

2SK3526-01L,S,SJ

FUJI POWER MOSFET

N-CHANNEL SILICON POWER MOSFET

Super FAP-G 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

(Tc=25°C unless otherwise specified)

Item	Symbol	Ratings	Unit
Drain-source voltage	V _{DS}	600	V
Continuous drain current	I _D	±8	A
Pulsed drain current	I _{D(puls)}	±32	A
Gate-source voltage	V _{GS}	±30	V
Repetitive or non-repetitive	IAR *2	8	A
Maximum Avalanche Energy	EAS *1	145.6	mJ
Maximum Drain-Source dV/dt	dV _{DS} /dt *4	20	kV/μs
Peak Diode Recovery dV/dt	dV/dt *3	5	kV/μs
Max. power dissipation	P _D	T _a =25°C	1.67
		T _c =25°C	135
Operating and storage temperature range	T _{ch}	+150	°C
	T _{stg}	-55 to +150	°C

*1 L=4.2mH, V_{cc}=60V, See to Avalanche Energy Graph *2 T_{ch}≤150°C

*3 I_F≤-I_D, -di/dt=50A/μs, V_{cc}≤BV_{DSS}, T_{ch}≤150°C *4 V_{DS}≤600V

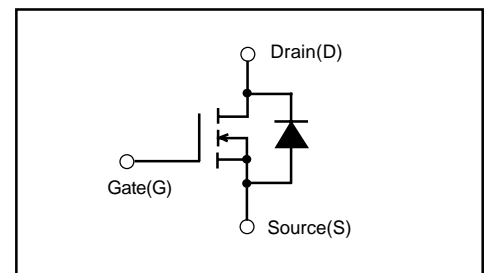
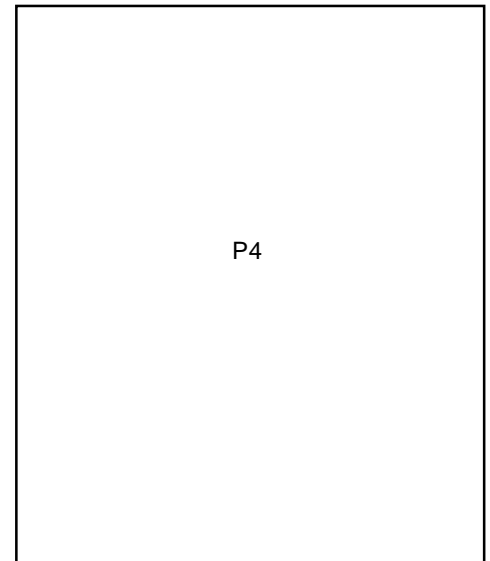
Electrical characteristics (Tc =25°C unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	V _{(BR)DSS}	I _D =250μA V _{GS} =0V	600			V
Gate threshold voltage	V _{GS(th)}	I _D =250μA V _{DS} =V _{GS}	3.0		5.0	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =600V V _{GS} =0V			25	μA
		V _{DS} =480V V _{GS} =0V			250	
Gate-source leakage current	I _{GSS}	V _{GS} =±30V V _{DS} =0V		10	100	nA
Drain-source on-state resistance	R _{DS(on)}	I _D =3A V _{GS} =10V		0.93	1.20	Ω
Forward transconductance	g _{fs}	I _D =3A V _{DS} =25V	3	6		S
Input capacitance	C _{iss}	V _{DS} =25V		750	1130	pF
Output capacitance	C _{oss}	V _{GS} =0V		100	150	
Reverse transfer capacitance	C _{rss}	f=1MHz		4.0	6.0	
Turn-on time t _{on}	td(on)	V _{CC} =300V I _D =3A		14	21	ns
	t _r	V _{GS} =10V		9	14	
Turn-off time t _{off}	td(off)	R _{GS} =10Ω		24	36	
	t _f			7	10.5	
Total Gate Charge	Q _G	V _{CC} =300V		20	30	nC
Gate-Source Charge	Q _{GS}	I _D =6A		8.5	13	
Gate-Drain Charge	Q _{GD}	V _{GS} =10V		5.5	8.5	
Avalanche capability	I _{AV}	L=4.2mH T _{ch} =25°C	8			A
Diode forward on-voltage	V _{SD}	I _F =6A V _{GS} =0V T _{ch} =25°C		1.00	1.50	V
Reverse recovery time	t _{rr}	I _F =6A V _{GS} =0V		0.7		μs
Reverse recovery charge	Q _{rr}	-di/dt=100A/μs T _{ch} =25°C		3.5		μC

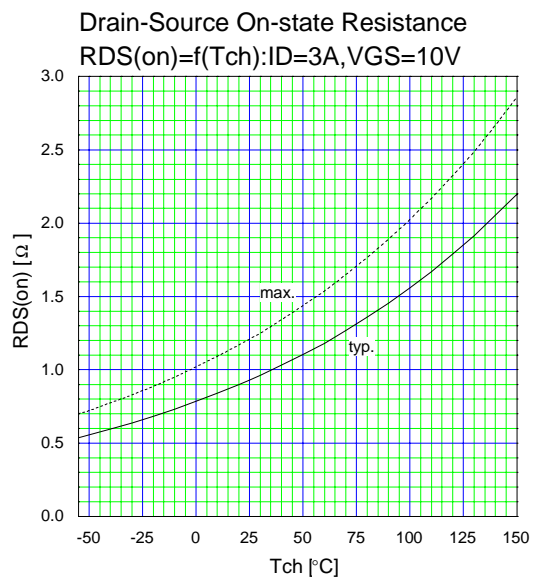
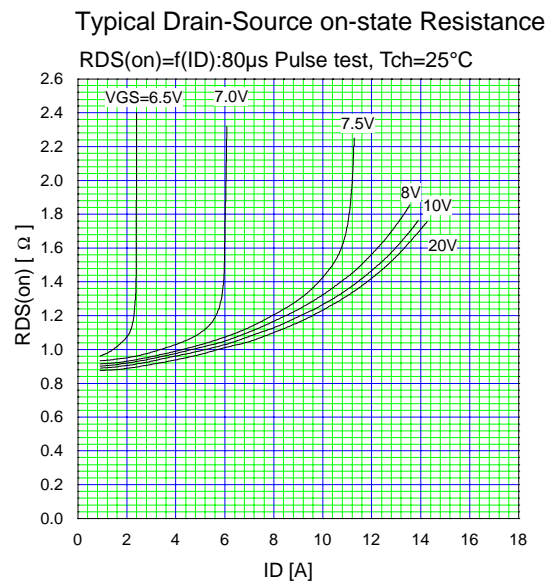
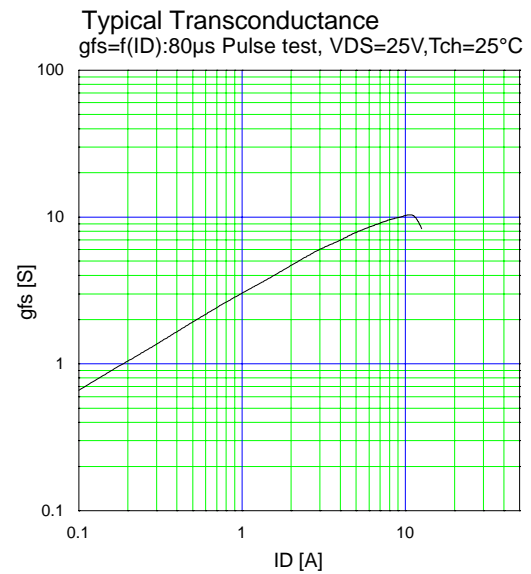
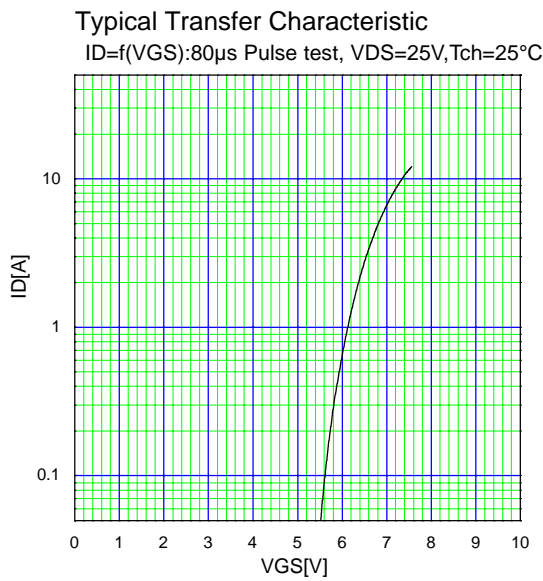
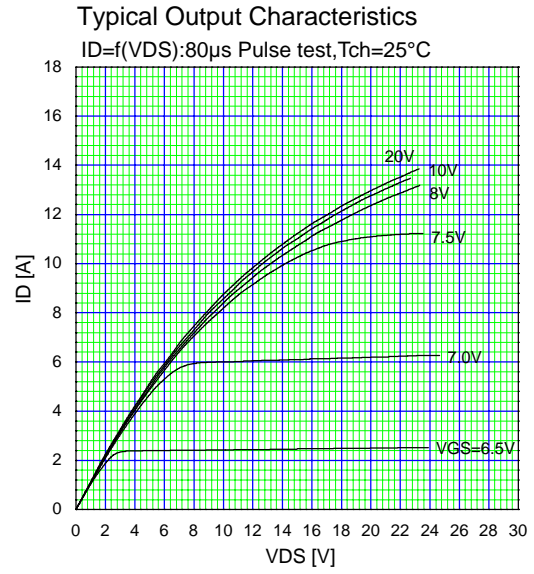
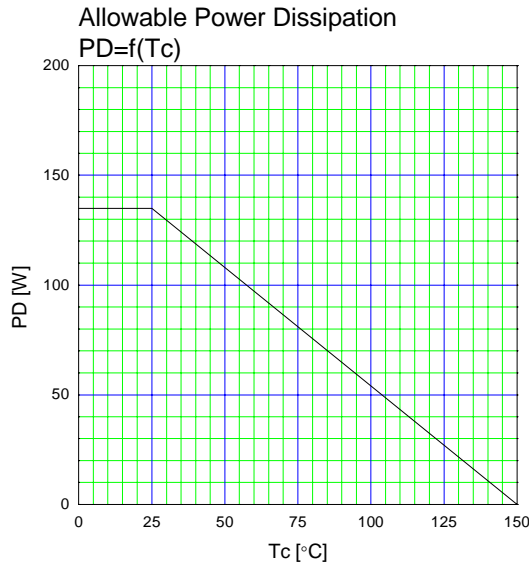
Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R _{th(ch-c)}	channel to case			0.926	°C/W
	R _{th(ch-a)}	channel to ambient			75.0	°C/W

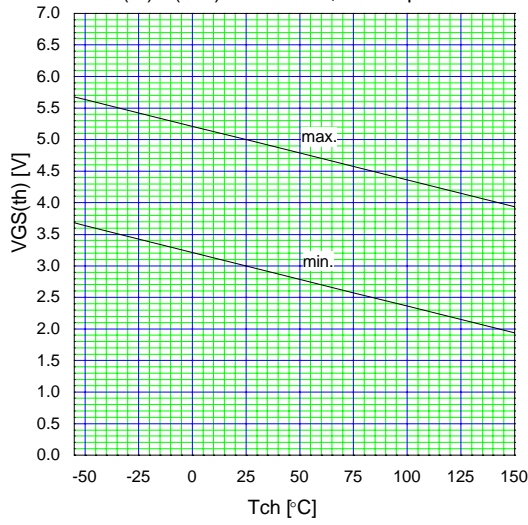
Outline Drawings [mm]



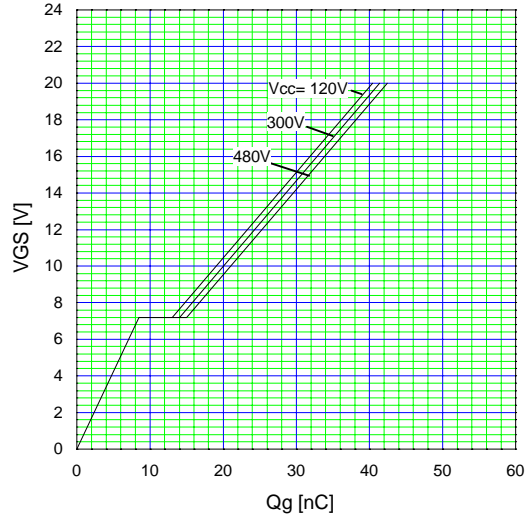
Characteristics



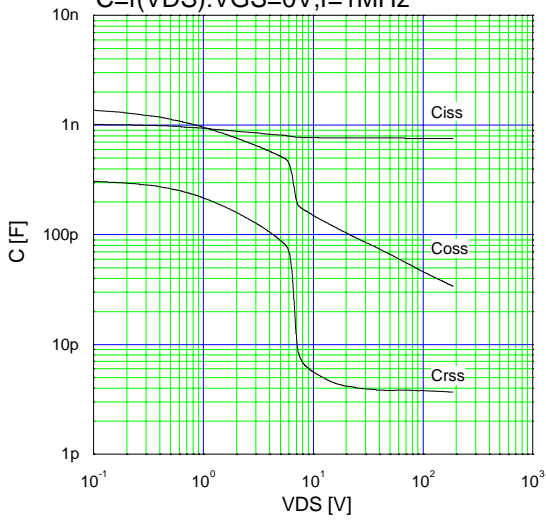
Gate Threshold Voltage vs. T_{ch}
 $V_{GS(th)} = f(T_{ch}) : V_{DS} = V_{GS}, I_D = 250\mu A$



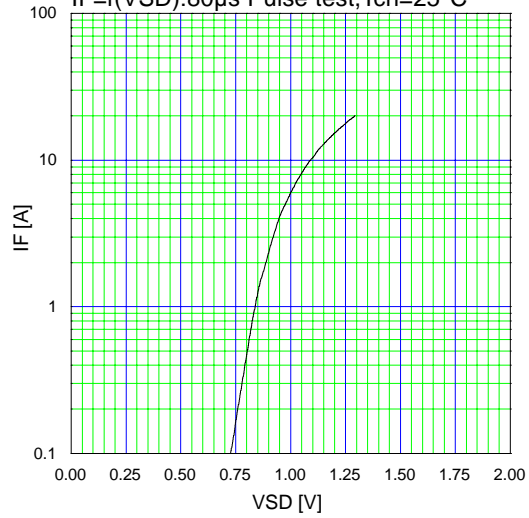
Typical Gate Charge Characteristics
 $V_{GS} = f(Q_g) : I_D = 3A, T_{ch} = 25^\circ C$



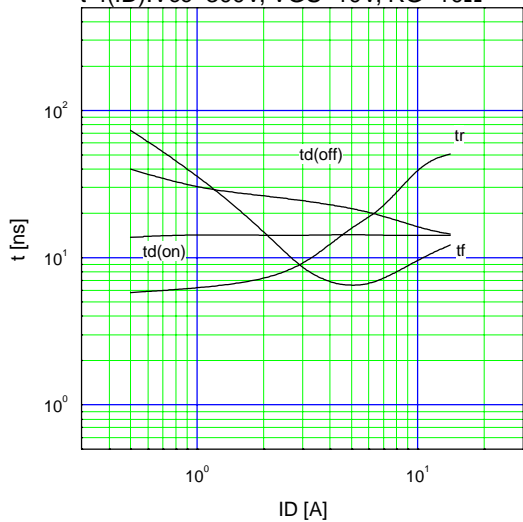
Typical Capacitance
 $C = f(V_{DS}) : V_{GS} = 0V, f = 1MHz$



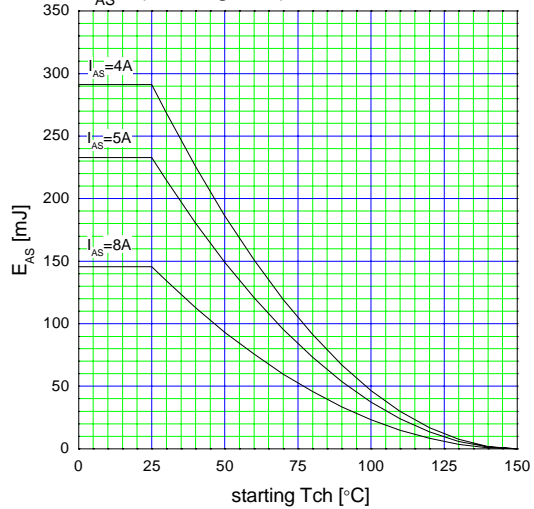
Typical Forward Characteristics of Reverse Diode
 $I_F = f(V_{SD}) : 80\mu s \text{ Pulse test}, T_{ch} = 25^\circ C$

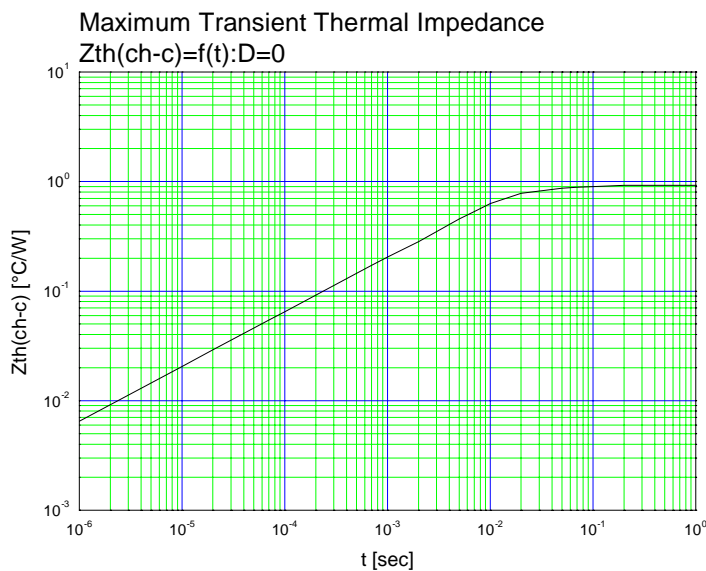
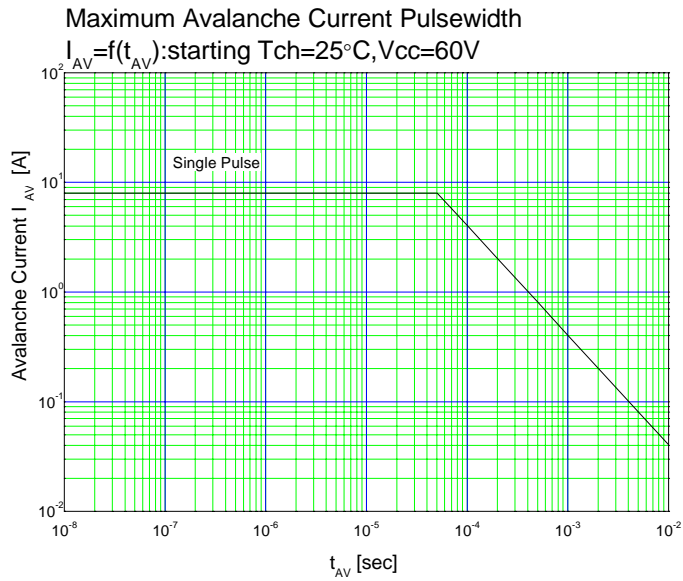


Typical Switching Characteristics vs. I_D
 $t = f(I_D) : V_{cc} = 300V, V_{GS} = 10V, R_G = 10\Omega$



Maximum Avalanche Energy vs. starting T_{ch}
 $E_{AS} = f(\text{starting } T_{ch}) : V_{cc} = 60V$





Outline Drawings (mm)

