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2SK3611-01MR

FUJI ELECTRIC

FUJI POWER MOSFET

Super FAP-G Series

N-CHANNEL SILICON POWER MOSFET

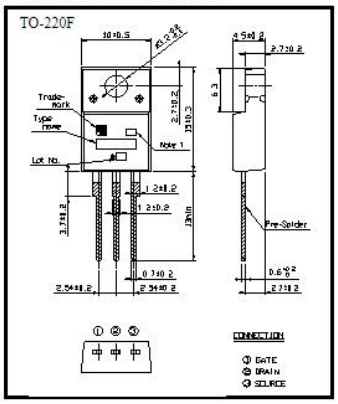
Features

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

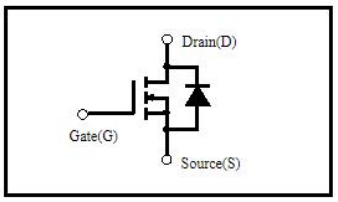
Applications

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

Outline Drawings (mm)



Equivalent circuit schematic



Maximum ratings and characteristicAbsolute maximum ratings

(Tc=25°C unless otherwise specified)

Item	Symbol		Ratings	Unit
Drain-source voltage	VDS		250	V
	VDSX *5		220	V
Continuous drain current	ID		±10	A
Pulsed drain current	ID(puls)		±40	A
Gate-source voltage	VGS		±30	V
Non-repetitive Avalanche current	IAS *2		10	A
Maximum Avalanche Energy	EAS *1		182	mJ
Maximum Drain-Source dV/dt	dVDS/dt *4		20	kV/μs
Peak Diode Recovery dV/dt	dV/dt *3		5	kV/μs
Max. power dissipation	PD	Ta=25°C	2.16	W
		Tc=25°C	25	
Operating and storage temperature range	Tch		+150	°C
	Tstg		-55 to +150	°C
Isolation voltage	VISO		2	kVrms

*1 L=3.05mH, Vcc=48V *2 Tch≦150°C *3 IF≦ID, -di/dt=50A/μs, Vcc BVDSS, Tch 150°C
*4 VDS≦250V *5 VGS=-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 voltaget	V(BR)DSS	ID= 250μA VGS=0V		250			V
Gate threshold voltage	VGS(th)	ID= 250μA VDS=VGS		3.0		5.0	V
Zero gate voltage drain current	IDSS	VDS=250V VGS=0V	Tch=25°C			25	μA
		VDS=200V 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=5A VGS=10V			200	260	mΩ
Forward transcondutance	gfs	ID=5A VDS=25V		5.1	0		S
Input capacitance	Ciss	VDS=75V			785	1178	pF
Output capacitance	Coss	VGS=0V			88	132	
Reverse transfer capacitance	Crss	f=1MHz			46		
Turn-on time ton	td(on)	VCC=48V ID=5A			12	18	ns
	tr	VGS=10V			2.7	4.1	
Turn-off time toff	td(off)	RGS=10Ω			22	33	
	tf				7.4	11.1	
Total Gate Charge	QG	VCC=125V			21	31.5	nC
Gate-Source Charge	QGS	ID=10A			8.12		
Gate-Drain Charge	QGD	VGS=10V			5	7.5	
Avalanche capability	IAV	L=100μH Tch=25°C		10			A
Diode forward on-voltage	VSD	IF=10A VGS=0V Tch=25°C			1.10	1.65	V
Reverse recovery time	trr	IF=10A VGS=0V			0.155		μs
Reverse recovery charge	Qrr	-di/dt=100A/μs Tch=25°C			1.05		μC

Thermalcharacteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	Rth(ch-c)	channel to case			5.0	°C/W
	Rth(ch-a)	channel to ambient			58.0	°C/W