

FAP-III B Series

N-CHANNEL SILICON POWER MOSFET

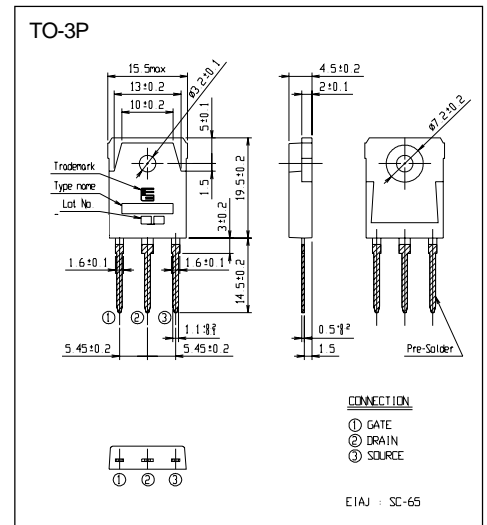
Features

- High speed switching
- Low on-resistance
- No secondary breakdown
- Low driving power

Applications

- Switching regulators
- UPS (Uninterruptible Power Supply)
- DC-DC converters

Outline Drawings [mm]



Maximum ratings and characteristic Absolute maximum ratings

(T_c=25°C unless otherwise specified)

Item	Symbol	Ratings	Unit
Drain-source voltage	V _{DS}	60	V
Continuous drain current	I _D	±80	A
Pulsed drain current	I _{Dp}	±320	A
Gate-source voltage	V _{GS}	±20	V
Maximum avalanche energy	E _{AV} *1	599	mJ
Maximum power dissipation	P _D	125	W
Operating and storage	T _{ch}	+150	°C
Temperature range	T _{stg}	-55 to +150	°C

*1 L=0.125mH, V_{CC}=24V

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

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	BV _{DSS}	I _D =1mA V _{GS} =0V	60			V
Gate threshold voltage	V _{GS(th)}	I _D =1mA V _{DS} =V _{GS}	1.0	1.5	2.0	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =60V V _{GS} =0V	T _{ch} =25°C	10	500	μA
			T _{ch} =125°C		0.2	1.0
Gate-source leakage current	I _{GSS}	V _{GS} =±20V V _{DS} =0V		10	100	nA
Drain-source on-state resistance	R _{DS(on)}	I _D =40A	V _{GS} =4V	12	17	mΩ
			V _{GS} =10V		7.5	10
Forward transconductance	g _{fs}	I _D =40A V _{DS} =25V	25.0	55.0		S
Input capacitance	C _{iss}	V _{DS} =25V		3500	5250	pF
Output capacitance	C _{oss}	V _{GS} =0V		1250	1870	
Reverse transfer capacitance	C _{rss}	f=1MHz		360	540	
Turn-on time t _{on}	td(on)	V _{CC} =30V I _D =75A		15	23	ns
	t _r			75	120	
	td(off)		V _{GS} =10V		190	
Turn-off time t _{off}	td(off)	R _{GS} =10Ω		110	165	
	t _r					
Avalanche capability	I _{AV}	L=100μH T _{ch} =25°C	80			A
Diode forward on-voltage	V _{SD}	I _F =160A V _{GS} =0V T _{ch} =25°C		1.15	1.65	V
Reverse recovery time	t _{rr}	I _F =80A V _{GS} =0V		75	120	ns
Reverse recovery charge	Q _{rr}	-di/dt=100A/μs T _{ch} =25°C		0.17		μC

Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R _{th(ch-c)}	channel to case			1.00	°C/W
	R _{th(ch-a)}	channel to ambient			35.0	°C/W

Characteristics

