

2SK3550-01R

FUJI
ELECTRIC

200304

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}	900	V
	V _{DSX} *5	900	V
Continuous drain current	I _D	±10	A
Pulsed drain current	I _D (puls)	±40	A
Gate-source voltage	V _{GS}	±30	V
Repetitive or non-repetitive	I _{AR} *2	10	A
Maximum Avalanche Energy	E _{AS} *1	330	mJ
Maximum Drain-Source dV/dt	dV _{DS} /dt *4	40	kV/μs
Peak Diode Recovery dV/dt	dV _{GS} /dt *3	5	kV/μs
Max. power dissipation	P _D / T _a =25°C	3.13	W
	T _c =25°C	130	W
Operating and storage temperature range	T _{ch}	+150	°C
	T _{stg}	-55 to +150	°C
Isolation Voltage	V _{ISO} *6	12	kVrms

*1 L=6.06mH, V_{CC}=90V, T_{ch}=25°C, 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}≤900V *5 V_{GS}=-30V *6 t=60sec, f=60Hz

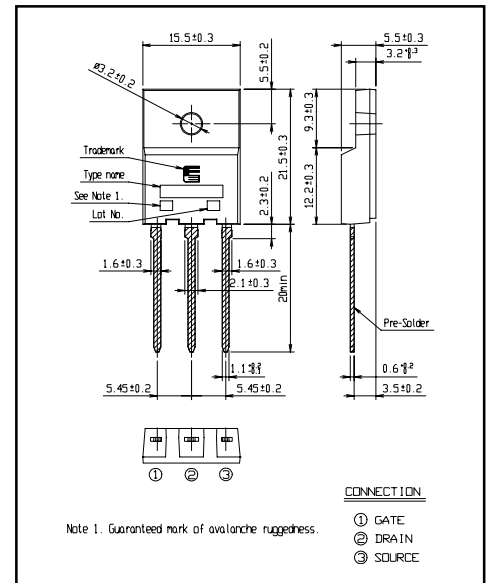
● Electrical characteristics (T_c=25°C unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	V _{(BR)DSS}	I _D =250μA V _{GS} =0V	900			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} =900V V _{GS} =0V			25	μA
		V _{DS} =720V V _{GS} =0V			250	μA
Gate-source leakage current	I _{GSS}	V _{GS} =±30V V _{DS} =0V			100	nA
Drain-source on-state resistance	R _{DS(on)}	I _D =5A V _{GS} =10V		1.08	1.40	Ω
Forward transconductance	g _{fs}	I _D =5A V _{DS} =25V	6	12		S
Input capacitance	C _{iss}	V _{DS} =25V		1250	1900	pF
Output capacitance	C _{oss}	V _{GS} =0V		160	240	pF
Reverse transfer capacitance	C _{rss}	f=1MHz		12	18	pF
Turn-on time t _{on}	td(on)	V _{CC} =600V I _D =5A		26	39	ns
	t _r	V _{GS} =10V		23	35	ns
Turn-off time t _{off}	td(off)	R _{GS} =10Ω		60	90	ns
	t _f			17	26	ns
Total Gate Charge	Q _G	V _{CC} =450V		34.5	52	nC
Gate-Source Charge	Q _{GS}	I _D =10A		5	7.5	nC
Gate-Drain Charge	Q _{GD}	V _{GS} =10V		12	18	nC
Avalanche capability	I _{AV}	L=6.06mH T _{ch} =25°C	10			A
Diode forward on-voltage	V _{SD}	I _F =10A V _{GS} =0V T _{ch} =25°C		0.90	1.50	V
Reverse recovery time	t _{rr}	I _F =10A V _{GS} =0V		3.1		μs
Reverse recovery charge	Q _{rr}	-di/dt=100A/μs T _{ch} =25°C		17.0		μC

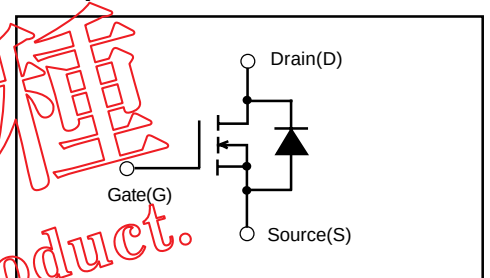
● Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R _{th(ch-c)}	channel to case			0.962	°C/W
	R _{th(ch-a)}	channel to ambient			40.0	°C/W

■ Outline Drawings [mm]

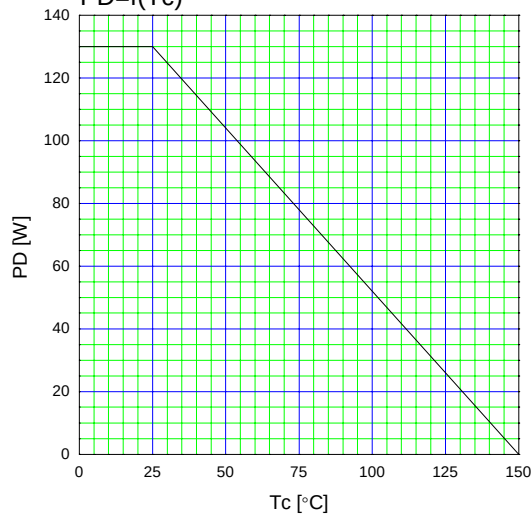


■ Equivalent circuit schematic

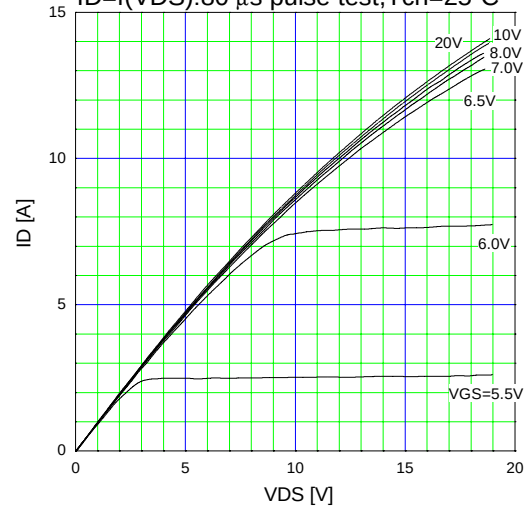


Characteristics

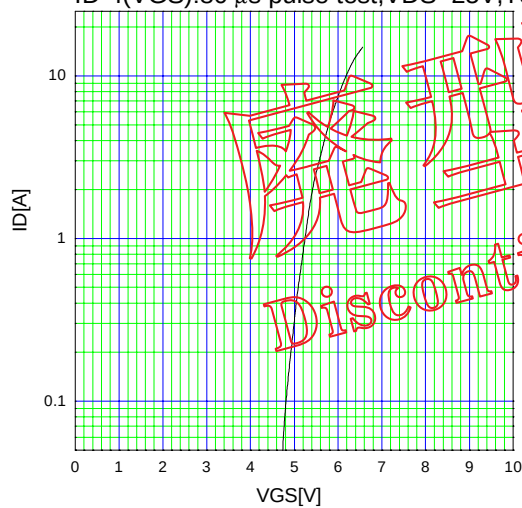
Allowable Power Dissipation
 $PD=f(T_c)$



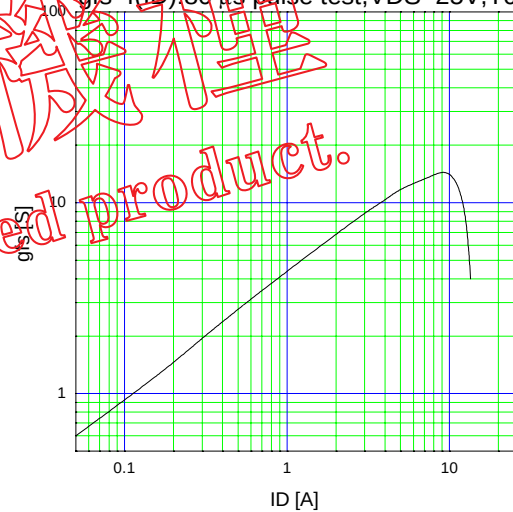
Typical Output Characteristics
 $ID=f(V_{DS})$: 80 μ s pulse test, $T_{ch}=25^\circ\text{C}$



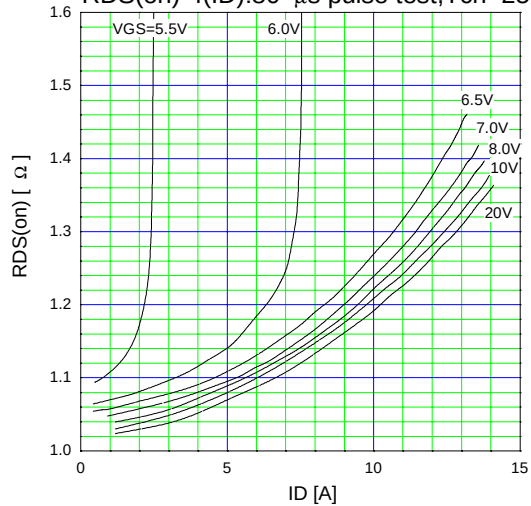
Typical Transfer Characteristic
 $ID=f(V_{GS})$: 80 μ s pulse test, $V_{DS}=25\text{V}$, $T_{ch}=25^\circ\text{C}$



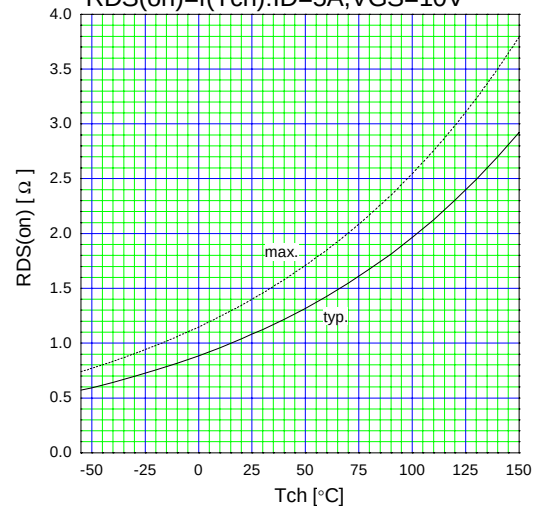
Typical Transconductance
 $g_{fs}=f(ID)$: 80 μ s pulse test, $V_{DS}=25\text{V}$, $T_{ch}=25^\circ\text{C}$

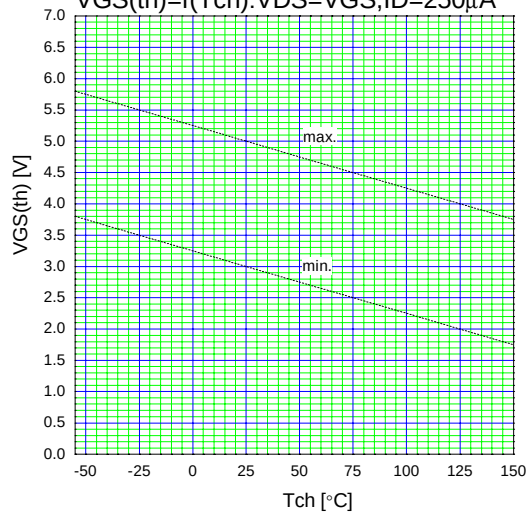


Typical Drain-Source on-state Resistance
 $R_{DS(on)}=f(ID)$: 80 μ s pulse test, $T_{ch}=25^\circ\text{C}$

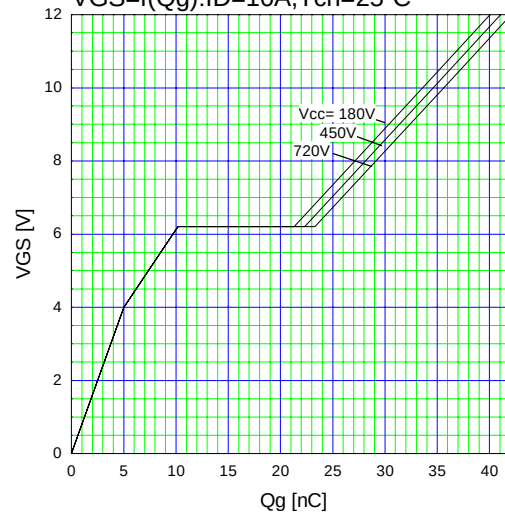


Drain-Source On-state Resistance
 $R_{DS(on)}=f(T_{ch})$: $ID=5\text{A}$, $V_{GS}=10\text{V}$

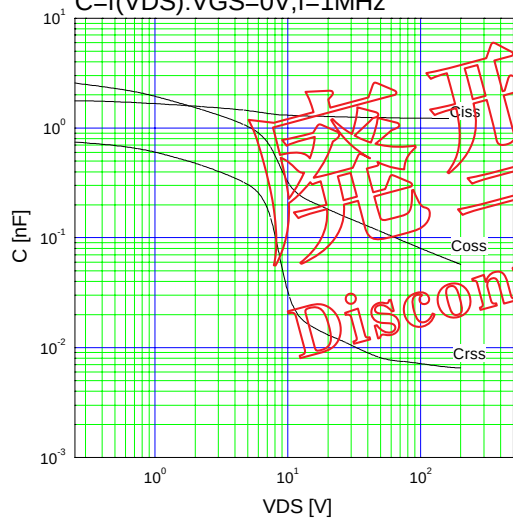


Gate Threshold Voltage vs. T_{ch}V_{GS(th)}=f(T_{ch}):V_{DS}=V_{GS},I_D=250μA

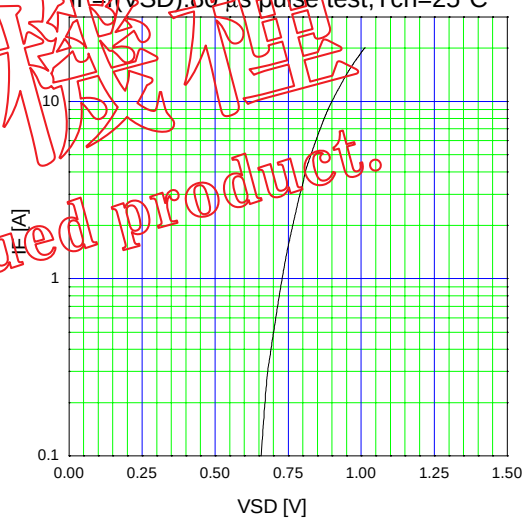
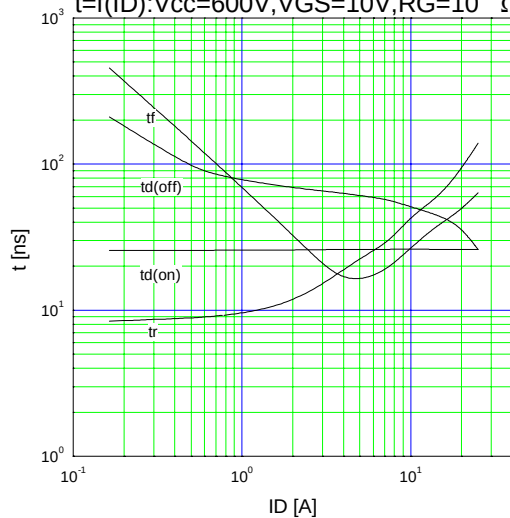
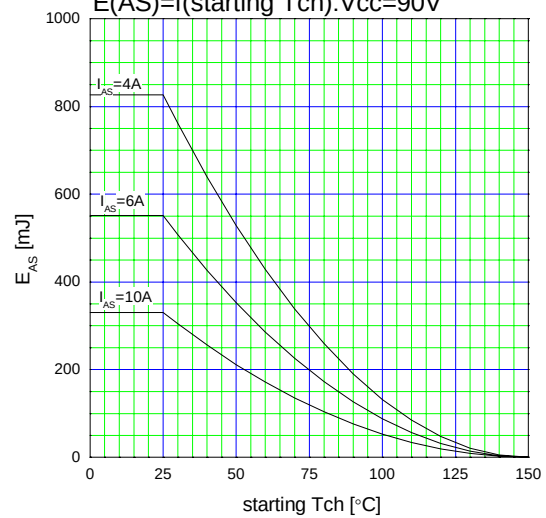
Typical Gate Charge Characteristics

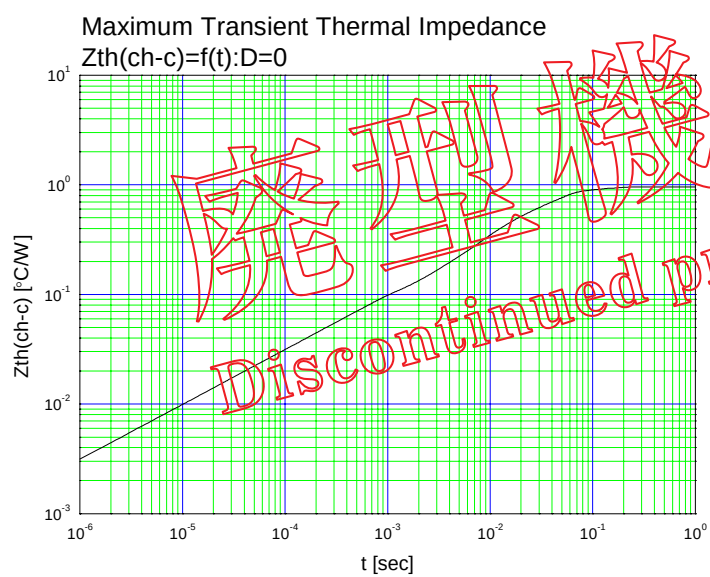
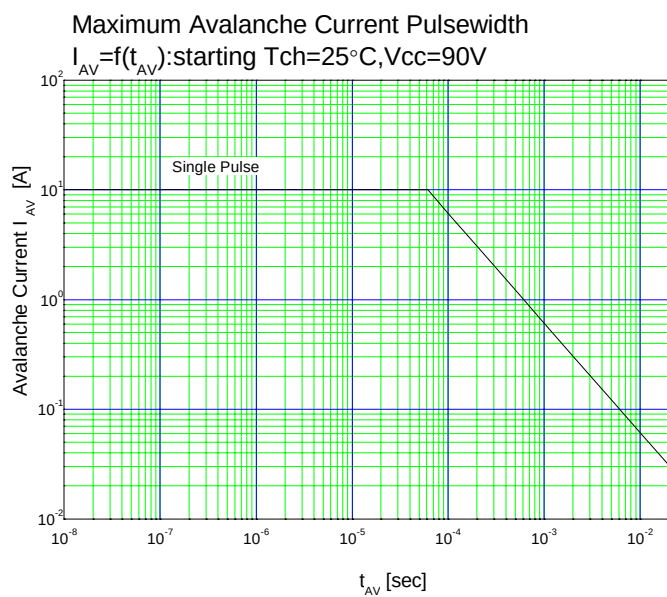
V_{GS}=f(Q_g):I_D=10A,T_{ch}=25°C

Typical Capacitance

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

Typical Forward Characteristics of Reverse Diode

I_F=f(V_{SD}):30 μs pulse test,T_{ch}=25°CTypical Switching Characteristics vs. I_Dt=f(I_D):V_{CC}=600V,V_{GS}=10V,R_G=10 ΩMaximum Avalanche Energy vs. starting T_{ch}E_(AS)=f(starting T_{ch}):V_{CC}=90V



廢型機種
Discontinued product.