

N-CHANNEL SILICON POWER MOSFET

FAP-2S 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 characteristicAbsolute maximum ratings

● (Tc=25°C unless otherwise specified)

Item	Symbol	Ratings	Unit
Drain-source voltage	V _{DS}	900	V
Continuous drain current	I _D	±8	A
Pulsed drain current	I _D (puls)	±32	A
Gate-source voltage	V _{GS}	±35	V
Repetitive or non-repetitive	IAR*2	8	A
Maximum Avalanche Energy	EAS*1	141	mJ
Max. power dissipation	P _D	100	W
Operating and storage temperature range	T _{ch} T _{stg}	+150 -55 to +150	°C °C

*1 $L=4.10\text{mH}$, $V_{CC}=90\text{V}$ *2 $T_{ch} \leq 150^\circ\text{C}$

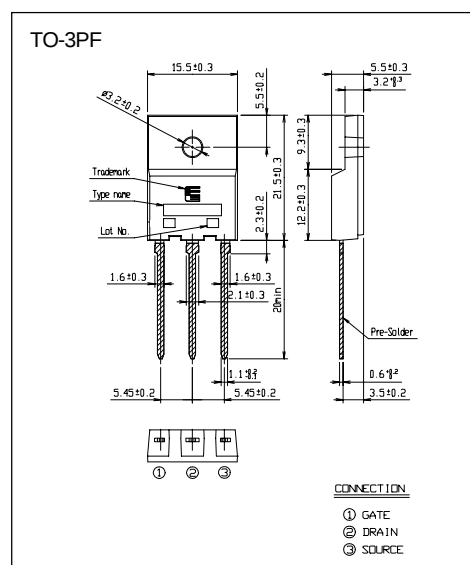
● **Electrical characteristics (T_c =25°C unless otherwise specified)**

Item	Symbol	Test Conditions		Min.	Typ.	Max.	Units
Drain-source breakdown voltage	V(BR)DSS	Id=1mA VGS=0V		900			V
Gate threshold voltage	VGS(th)	Id=1mA VDS=VGS		3.5	4.0	4.5	V
Zero gate voltage drain current	IDSS	VDS=900V	Tch=25°C		10	500	μA
		VGS=0V	Tch=125°C		0.2	1.0	mA
Gate-source leakage current	IGSS	VGS=±35V VDS=0V			10	100	nA
Drain-source on-state resistance	RDS(on)	Id=4.0A VGS=10V			1.48	2.00	Ω
Forward transconductance	gfs	Id=4.0A VDS=25V		2.5	5.0		S
Input capacitance	Ciss	VDS=25V			1200	1800	pF
Output capacitance	Coss	VGS=0V			180	270	
Reverse transfer capacitance	Crss	f=1MHz			90	140	
Turn-on time ton	td(on)	VCC=600V Id=8A			30	50	ns
	tr	VGS=10V			100	150	
Turn-off time toff	td(off)	RGS=10 Ω			100	150	
	tf				65	100	
Avalanche capability	Iav	L=100 μH Tch=25°C		8			A
Diode forward on-voltage	VSD	If=2XIDR VGS=0V Tch=25°C			1.0	1.5	V
Reverse recovery time	trr	If=IDR VGS=0V			950		ns
Reverse recovery charge	Qrr	-di/dt=100A/μs Tch=25°C			12		μC

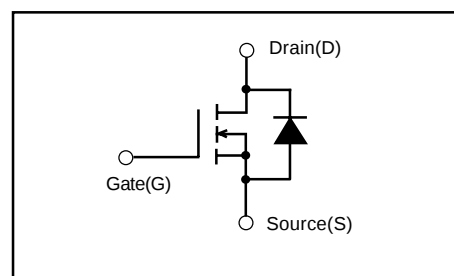
● Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R _{th(ch-c)}	channel to case			1.25	°C/W
	R _{th(ch-a)}	channel to ambient			30.0	°C/W

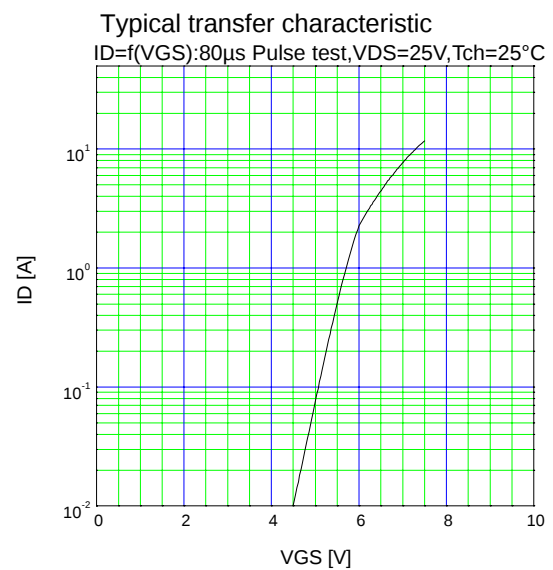
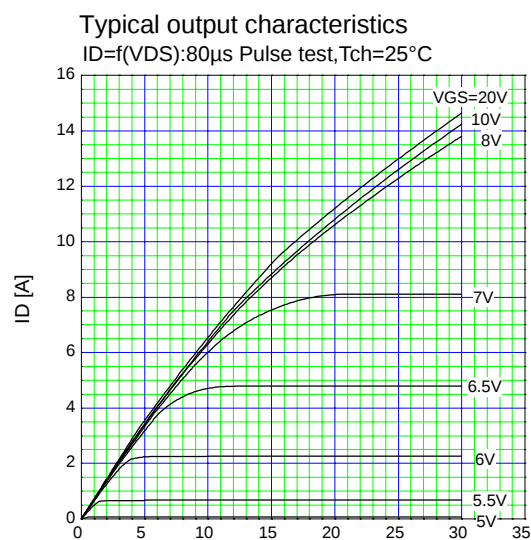
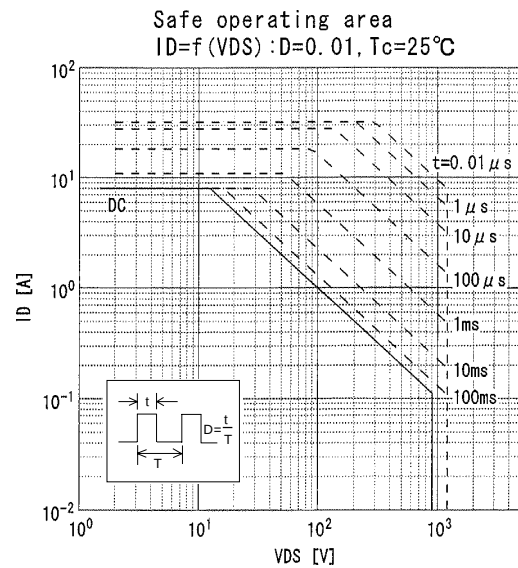
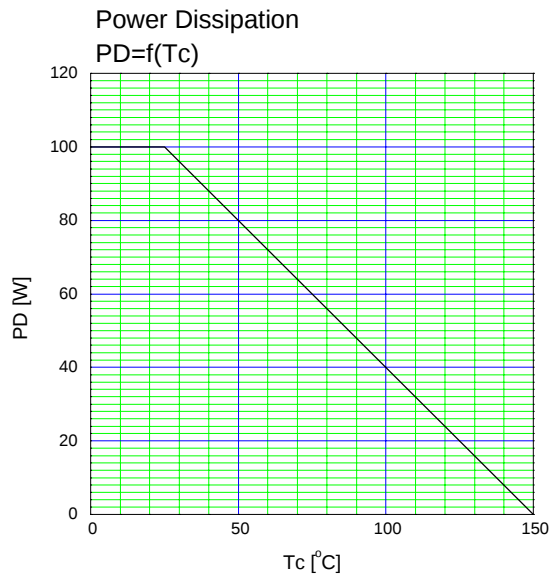
■ Outline Drawings



■ Equivalent circuit schematic



Characteristics



$g_{fs}=f(ID): 80\ \mu\text{s}$ Pulse test, $V_{DS}=25\text{V}, T_{ch}=25^\circ\text{C}$ V_{DS} [V]

