

# 2SJ474-01L,S

FUJI POWER MOSFET

## P-CHANNEL SILICON POWER MOSFET

## FAP-III SERIES

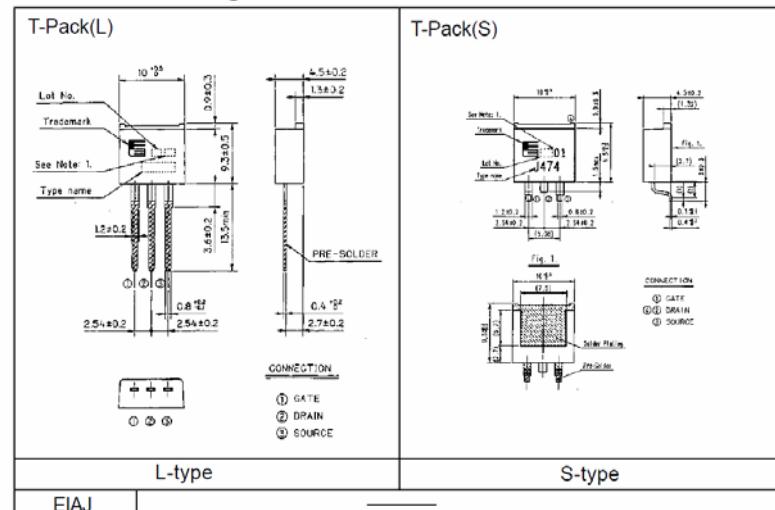
### ■ Features

- High speed switching
- Low on-resistance
- No secondary breakdown
- Low driving power
- High forward Transconductance
- Avalanche-proof

### ■ Applications

- Switching regulators
- DC-DC converters
- General purpose power amplifier

### ■ Outline Drawings



### ■ Maximum ratings and characteristics

#### ● Absolute maximum ratings (Tc=25°C unless otherwise specified)

Item	Symbol	Rating	Unit
Drain-source voltage	VDS	-60	V
Continuous drain current	Id	±7	A
Pulsed drain current	Id(puls)	±28	A
Gate-source voltage	VGS	±20	V
Maximum avalanche energy *1	EAV	110.8	mJ
Maximum power dissipation(Tc=25°C)	Pd	20	W
Operating and storage temperature range	Tch	+150	°C
	Tstg	-55 to +150	°C

\*1 L=3.02mH, Vcc= -24V

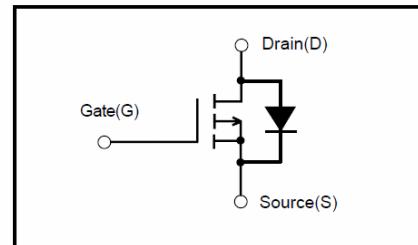
#### ● Electrical characteristics (Tc =25°C unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	BVDSS	Id=1mA VGS=0V	-60			V
Gate threshold voltage	VGS(th)	Id=1mA VDS=VGS	-1.0	-1.5	-2.5	V
Zero gate voltage drain current	Idss	VDS=-60V VGS=0V		-10	-500	μA
				-0.2	-1.0	mA
Gate-source leakage current	IGSS	VGS=±20V VDS=0V	10	100	nA	
Drain-source on-state resistance	RDS(on)	Id= -3.5A VGS= -4V	260	350	mΩ	
		VGS= -10V	150	200	mΩ	
Forward transconductance	gfs	Id=3.5A VDS= -25V	2.5	5.0		S
Input capacitance	Ciss	VDS= -25V	550	830		pF
Output capacitance	Coss	VGS=0V	200	300		
Reverse transfer capacitance	Crss	f=1MHz	110	170		
Turn-on time	t <sub>on</sub> (on)	Vcc= -30V R <sub>G</sub> =10 Ω	10	15		ns
	t <sub>r</sub>	Id= -7A	20	30		
Turn-off time	t <sub>off</sub> (off)	VGS= -10V	60	90		
	t <sub>f</sub>		25	50		
Avalanche capability	Iav	L=100μH Tch=25°C	-7			A
Diode forward on-voltage	VSD	I=2xIdR VGS=0V Tch=25°C		-2.50	-3.8	V
Reverse recovery time	trr	I=IdR VGS=0V	110			ns
Reverse recovery charge	Qrr	-di/dt=100A/μs Tch=25°C		0.50		μC

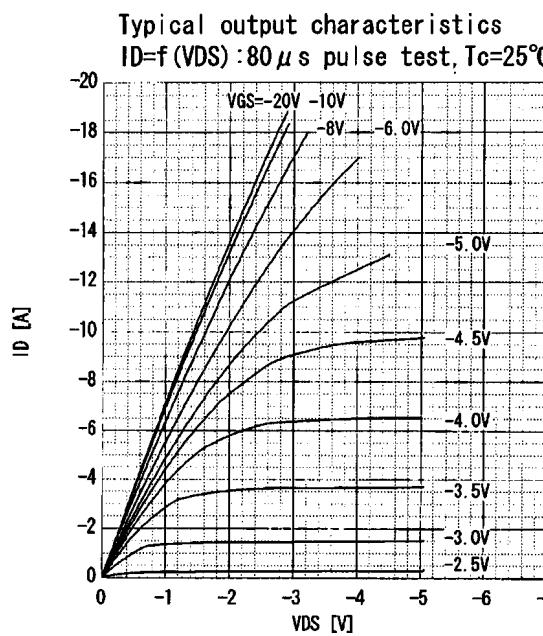
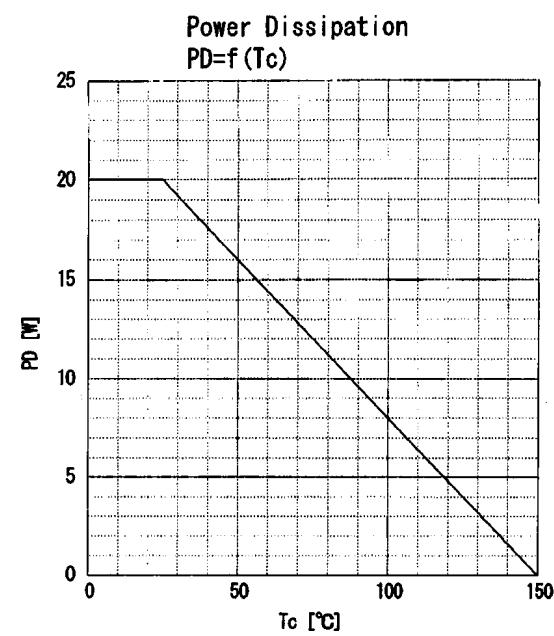
### ● Thermal characteristics

Item	Symbol	Min.	Typ.	Max.	Units
Thermal resistance	R <sub>th(ch-c)</sub>			6.25	°C/W
	R <sub>th(ch-a)</sub>			125.0	°C/W

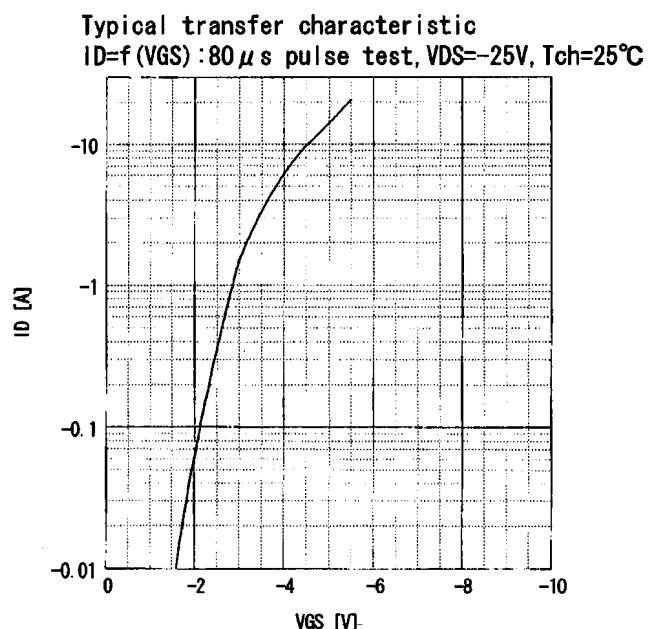
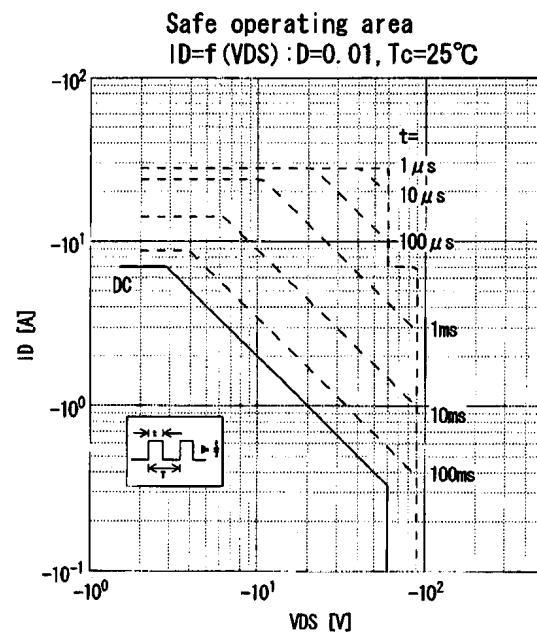
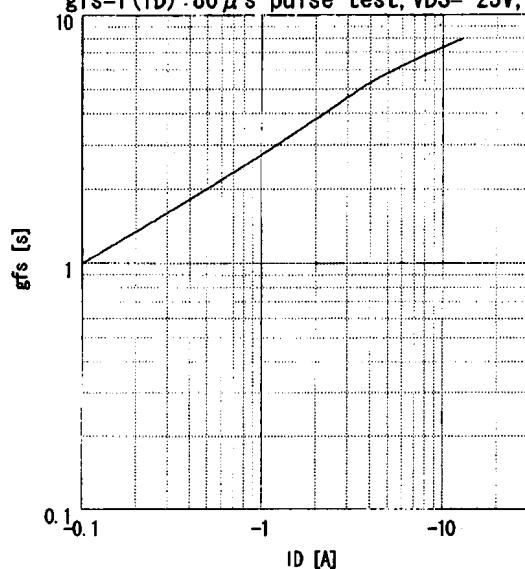
### ■ Equivalent circuit schematic



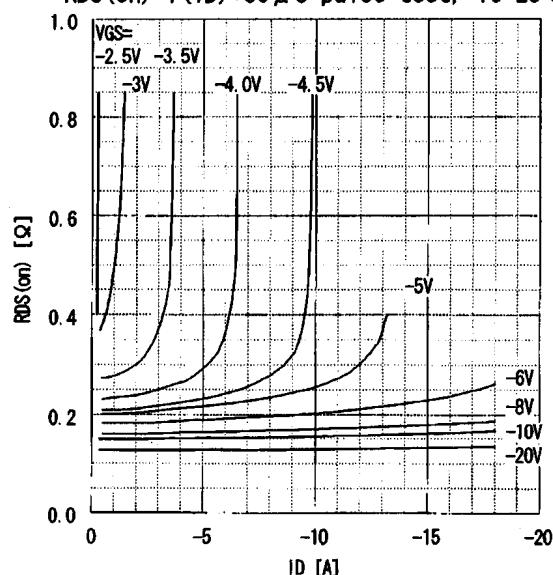
## ■ Characteristics

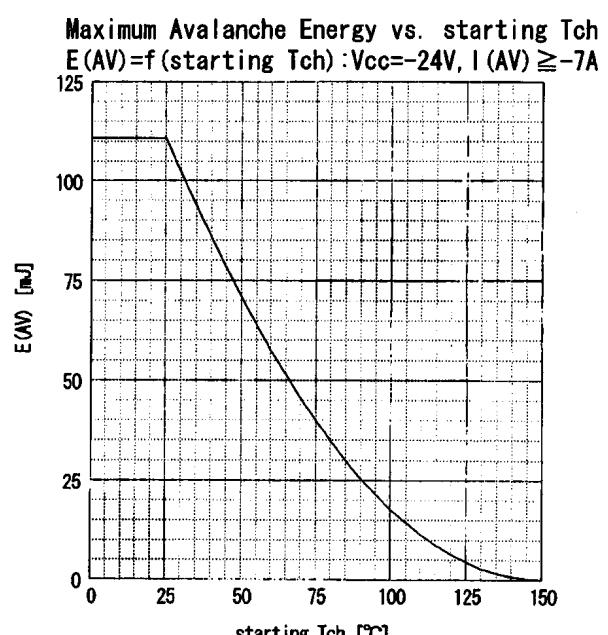
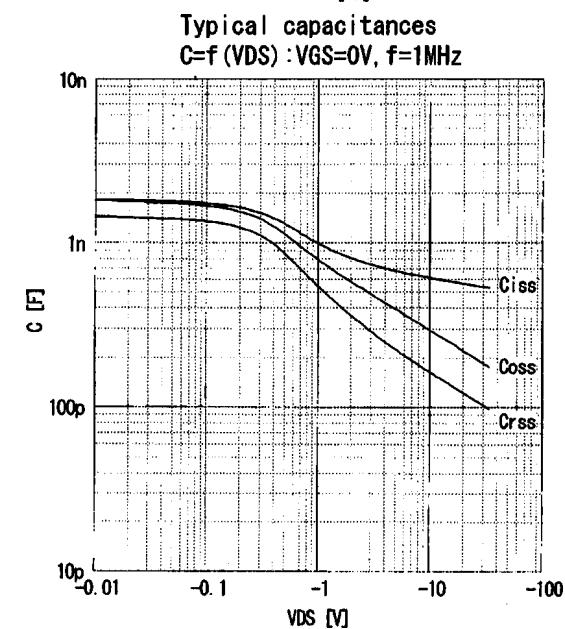
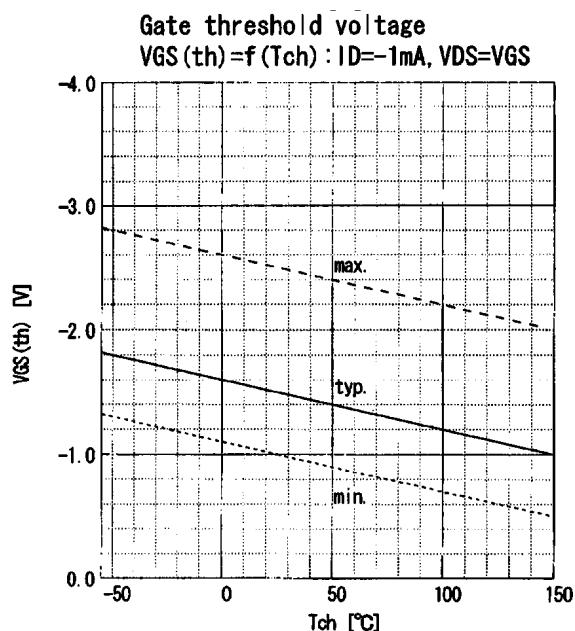
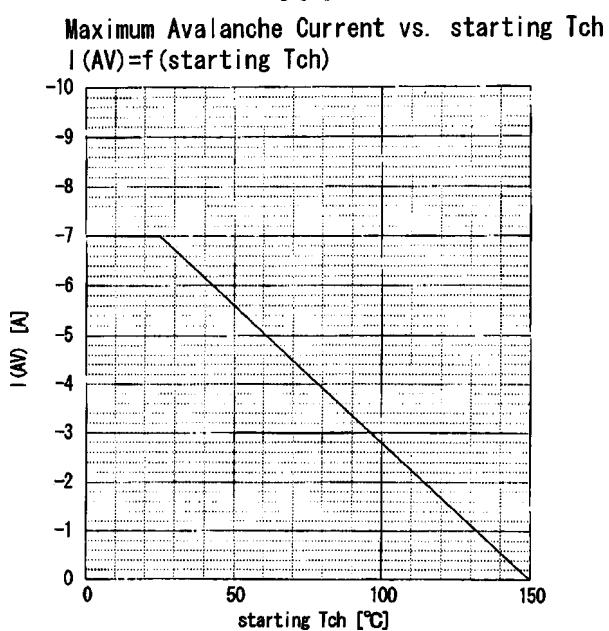
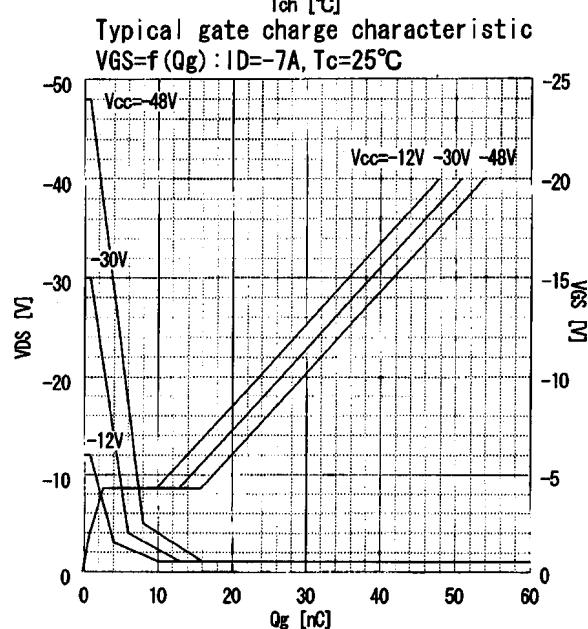
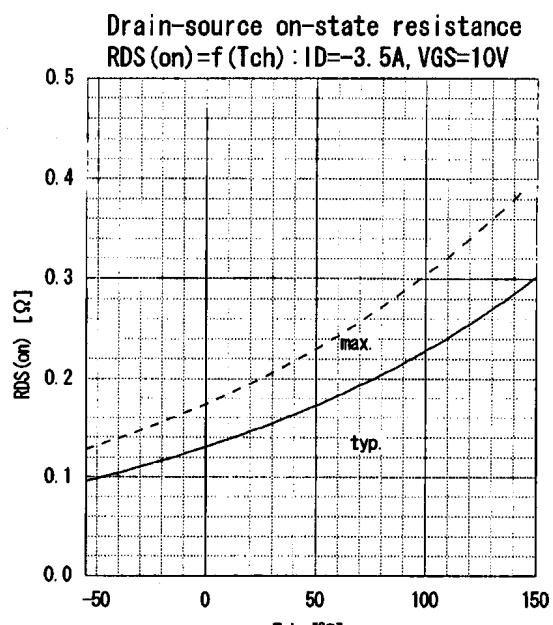


**Typical forward transconductance**  
 $g_{fs}=f(ID)$ : 80 μs pulse test,  $VDS=-25\text{V}$ ,  $T_{ch}=25^\circ\text{C}$

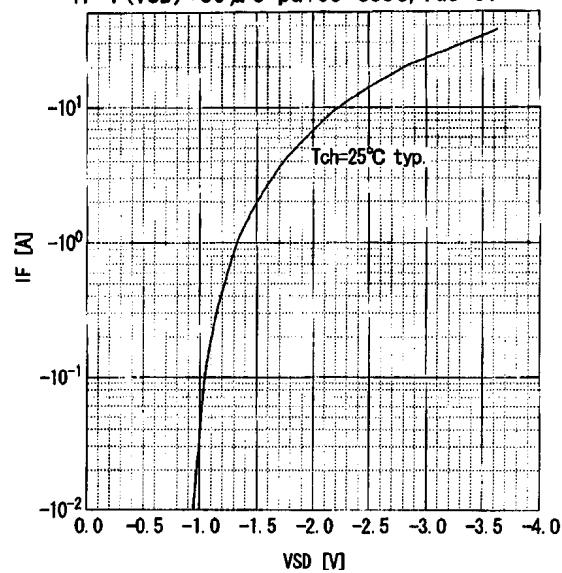


**Typical drain-source on-state resistance**  
 $R_{DS(on)}=f(ID)$ : 80 μs pulse test,  $T_c=25^\circ\text{C}$





Forward characteristic of reverse of diode  
IF=f(VSD) : 80  $\mu$ s pulse test, VGS=0V



Transient thermal impedance  
 $Z_{thch}=f(t)$  parameter:  $D=t/T$

