

IRF614B/IRFS614B

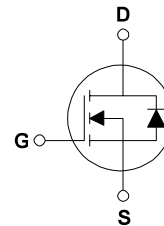
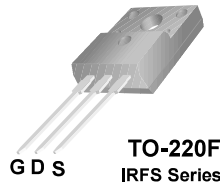
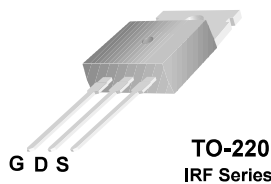
250V N-Channel MOSFET

General Description

These N-Channel enhancement mode power field effect transistors are produced using Fairchild's proprietary, planar, 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 efficiency switching DC/DC converters and switch mode power supplies.

Features

- 2.8A, 250V, $R_{DS(on)} = 2.0\Omega @ V_{GS} = 10V$
- Low gate charge (typical 8.1 nC)
- Low Crss (typical 7.5 pF)
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability



Absolute Maximum Ratings T_C = 25°C unless otherwise noted

Symbol	Parameter	IRF614B	IRFS614B	Units
V _{DSS}	Drain-Source Voltage	250		V
I _D	Drain Current - Continuous (T _C = 25°C) - Continuous (T _C = 100°C)	2.8	2.8 *	A
		1.8	1.8 *	A
I _{DM}	Drain Current - Pulsed (Note 1)	8.5	8.5 *	A
V _{GSS}	Gate-Source Voltage	± 30		V
E _{AS}	Single Pulsed Avalanche Energy (Note 2)	45		mJ
I _{AR}	Avalanche Current (Note 1)	2.8		A
E _{AR}	Repetitive Avalanche Energy (Note 1)	4.0		mJ
dv/dt	Peak Diode Recovery dv/dt (Note 3)	5.5		V/ns
P _D	Power Dissipation (T _C = 25°C) - Derate above 25°C	40	22	W
		0.32	0.18	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

* Drain current limited by maximum junction temperature.

Thermal Characteristics

Symbol	Parameter	IRF614B	IRFS614B	Units
R _{θJC}	Thermal Resistance, Junction-to-Case Max.	3.14	5.58	°C/W
R _{θCS}	Thermal Resistance, Case-to-Sink Typ.	0.5	—	°C/W
R _{θJA}	Thermal Resistance, Junction-to-Ambient Max.	62.5	62.5	°C/W