SPTECH Silicon NPN Power Transistor

DESCRIPTION

- With TO-220F package
- High h_{FE} and low $V_{CE(sat)}$

APPLICATIONS

- For high-speed switching
- For use in drivers such as DC-DC converters and actuators.

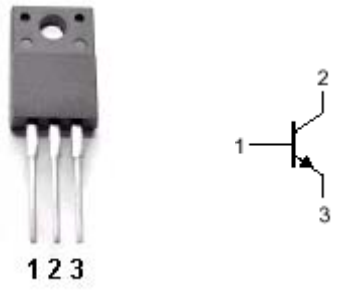


Fig.1 simplified outline (TO-220F) and symbol

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

Absolute maximum ratings (Ta=25℃)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	100	V
V_{CEO}	Collector-emitter voltage	Open base	60	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current		15	A
I_{CM}	Collector current-peak		30	A
I_B	Base current		7.5	A
P_T	Total power dissipation	T_C=25℃	30	W
		Ta=25℃	2	
T_j	Junction temperature		150	℃
T_{stg}	Storage temperature		-55~150	℃

SPTECH Silicon NPN Power Transistor

CHARACTERISTICS

Tj=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-emitter sustaining voltage	I_C=8A; I_B=0.8A;L=1mH	60			V
$V_{CE(sat)1}$	Collector-emitter saturation voltage	I_C=8A ; I_B=0.4A			0.8	V
$V_{BE(sat)1}$	Base-emitter saturation voltage	I_C=8A ; I_B=0.4A			1.8	V
I_{CBO}	Collector cut-off current	V_{CB}=60V;I_E=0			10	μA
I_{CER}	Collector cut-off current	V_{CB}=60V;R_{BE}=50Ω;Ta=125°C			1.0	mA
I_{CEX1}	Collector cut-off current	V_{CB}=60V; V_{BE}=-1.5V			10	μA
I_{CEX2}	Collector cut-off current	V_{CB}=60V; V_{BE}=-1.5V;Ta=125°C			1.0	mA
I_{EBO}	Emitter cut-off current	V_{EB}=5V;I_C=0			10	μA
h_{FE-1}	DC current gain	I_C=1.5A ; V_{CE}=2V	100			
h_{FE-2}	DC current gain	I_C=3.0A ; V_{CE}=2V	100		400	
h_{FE-3}	DC current gain	I_C=8.0A ; V_{CE}=2V	60			
Cob	Collector capacitance	V_{CB}=10V;I_E=0;f=1.0MHz		180		pF
f_T	Transition frequency	I_C=1.5A ; V_{CE}=10V		120		MHz

Switching times

t_{on}	Turn-on time	I_C=8.0A; I_{B1}=-I_{B2}=0.4A V_{CC}=50V ,R_L=6.3Ω			0.3	μs
t_s	Storage time				1.5	μs
t_f	Fall time				0.3	μs

◆ **h_{FE-2} Classifications**

M	L	K
100-120	150-300	200-400