- 100% Avalanche Tested


TO-220

TO-220F


Absolute Maximum Ratings $T_C = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	FQP5N60C	FQPF5N60C	Unit
V_{DSS}	Drain-Source Voltage	600		V
I_D	Drain Current - Continuous ($T_C = 25^\circ\text{C}$)	4.5	4.5 *	A
	- Continuous ($T_C = 100^\circ\text{C}$)	2.6	2.6 *	A
I_{DM}	Drain Current - Pulsed (Note 1)	18	18 *	A
V_{GSS}	Gate-Source Voltage	± 30		V
E_{AS}	Single Pulsed Avalanche Energy (Note 2)	210		mJ
I_{AR}	Avalanche Current (Note 1)	4.5		A
E_{AR}	Repetitive Avalanche Energy (Note 1)	10		mJ
dv/dt	Peak Diode Recovery dv/dt (Note 3)	4.5		V/ns
P_D	Power Dissipation ($T_C = 25^\circ\text{C}$)	100	33	W
	- Derate above 25°C	0.8	0.26	W/ $^\circ\text{C}$
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to $+150$		$^\circ\text{C}$
T_L	Maximum Lead Temperature for Soldering, 1/8" from Case for 5 Seconds	300		$^\circ\text{C}$

* Drain current limited by maximum junction temperature.

Thermal Characteristics

Symbol	Parameter	FQP5N60C	FQPF5N60C	Unit
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case, Max.	1.25	3.79	$^\circ\text{C/W}$
$R_{\theta CS}$	Thermal Resistance, Case-to-Sink Typ, Max.	0.5	--	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient, Max.	62.5	62.5	$^\circ\text{C/W}$