

# 2SK3673-01MR

## 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 <sub>DS</sub>	700	V
	V <sub>DSX</sub> *5	700	V
Continuous drain current	I <sub>D</sub>	±10	A
Pulsed drain current	I <sub>D(puls)</sub>	±40	A
Gate-source voltage	V <sub>GS</sub>	±30	V
Repetitive or non-repetitive	I <sub>AR</sub> *2	10	A
Maximum Avalanche Energy	E <sub>AS</sub> *1	242.2	mJ
Maximum Drain-Source dV/dt	dV <sub>DS</sub> /dt *4	40	kV/μs
Peak Diode Recovery dV/dt	dV/dt *3	5	kV/μs
Max. power dissipation	P <sub>D</sub>	T <sub>a</sub> =25°C	2.16
		T <sub>c</sub> =25°C	80
Operating and storage temperature range	T <sub>ch</sub>	+150	°C
	T <sub>stg</sub>	-55 to +150	°C
Isolation Voltage	V <sub>iso</sub> *6	2	kVrms

\*1 L=4.45mH, V<sub>CC</sub>=70V, T<sub>ch</sub>=25°C, See to Avalanche Energy Graph \*2 T<sub>ch</sub>≤150°C

\*3 I<sub>F</sub>≤-I<sub>D</sub>, -di/dt=50A/μs, V<sub>CC</sub>≤BV<sub>DSS</sub>, T<sub>ch</sub>≤150°C \*4 V<sub>DS</sub>≤700V \*5 V<sub>GS</sub>=-30V \*6 t=60sec, f=60Hz

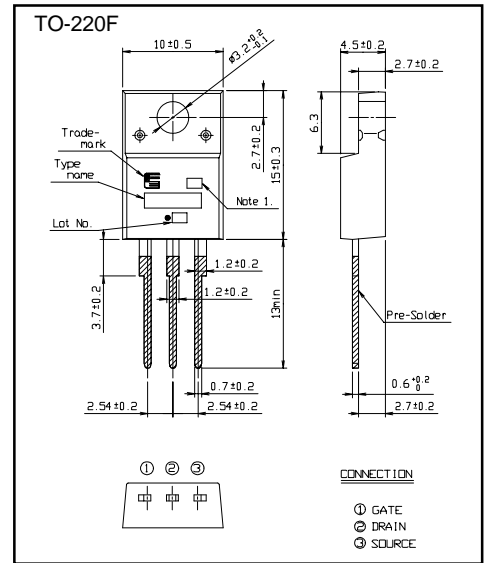
### Electrical characteristics (Tc =25°C unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	V(BR) <sub>DSS</sub>	I <sub>D</sub> =250μA V <sub>GS</sub> =0V	700			V
Gate threshold voltage	V <sub>GS(th)</sub>	I <sub>D</sub> =250μA V <sub>DS</sub> =V <sub>GS</sub>	3.0		5.0	V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =700V V <sub>GS</sub> =0V	T <sub>ch</sub> =25°C		25	μA
			T <sub>ch</sub> =125°C		250	
Gate-source leakage current	I <sub>GSS</sub>	V <sub>GS</sub> =±30V V <sub>DS</sub> =0V			100	nA
Drain-source on-state resistance	R <sub>DS(on)</sub>	I <sub>D</sub> =5A V <sub>GS</sub> =10V		0.91	1.18	Ω
Forward transconductance	g <sub>fs</sub>	I <sub>D</sub> =5A V <sub>DS</sub> =25V	5	9.5		S
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =25V V <sub>GS</sub> =0V f=1MHz		900	1350	pF
Output capacitance	C <sub>oss</sub>			140	210	
Reverse transfer capacitance	C <sub>rss</sub>			8	12	
Turn-on time t <sub>on</sub>	t <sub>d(on)</sub>	V <sub>CC</sub> =300V I <sub>D</sub> =5A V <sub>GS</sub> =10V		22	33	ns
			t <sub>r</sub>		6	
	t <sub>f</sub>		40	60		
Turn-off time t <sub>off</sub>	t <sub>d(off)</sub>	R <sub>GS</sub> =10 Ω		9	14	ns
			t <sub>r</sub>		25	
	Q <sub>G</sub>	V <sub>CC</sub> =350V		4	6	
Gate-Source Charge	Q <sub>GS</sub>	I <sub>D</sub> =10A		8.5	13	
Gate-Drain Charge	Q <sub>GD</sub>	V <sub>GS</sub> =10V				
Avalanche capability	I <sub>AV</sub>	L=4.45mH T <sub>ch</sub> =25°C	10			A
Diode forward on-voltage	V <sub>SD</sub>	I <sub>F</sub> =10A V <sub>GS</sub> =0V T <sub>ch</sub> =25°C		0.90	1.50	V
Reverse recovery time	t <sub>rr</sub>	I <sub>F</sub> =10A V <sub>GS</sub> =0V		2.75		μs
Reverse recovery charge	Q <sub>rr</sub>	-di/dt=100A/μs T <sub>ch</sub> =25°C		14.0		μC

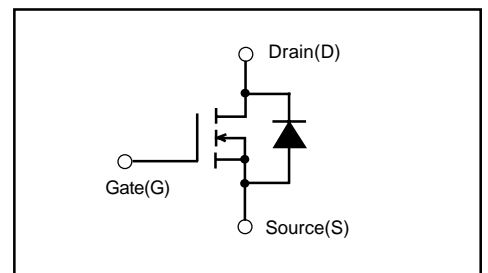
### Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R <sub>th(ch-c)</sub>	channel to case			1.563	°C/W
	R <sub>th(ch-a)</sub>	channel to ambient			58.0	°C/W

### Outline Drawings [mm]



### Equivalent circuit schematic



Characteristics

