

2SK3527-01



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}	600	V
	V _{DSX} *5	600	V
Continuous drain current	I _D	±21	A
Pulsed drain current	I _{D(puls)}	±84	A
Gate-source voltage	V _{GS}	±30	V
Repetitive or non-repetitive	I _{AR} *2	21	A
Maximum Avalanche Energy	E _{AS} *1	333.8	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	2.50
		T _c =25°C	335
Operating and storage temperature range	T _{ch}	+150	°C
	T _{stg}	-55 to +150	°C

*1 L=1.4mH, V_{CC}=60V, See to Avalanche Energy Graph *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} ≤ 600V *5 V_{GS} = -30V

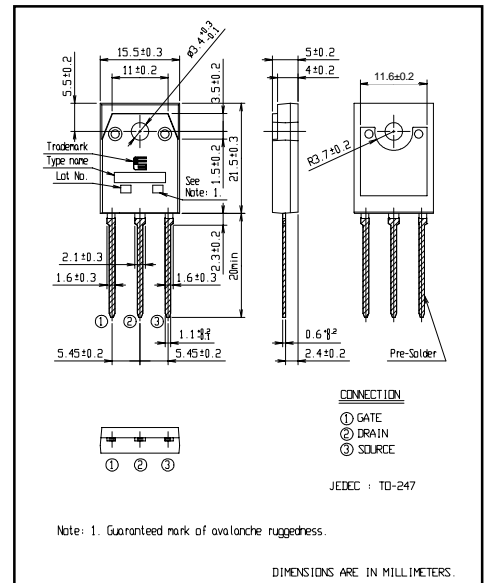
Electrical characteristics (Tc = 25°C unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	V _{(BR)DSS}	I _D = 250μA V _{GS} = 0V	600			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} = 600V V _{GS} = 0V			25	μA
		V _{DS} = 480V V _{GS} = 0V			250	
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 = 8.5A V _{GS} = 10V		0.29	0.37	Ω
Forward transconductance	g _{fs}	I _D = 8.5A V _{DS} = 25V	10	20		S
Input capacitance	C _{iss}	V _{DS} = 25V		2280	3420	pF
Output capacitance	C _{oss}	V _{GS} = 0V		290	435	
Reverse transfer capacitance	C _{rss}	f = 1MHz		16	24	
Turn-on time t _{on}	td(on)	V _{CC} = 300V I _D = 8.5A		26	39	ns
	tr	V _{GS} = 10V		37	56	
Turn-off time t _{off}	td(off)	R _{GS} = 10 Ω		78	117	
	tf			13	19	
Total Gate Charge	Q _G	V _{CC} = 300V		54	81	nC
Gate-Source Charge	Q _{GS}	I _D = 17A		15	23	
Gate-Drain Charge	Q _{GD}	V _{GS} = 10V		20	30	
Avalanche capability	I _{AV}	L = 1.4mH T _{ch} = 25°C	21			A
Diode forward on-voltage	V _{SD}	I _F = 17A V _{GS} = 0V T _{ch} = 25°C		0.93	1.50	V
Reverse recovery time	t _{rr}	I _F = 17A V _{GS} = 0V		0.7		μs
Reverse recovery charge	Q _{rr}	-di/dt = 100A/μs T _{ch} = 25°C		10.0		μC

Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R _{th(ch-c)}	channel to case			0.373	°C/W
	R _{th(ch-a)}	channel to ambient			50.0	°C/W

Outline Drawings [mm]



Equivalent circuit schematic

