

2SK2902-01MR

FUJI POWER MOS-FET

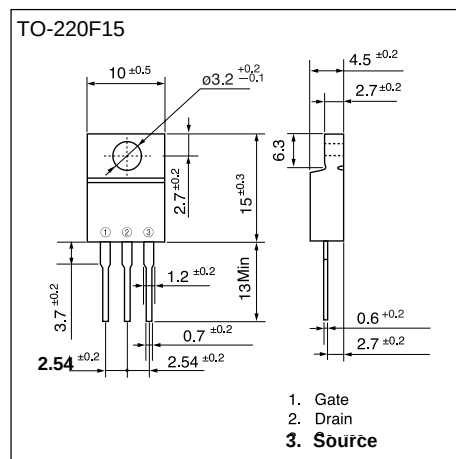
N-CHANNEL SILICON POWER MOS-FET

■ 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



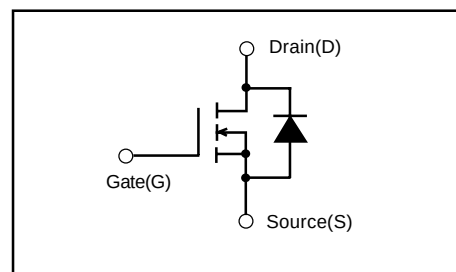
■ Maximum ratings and characteristicAbsolute maximum ratings

● (Tc=25°C unless otherwise specified)

Item	Symbol	Rating	Unit
Drain-source voltage	V_{DS}	60	V
Continuous drain current	I_D	± 45	A
Pulsed drain current	$I_{D(puls)}$	± 180	A
Gate-source voltage	V_{GS}	± 30	V
Maximum Avalanche Energy	E_{AV}^{*1}	461.9	mJ
Max. power dissipation	P_D	40	W
Operating and storage	T_{ch}	+150	$^{\circ}C$
temperature range	T_{stg}	-55 to +150	$^{\circ}C$

*1 $L=0.304\text{mH}$, $V_{cc}=24\text{V}$

■ Equivalent circuit schematic



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

Item	Symbol	Test Conditions		Min.	Typ.	Max.	Units
Drain-source breakdown voltage	BV _{DSS}	I _D =1mA V _{GS} =0V		60			V
Gate threshold voltage	V _{GS(th)}	I _D =10mA	V _{DS} =V _{GS}	2.5	3.0	3.5	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =60V	T _{ch} =25°C		10	500	μA
		V _{GS} =0V	T _{ch} =125°C		0.2	1.0	mA
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 =22.5A V _{GS} =10V			12.0	14.5	mΩ
Forward transconductance	g _{fs}	I _D =22.5A V _{DS} =25V		10.0	25.0		S
Input capacitance	C _{iss}	V _{DS} =25V			2300	3450	pF
Output capacitance	C _{oss}	V _{GS} =0V			910	1370	
Reverse transfer capacitance	C _{rss}	f=1MHz			260	390	
Turn-on time t _{on}	td(on)	V _{CC} =30V I _D =45A			18	30	ns
	tr	V _{GS} =10V			55	80	
Turn-off time t _{off}	td(off)	R _{GS} =10 Ω			70	120	
	tf				48	80	
Avalanche capability	I _{AV}	L=100 μH T _{ch} =25°C		45			A
Diode forward on-voltage	V _{SD}	I _F =45A V _{GS} =0V T _{ch} =25°C			1.0	1.5	V
Reverse recovery time	t _{rr}	I _F =45A V _{GS} =0V			60		ns
Reverse recovery charge	Q _{rr}	-di/dt=100A/μs T _{ch} =25°C			0.11		μC

● Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R _{th(ch-c)}	channel to case			3.125	°C/W
	R _{th(ch-a)}	channel to ambient			62.5	°C/W

Characteristics

