

2SK2640-01MR

FUJI POWER MOSFET

N-CHANNEL SILICON POWER MOSFET

FAP-2S Series

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

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

Item	Symbol	Ratings	Unit
Drain-source voltage	V_{DS}	500	V
Continuous drain current	I_D	± 10	A
Pulsed drain current	$I_{D(puls)}$	± 40	A
Gate-source voltage	V_{GS}	± 35	V
Repetitive or non-repetitive	I_{AR}^*2	10	A
Maximum Avalanche Energy	E_{AS}^*1	77.6	mJ
Max. power dissipation	P_D	50	W
Operating and storage	T_{ch}	+150	$^\circ\text{C}$
temperature range	T_{stg}	-55 to +150	$^\circ\text{C}$

*1 $L=1.42\text{mH}$, $V_{CC}=50\text{V}$ *2 $T_{ch}\leq 150^\circ\text{C}$

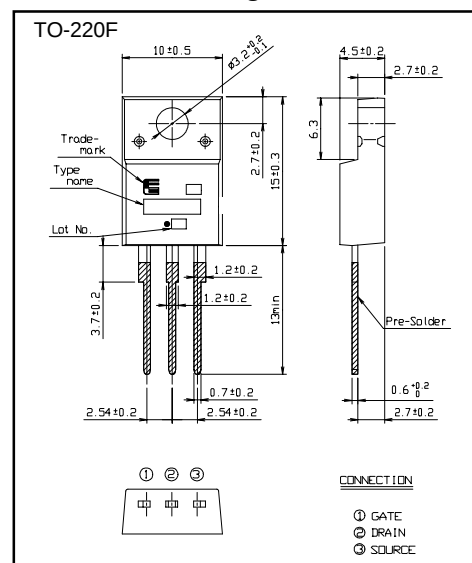
Electrical characteristics ($T_c=25^\circ\text{C}$ unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$ $V_{GS}=0\text{V}$	500			V
Gate threshold voltage	$V_{GS(th)}$	$I_D=1\text{mA}$ $V_{DS}=V_{GS}$	3.5	4.0	4.5	V
Zero gate voltage drain current	I_{DSS}	$V_{DS}=500\text{V}$ $V_{GS}=0\text{V}$ $T_{ch}=25^\circ\text{C}$		10	500	μA
		$T_{ch}=125^\circ\text{C}$		0.2	1.0	mA
Gate-source leakage current	I_{GSS}	$V_{GS}=\pm 35\text{V}$ $V_{DS}=0\text{V}$		10	100	nA
Drain-source on-state resistance	$R_{DS(on)}$	$I_D=5\text{A}$ $V_{GS}=10\text{V}$		0.73	0.90	Ω
Forward transconductance	g_{fs}	$I_D=5\text{A}$ $V_{DS}=25\text{V}$	2.5	5.0		S
Input capacitance	C_{iss}	$V_{DS}=25\text{V}$		950	1450	pF
Output capacitance	C_{oss}	$V_{GS}=0\text{V}$		180	270	
Reverse transfer capacitance	C_{rss}	$f=1\text{MHz}$		80	120	
Turn-on time t_{on}	$t_{d(on)}$	$V_{CC}=300\text{V}$ $I_D=10\text{A}$		25	40	ns
	t_r	$V_{GS}=10\text{V}$		70	110	
Turn-off time t_{off}	$t_{d(off)}$	$R_{GS}=10\Omega$		70	110	
	t_f			45	70	
Avalanche capability	I_{AV}	$L=100\mu\text{H}$ $T_{ch}=25^\circ\text{C}$	10			A
Diode forward on-voltage	V_{SD}	$I_F=2I_{DR}$ $V_{GS}=0\text{V}$ $T_{ch}=25^\circ\text{C}$		1.1	1.65	V
Reverse recovery time	t_{rr}	$I_F=I_{DR}$ $V_{GS}=0\text{V}$		450		ns
Reverse recovery charge	Q_{rr}	$-di/dt=100\text{A}/\mu\text{s}$ $T_{ch}=25^\circ\text{C}$		5.5		μC

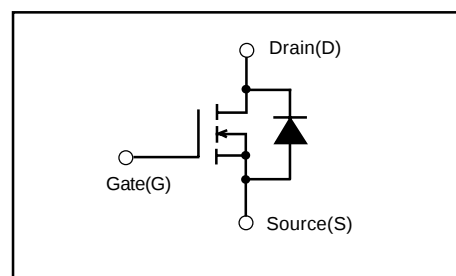
Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	$R_{th(ch-c)}$	channel to case			2.5	$^\circ\text{C}/\text{W}$
	$R_{th(ch-a)}$	channel to ambient			62.5	$^\circ\text{C}/\text{W}$

Outline Drawings



Equivalent circuit schematic



Characteristics

