

FDPF16N50 / FDPF16N50T

N-Channel UniFET™ MOSFET

500 V, 16 A, 380 mΩ

Features

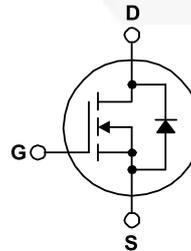
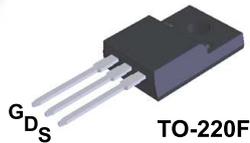
- $R_{DS(on)} = 380 \text{ m}\Omega$ (Max.) @ $V_{GS} = 10 \text{ V}$, $I_D = 8 \text{ A}$
- Low Gate Charge (Typ. 32 nC)
- Low C_{rss} (Typ. 20 pF)
- 100% Avalanche Tested

Applications

- LCD/LED/PDP TV
- Lighting
- Uninterruptible Power Supply

Description

UniFET™ MOSFET is Fairchild Semiconductor's high voltage MOSFET family based on planar stripe and DMOS technology. This MOSFET is tailored to reduce on-state resistance, and to provide better switching performance and higher avalanche energy strength. This device family is suitable for switching power converter applications such as power factor correction (PFC), flat panel display (FPD) TV power, ATX and electronic lamp ballasts.



Absolute Maximum Ratings T_C = 25°C unless otherwise noted.

Symbol	Parameter	FDPF16N50 FDPF16N50T	Unit
V_{DSS}	Drain-Source Voltage	500	V
I_D	Drain Current - Continuous ($T_C = 25^\circ\text{C}$) - Continuous ($T_C = 100^\circ\text{C}$)	16* 9.6*	A A
I_{DM}	Drain Current - Pulsed (Note 1)	64*	A
V_{GSS}	Gate-Source voltage	± 30	V
E_{AS}	Single Pulsed Avalanche Energy (Note 2)	780	mJ
I_{AR}	Avalanche Current (Note 1)	16	A
E_{AR}	Repetitive Avalanche Energy (Note 1)	20	mJ
dv/dt	Peak Diode Recovery dv/dt (Note 3)	4.5	V/ns
P_D	Power Dissipation ($T_C = 25^\circ\text{C}$) - Derate above 25°C	38.5 0.3	W W/°C
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to +150	°C
T_L	Maximum Lead Temperature for Soldering, 1/8" from Case for 5 Seconds	300	°C

* Drain current limited by maximum junction temperature.

Thermal Characteristics

Symbol	Parameter	FDPF16N50 FDPF16N50T	Unit
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case, Max.	3.3	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient, Max.	62.5	°C/W