

FUJI POWER MOSFET Super FAP-G Series

N-CHANNEL SILICON POWER MOSFET

■ Features

High speed switching
Low on-resistance
No secondary breakdown
Low driving power
Avalanche-proof

■ Applications

Switching regulators
UPS (Uninterruptible Power Supply)
DC-DC converters

■ Maximum ratings and characteristic Absolute maximum ratings

● (Tc=25°C unless otherwise specified)

Item	Symbol	Ratings	Unit
Drain-source voltage	V _{DS}	650	V
Continuous drain current	I _D	±8	A
Pulsed drain current	I _D (puls)	±32	A
Gate-source voltage	V _{GS}	±30	V
Non-repetitive Avalanche current	I _{AR} *2	8	A
Maximum Avalanche Energy	E _{AV} *1	250	mJ
Maximum Drain-Source dV/dt	dV _{DS} /dt *4	20	kV/μs
Peak Diode Recovery dV/dt	dV/dt *3	5	kV/μs
Max. power dissipation	P _D	T _a =25°C	2.16
		T _c =25°C	50
Operating and storage temperature range	T _{ch}	+150	°C
	T _{stg}	-55 to +150	°C
Isolation voltage	V _{ISO} *6	2	kVrms

*1 L=7.19mH, V_{CC}=65V *2 T_{ch}≤150°C *3 I_F≤-I_D, -di/dt=50A/μs, V_{CC}≤BV_{DSS}, T_{ch}≤150°C

*4 V_{DS} ≤ 650V *6 t=60sec f=60Hz

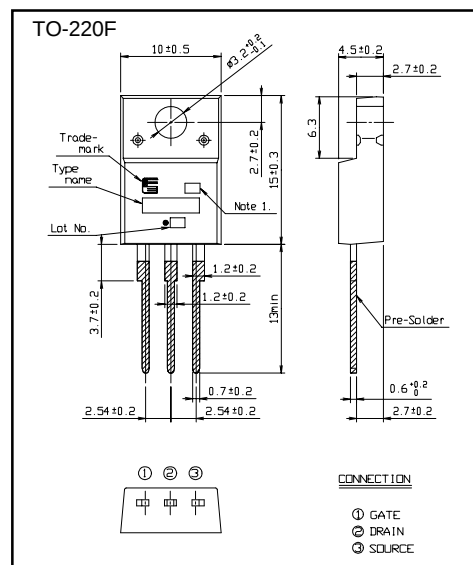
● Electrical characteristics (T_c =25°C unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	V _{(BR)DSS}	I _D = 250μA V _{GS} =0V	650			V
Gate threshold voltage	V _{GS(th)}	I _D = 250μA V _{DS} =V _{GS}	3.0		5.0	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =650V V _{GS} =0V			25	μA
		V _{DS} =520V V _{GS} =0V			250	μA
Gate-source leakage current	I _{GSS}	V _{GS} =±30V V _{DS} =0V		10	100	nA
Drain-source on-state resistance	R _{DS(on)}	I _D =4A V _{GS} =10V		0.68	0.88	Ω
Forward transconductance	g _{fs}	I _D =4A V _{DS} =25V	3.5	7		S
Input capacitance	C _{iss}	V _{DS} =75V		1200	1800	pF
Output capacitance	C _{oss}	V _{GS} =0V		140	210	pF
Reverse transfer capacitance	C _{rss}	f=1MHz		6	9	pF
Turn-on time t _{on}	td(on)	V _{CC} =300V I _D =4A		17	26	ns
	t _r	V _{GS} =10V		15	23	ns
Turn-off time t _{off}	td(off)	R _{GS} =10 Ω		34	51	ns
	t _f			7	11	ns
Total Gate Charge	Q _G	V _{CC} =300V		30	45	nC
Gate-Source Charge	Q _{GS}	I _D =8A		11	16.5	nC
Gate-Drain Charge	Q _{GD}	V _{GS} =10V		10	15	nC
Avalanche capability	I _{AV}	L=7.19mH T _{ch} =25°C	8			A
Diode forward on-voltage	V _{SD}	I _F =8A V _{GS} =0V T _{ch} =25°C		1.00	1.50	V
Reverse recovery time	t _{rr}	I _F =8A V _{GS} =0V		0.75		μs
Reverse recovery charge	Q _{rr}	-di/dt=100A/μs T _{ch} =25°C		5.5		μC

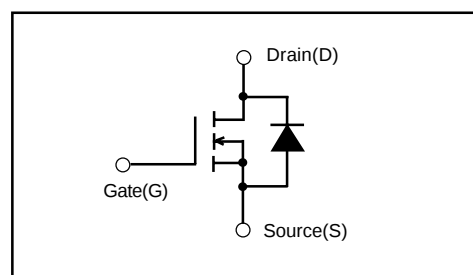
● Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R _{th(ch-c)}	channel to case			2.50	°C/W
	R _{th(ch-a)}	channel to ambient			58.0	°C/W

■ Outline Drawings (mm)



■ Equivalent circuit schematic



Characteristics

