

# SPECIFICATION

Device Name : Power MOSFET  
 Type Name : **2SK3271-01**  
 Spec. No. :

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	DATE	NAME	APPROVED	<b>Fuji Electric Co.,Ltd.</b>								
DRAWN	Sep. - 8 - '98			DWG NO. <span style="float: right;">1•^13</span> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 10px; height: 10px;">a</td><td style="width: 10px; height: 10px;">e</td></tr> <tr><td style="width: 10px; height: 10px;">b</td><td style="width: 10px; height: 10px;"></td></tr> <tr><td style="width: 10px; height: 10px;">c</td><td style="width: 10px; height: 10px;"></td></tr> <tr><td style="width: 10px; height: 10px;">d</td><td style="width: 10px; height: 10px;"></td></tr> </table>	a	e	b		c		d	
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- 1.Scope** This specifies Fuji Power MOSFET 2SK3271-01
- 2.Construction** N-Channel enhancement mode power MOSFET
- 3.Applications** for Switching
- 4.Outview** TO-3P Outview See to 5/13 page

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

Description	Symbol	Characteristics	Unit	Remarks
Drain-Source Voltage	V <sub>DS</sub>	60	V	
	V <sub>DSX</sub>	30	V	V <sub>GS</sub> =-30V
Continuous Drain Current	I <sub>D</sub>	±100	A	
Pulsed Drain Current	I <sub>DP</sub>	±400	A	
Gate-Source Voltage	V <sub>GS</sub>	±30	V	
Maximum Avalanche Energy	E <sub>AV</sub>	490.4	mJ	*1
Maximum Power Dissipation	P <sub>D</sub>	155	W	
Operating and Storage	T <sub>ch</sub>	150	°C	
Temperature range	T <sub>stg</sub>	-55 to +150	°C	

\*1 L=65.4uH, Vcc=24V

**6.Electrical Characteristics at Tc=25°C (unless otherwise specified)**

**Static Ratings**

Description	Symbol	Conditions	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	I <sub>D</sub> =1mA V <sub>GS</sub> =0V	60	-	-	V
		I <sub>D</sub> =1mA V <sub>GS</sub> =-30V	30	-	-	V
Gate Threshold Voltage	V <sub>GS(th)</sub>	I <sub>D</sub> =10mA V <sub>DS</sub> =V <sub>GS</sub>	2.5	3.0	3.5	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =60V V <sub>GS</sub> =0V	-	1.0	100	μA
		T <sub>ch</sub> =125°C	-	10	500	μA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±30V V <sub>DS</sub> =0V	-	10	100	nA
Drain-Source On-State Resistance	R <sub>DS(on)</sub>	I <sub>D</sub> =50A V <sub>GS</sub> =10V	-	5.0	6.5	mΩ



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### Dynamic Ratings

Description	Symbol	Conditions	min.	typ.	max.	Unit
Forward Transconductance	$g_{fs}$	$I_D=50A$ $V_{DS}=10V$	25	50	-	S
Input Capacitance	$C_{iss}$	$V_{DS}=25V$	-	9000	-	pF
Output Capacitance	$C_{oss}$	$V_{GS}=0V$	-	1250	-	
Reverse Transfer Capacitance	$C_{rss}$	$f=1MHz$	-	700	-	
Turn-On Time	$t_d(on)$	$V_{cc}=30V$	-	50	-	ns
	$t_r$	$V_{GS}=10V$	-	200	-	
Turn-Off Time	$t_d(off)$	$I_D=100A$	-	150	-	
	$t_f$	$R_G=10\ \Omega$	-	135	-	

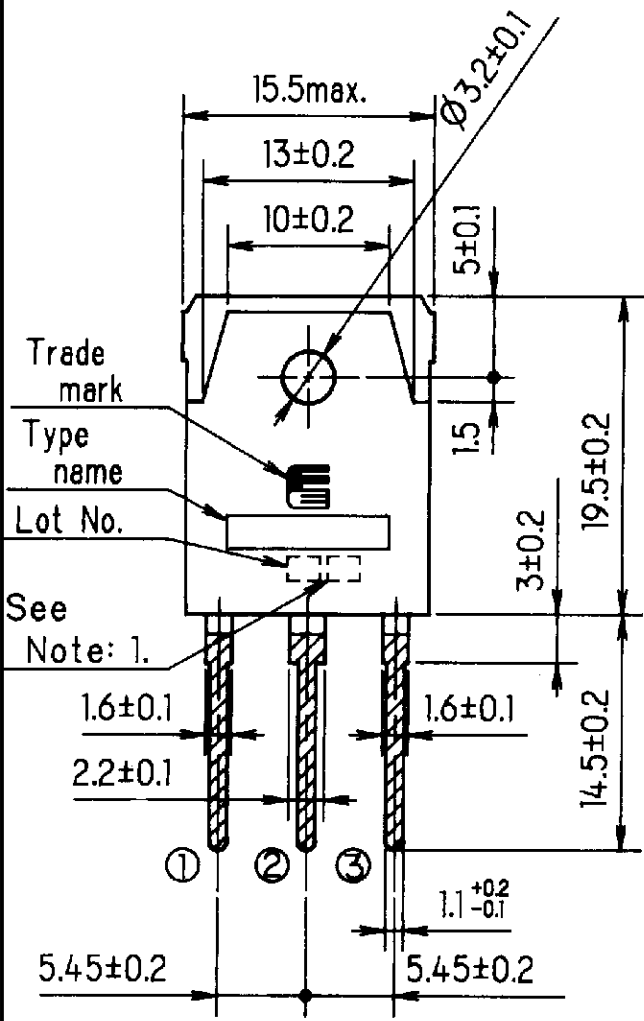
### Reverse Diode

Description	Symbol	Conditions	min.	typ.	max.	Unit
Avalanche Capability	$I_{AV}$	$L=100\ \mu H$ $T_{ch}=25^\circ C$ See Fig.1 and Fig.2	100	-	-	A
Diode Forward On-Voltage	$V_{SD}$	$I_F=100A$ $V_{GS}=0V$ $T_{ch}=25^\circ C$	-	1.0	1.5	V
Reverse Recovery Time	$t_{rr}$	$I_F=50A$ $V_{GS}=0V$	-	85	-	ns
Reverse Recovery Charge	$Q_{rr}$	$-di/dt=100A/\mu s$ $T_{ch}=25^\circ C$	-	0.25	-	$\mu C$

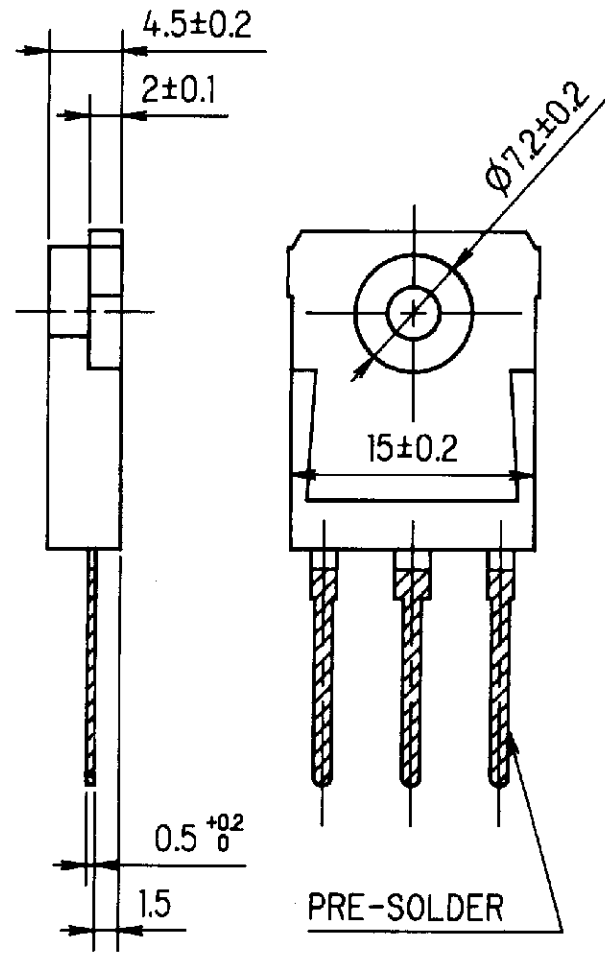
### 7.Thermal Resistance

Description	Symbol	min.	typ.	max.	Unit
Channel to Case	$R_{th}(ch-c)$	-	-	0.806	$^\circ C/W$
Channel to Ambient	$R_{th}(ch-a)$	-	-	50.0	$^\circ C/W$

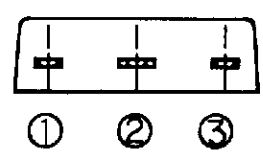
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Trade mark  
Type name  
Lot No.  
See Note: 1.



DIMENSIONS ARE IN MILLIMETERS.



CONNECTION

- ① GATE
- ② DRAIN
- ③ SOURCE

Note: 1. Guaranteed mark of avalanche ruggedness.

JEDEC : TO-247  
EIAJ : SC-65