

FUJI POWER MOSFET

Super FAP-G Series

200311 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

● (T_c=25°C unless otherwise specified)

Item	Symbol	Ratings	Unit	Remarks
Drain-source voltage	V _{DS}	600	V	
	V _{DSX}	600	V	V _{GS} =-30V
Continuous drain current	I _D	±16	A	
Pulsed drain current	I _{D(puls)}	±64	A	
Gate-source voltage	V _{GS}	±30	V	
Non-Repetitive Maximum avalanche current	I _{AS}	16	A	T _{ch} ≤150°C
Non-Repetitive Maximum avalanche energy	E _{AS}	242.7	mJ	L=1.74mH V _{CC} =60V *1
Maximum Drain-Source dV/dt	dV _{DS} /dt	20	kV/s	V _{DS} ≤600V
Peak diode recovery dV/dt	dV/dt	5	kV/μs	*2
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 _{stg}	-55 to +150	°C	

*1 See to Avalanche Energy Graph

*2 $|I_F| \leq -I_D$, $-di/dt = 50A/\mu s$, $V_{CC} \leq BV_{DSS}$, $T_{ch} \leq 150^\circ C$

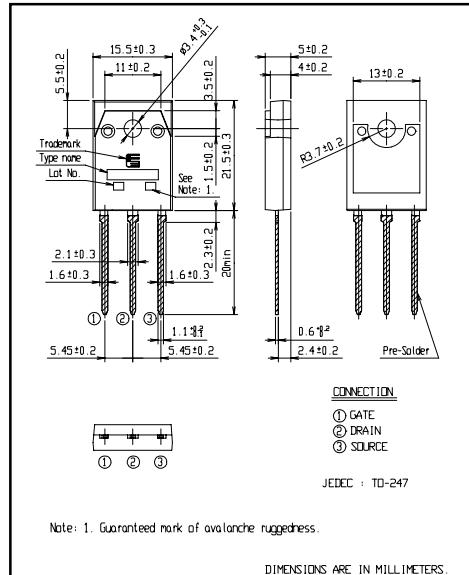
● Electrical characteristics ($T_c = 25^\circ\text{C}$ unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	V(BR)DSS	Id= 250µA VGS=0V	600			V
Gate threshold voltage	VGS(th)	Id= 250µA VDS=VGS	3.0		5.0	V
Zero gate voltage drain current	IdSS	VDS=600V VGS=0V Tch=25°C			25	µA
		VDS=480V VGS=0V Tch=125°C			250	
		VGS=±30V VDS=0V		10	100	nA
Gate-source leakage current	IGSS			0.42	0.57	Ω
Drain-source on-state resistance	RDS(on)	Id=8A VGS=10V				
Forward transconductance	gfs	Id=8A VDS=25V	6.5	13		S
Input capacitance	Ciss	VDS=25V VGS=0V f=1MHz		1590	2390	pF
Output capacitance	Coss			200	300	
Reverse transfer capacitance	Crss			8	12	
Turn-on time ton	td(on)	VCC=300V Id=8A VGS=10V RGS=10Ω		29	43.5	ns
	tr			16	24	
Turn-off time toff	td(off)			58	87	
	tf			8	12	
Total Gate Charge	QG	VCC=300V Id=16A VGS=10V		34	51	nC
Gate-Source Charge	QGS			12	18	
Gate-Drain Charge	QGD			10	15	
Avalanche capability	IAV	L=1.74mH Tch=25°C	16			A
Diode forward on-voltage	VSD	IF=16A VGS=0V Tch=25°C		1.00	1.50	V
Reverse recovery time	trr	IF=16A VGS=0V -di/dt=100A/µs Tch=25°C		0.68		µs
Reverse recovery charge	Qrr			7.8		µC

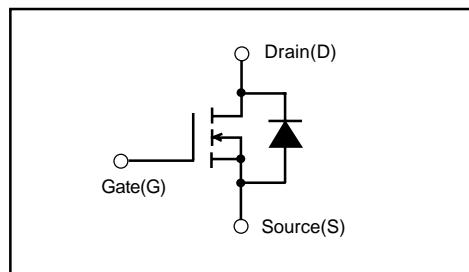
● Thermal characteristics

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

