

2SK3522-01

- 1.Scope** This specifies Fuji Power MOSFET 2SK3522-01
- 2.Construction** N-Channel enhancement mode power MOSFET
- 3.Applications** for Switching
- 4.Outview** TO-247

5.Absolute Maximum Ratings at Tc=25°C (unless otherwise specified)

Description	Symbol	Characteristics	Unit	Remarks
Drain-Source Voltage	V_{DS}	500	V	
Continuous Drain Current	I_D	± 21	A	
Pulsed Drain Current	I_{DP}	± 84	A	
Gate-Source Voltage	V_{GS}	± 30	V	
Maximum Avalanche Current	I_{AR}	21	A	Tch \leq 150°C
Maximum Avalanche Energy	E_{AV}	382	mJ	L=1.60mH Vcc=50V
Maximum Drain-Source dV/dt	dV_{DS}/dt	20	kV/ μ s	VDS \leq 500V
Peak Diode Recovery dV/dt	dV/dt	5	kV/ μ s	*1
Maximum Power Dissipation	P_D	2.5	W	Ta=25°C
		220		Tc=25°C
Operating and Storage Temperature range	T_{ch}	150	°C	
	T_{stg}	-55 to +150	°C	

*1 $I_F \leq -I_D, -di/dt = 50A/\mu s, V_{cc} \leq BV_{DSS}, Tch \leq 150^\circ C$ **6.Electrical Characteristics at Tc=25°C (unless otherwise specified)****Static Ratings**

Description	Symbol	Conditions	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = 250\mu A$ $V_{GS} = 0V$	500	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$I_D = 250\mu A$ $V_{DS} = V_{GS}$	3.0	-	5.0	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 500V$ $V_{GS} = 0V$ $T_{ch} = 25^\circ C$	-	-	25	μA
		$V_{DS} = 400V$ $V_{GS} = 0V$ $T_{ch} = 125^\circ C$	-	-	250	
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 30V$ $V_{DS} = 0V$	-	10	100	nA
Drain-Source On-State Resistance	$R_{DS(on)}$	$I_D = 10.5A$ $V_{GS} = 10V$	-	0.20	0.26	Ω

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CHECKED June-07-'01	<i>T. HOSEN</i>				
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Dynamic Ratings

Description	Symbol	Conditions	min.	typ.	max.	Unit
Forward Transconductance	g_{fs}	$I_D=10.56A$ $V_{DS}=25V$	(11)		-	S
Input Capacitance	C_{iss}	$V_{DS}=25V$	-		(4600)	pF
Output Capacitance	C_{oss}	$V_{GS}=0V$	-		(465)	
Reverse Transfer Capacitance	C_{rss}	$f=1MHz$	-		(20)	
Turn-On Time	$t_d(on)$	$V_{cc}=300V$	-		(50)	ns
	t_r	$V_{GS}=10V$	-		(45)	
Turn-Off Time	$t_d(off)$	$I_D=10.5A$	-		(90)	
	t_f	$R_{GS}=10\Omega$	-		(30)	
Total Gate Charge	Q_G	$V_{cc}=300V$	-		(100)	nC
Gate-Source Charge	Q_{GS}	$I_D=21A$	-		(40)	
Gate-Drain Charge	Q_{GD}	$V_{GS}=10V$	-		(35)	

Reverse Diode

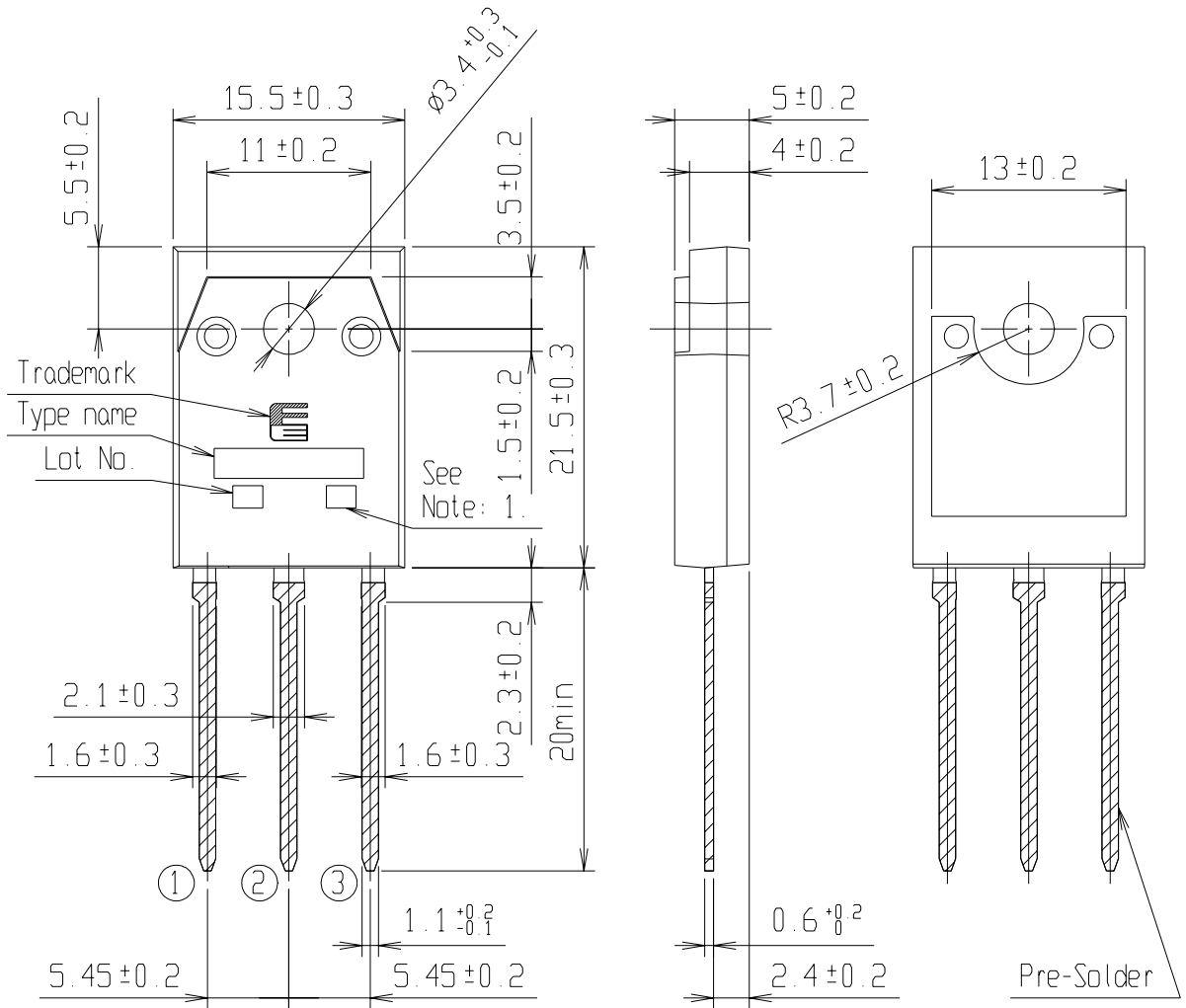
Description	Symbol	Conditions	min.	typ.	max.	Unit
Avalanche Capability	I_{AV}	$L=1.60mH$ $T_{ch}=25^\circ C$ $V_{cc}=50V$	21	-	-	A
Diode Forward On-Voltage	V_{SD}	$I_F=21A$ $V_{GS}=0V$ $T_{ch}=25^\circ C$	-	1.00	1.50	V
Reverse Recovery Time	t_{rr}	$I_F=21A$ $V_{GS}=0V$	-	1.32	-	μs
Reverse Recovery Charge	Q_{rr}	$-di/dt=100A/\mu s$ $T_{ch}=25^\circ C$	-	12.0	-	μC

7.Thermal Resistance

Description	Symbol	min.	typ.	max.	Unit
Channel to Case	$R_{th}(ch-c)$			0.57	$^\circ C/W$
Channel to Ambient	$R_{th}(ch-a)$			50.0	$^\circ C/W$

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CONNECTION

- ① GATE
- ② DRAIN
- ③ SOURCE

JEDEC : TO-247

Note: 1. Guaranteed mark of avalanche ruggedness.

DIMENSIONS ARE IN MILLIMETERS.

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