

Fuji power MOSFET Specification

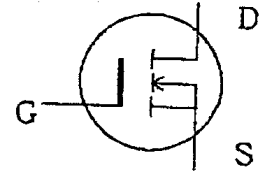
2SK1512-01

1. Scope

This specifies Fuji power MOSFET 2SK1512-01

2. Outline

- I) Construction N-channel enhancement mode power MOSFET
- II) Application for switching
- III) Outview TO-3P (MK5C25623)



3. Absolute maximum ratings at $T_c=25^\circ\text{C}$ (unless otherwise specified)

Description	Symbol	Characteristics	Unit	Remarks
Drain-source voltage	V_{DS}	900	V	
Drain-gate voltage	V_{DGR}	900	V	$R_{GS}=20\text{K}\Omega$
Continuous Drain current	I_D	10	A	
Pulsed drain current	I_{Dpulse}	30	A	
Gate-source voltage	V_{GS}	± 30	V	
Maximum power dissipation	P_D	150	W	
Operating and storage temperature range	T_{ch}	150	$^\circ\text{C}$	
	T_{stg}	-55 ~ +150	$^\circ\text{C}$	

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

Static ratings

Description	Symbol	Conditions	Characteristics			Unit	
			Min.	Typ.	Max.		
Drain-source breakdown voltage	BV_{DSS}	$I_D=1\text{mA}$ $V_{GS}=0\text{V}$	900			V	
Gate threshold voltage	$V_{GS(th)}$	$I_D=1\text{mA}$ $V_{DS}=V_{GS}$	2.5	3.5	5.0	V	
Zero gate voltage drain current	I_{DSS}	$V_{DS}=900\text{V}$ $V_{GS}=0\text{V}$	$T_{ch}=25^\circ\text{C}$		10	500	μA
	I_{DSS}		$T_{ch}=125^\circ\text{C}$		0.2	1.0	mA
Gate-source leakage current	I_{GSS}	$V_{GS}=\pm 30\text{V}$ $V_{DS}=0\text{V}$		10	100	nA	
Drain-source on-state resistance	$R_{DS(on)}$	$I_D=5\text{A}$ $V_{GS}=10\text{V}$		1.0	1.2	Ω	

Dynamic ratings

Description	Symbol	Conditions	Characteristics			Unit
			Min.	Typ.	Max.	
Forward transconductance	g_{fs}	$I_D = 5 A$ $V_{DS} = 25 V$	3.0	6.0		S
Input capacitance	C_{iss}	$V_{DS} = 25 V$ $V_{GS} = 0 V$ $f = 1 MHz$		1500	2250	pF
Output capacitance	C_{oss}			200	300	pF
Reverse transfer capacitance	C_{rss}			100	150	pF
Turn-on time	$t_{d(on)}$	$V_{CC} = 600V$ $V_{GS} = 10V$ $I_D = 10A$ $R_{GS} = 25\Omega$		40	60	ns
	t_r			120	180	ns
Turn-off time	$t_{d(off)}$			240	360	ns
	t_f			110	165	ns

Reverse diode

Description	Symbol	Conditions	Characteristics			Unit
			Min.	Typ.	Max.	
Avalanche capability	I_{AV}	$L = 100 \mu H, T_{ch} = 25^\circ C$ *see Fig 1 and 2	10			A
Continuous reverse drain current	I_{DR}	$T_C = 25^\circ C$			10	A
Pulsed reverse drain current	I_{DRH}	$T_C = 25^\circ C$			30	A
Diode forward on-voltage	V_{SD}	$I_F = 2 \times I_{DR}$ $V_{GS} = 0 V, T_{ch} = 25^\circ C$		0.96	1.44	V
Reverse recovery time	t_{rr}	$I_F = I_{DR}$ $-dI_F/dt = 100A/\mu S$ $T_{ch} = 25^\circ C$		600		ns
Reverse recovery charge	Q_{rr}			4.5		μC

5. Thermal resistance

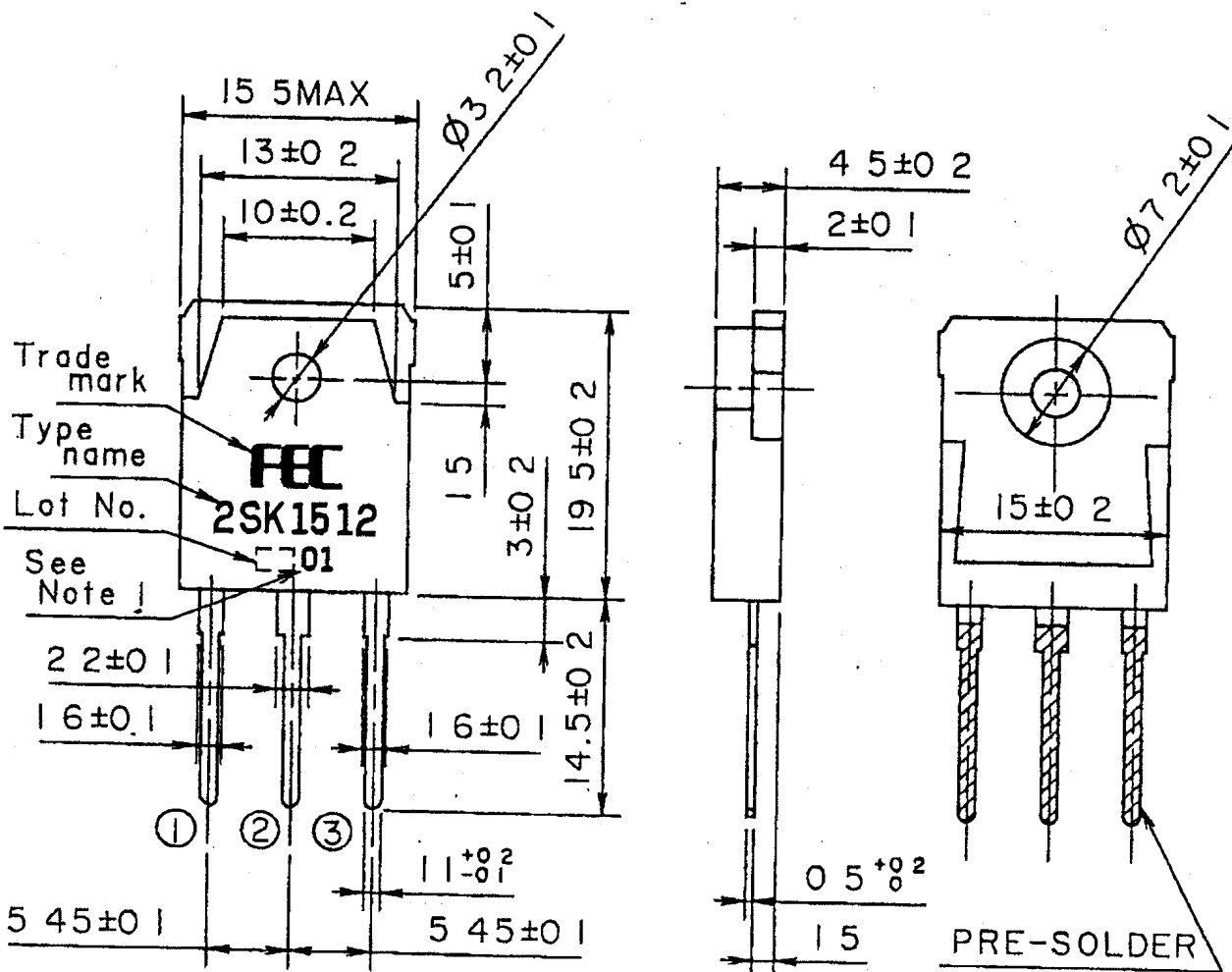
Description	Symbol	Conditions	Characteristics			Unit
			Min.	Typ.	Max.	
Thermal resistance	$R_{th_{ch-c}}$				0.83	$^\circ C/W$
	$R_{th_{ch-a}}$				35.0	$^\circ C/W$

The express written consent of Fuji Electric Co., Ltd.

DATE	NAME	APPROVED	Fuji Electric Co., Ltd.
DRAWN			
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FUJI POWER MOS FET

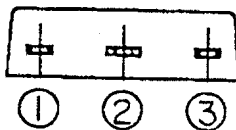
TYPE 2SK1512-01



DIMENSIONS ARE IN MILLIMETERS

CONNECTION

- ① GATE
- ② DRAIN
- ③ SOURCE



JEDEC TO-228AA
EIAJ SC-65

Note 1 Guaranteed mark of avalanche ruggedness

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DATE	NAME	APPROVED
1990-12-27	MARIYAMA	M

Fuji Electric Co., Ltd.