

FUJI POWER MOSFET

Super FAP-G Series

200309
N-CHANNEL SILICON POWER MOSFET

■ Features

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

■ Applications

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

■ Maximum ratings and characteristicAbsolute maximum ratings

● (Tc=25°C unless otherwise specified)

Item	Symbol	Ratings	Unit	Remarks
Drain-source voltage	V _{DS}	500	V	
	V _{DSX}	500	V	V _{GS} = -30V
Continuous drain current	I _D	±19	A	
Pulsed drain current	I _{D(puls)}	±76	A	
Gate-source voltage	V _{GS}	±30	V	
Non-Repetitive Maximum avalanche current	I _{AS}	19	A	T _{ch} ≤150°C
Non-Repetitive Maximum avalanche energy	E _{AS}	245.3	mJ	L=1.25mH V _{CC} =50V *2
Maximum Drain-Source dV/dt	dV _{DS} /dt	20	kV/s	V _{DS} ≤500V
Peak diode recovery dV/dt	dV/dt	5	kV/μs	*3
Max. power dissipation	P _D	2.50	W	T _a =25°C
		235		T _c =25°C
Operating and storage temperature range	T _{ch}	+150	°C	
	T _{sta}	-55 to +150	°C	

*2 See to Avalanche Energy Graph

*3 $I_F \leq -1p$, $-di/dt = 50A/\mu s$, $V_{CC} \leq BV_{DSS}$, $T_{ch} \leq 150^\circ C$

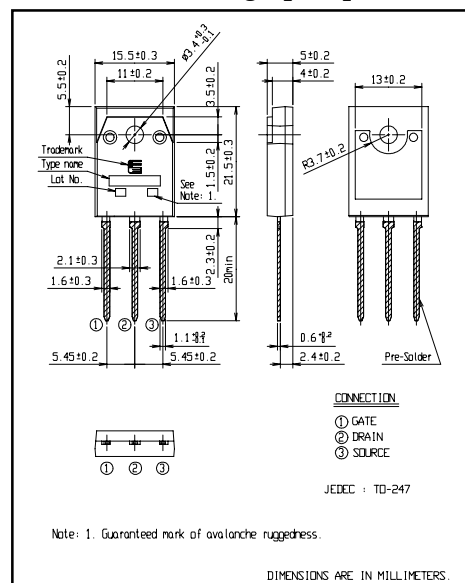
● Electrical characteristics (T_c =25°C unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	V(BR)DSS	Id= 250μA VGS=0V	500			V
Gate threshold voltage	VGS(th)	Id= 250μA VDS=VGS	3.0		5.0	V
Zero gate voltage drain current	IDSS	VDS=500V VGS=0V Tch=25°C			25	μA
		VDS=400V VGS=0V Tch=125°C			250	
Gate-source leakage current	IGSS	VGS=±30V VDS=0V		10	100	nA
Drain-source on-state resistance	RDS(on)	Id=9.5A VGS=10V		0.29	0.38	Ω
Forward transconductance	gfs	Id=9.5A VDS=25V	7.5	15		S
Input capacitance	Ciss	VDS=25V		1560	2340	pF
Output capacitance	Coss	VGS=0V		230	345	
Reverse transfer capacitance	Crss	f=1MHz		8	12	
Turn-on time ton	td(on)	VCC=300V Id=9.5A		29	43.5	ns
	tr	VGS=10V		13	19.5	
Turn-off time toff	td(off)	RGS=10 Ω		56	84	
	tf			8	12	
Total Gate Charge	QG	VCC=250V		34	51	nC
Gate-Source Charge	QGS	Id=19A		13	19.5	
Gate-Drain Charge	QGD	VGS=10V		10	15	
Avalanche capability	IAV	L=1.25mH Tch=25°C	19			A
Diode forward on-voltage	VSD	IF=19A VGS=0V Tch=25°C		1.20	1.50	V
Reverse recovery time	trr	IF=19A VGS=0V		0.57		μs
Reverse recovery charge	Qrr	-di/dt=100A/μs Tch=25°C		7.0		uC

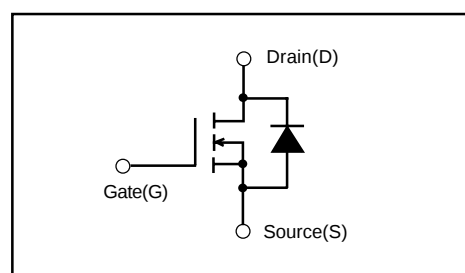
● Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R _{th(ch-c)}	channel to case			0.532	°C/W
	R _{th(ch-a)}	channel to ambient			50.0	°C/W

■ Outline Drawings [mm]



■ Equivalent circuit schematic



Characteristics

