

Silicon NPN Power Transistors

MJF18004

DESCRIPTION

- With TO-220F package
- High voltage ,high speed

APPLICATIONS

- Designed for use in 220V line-operated switchmode power supplies and electronic light ballasts

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

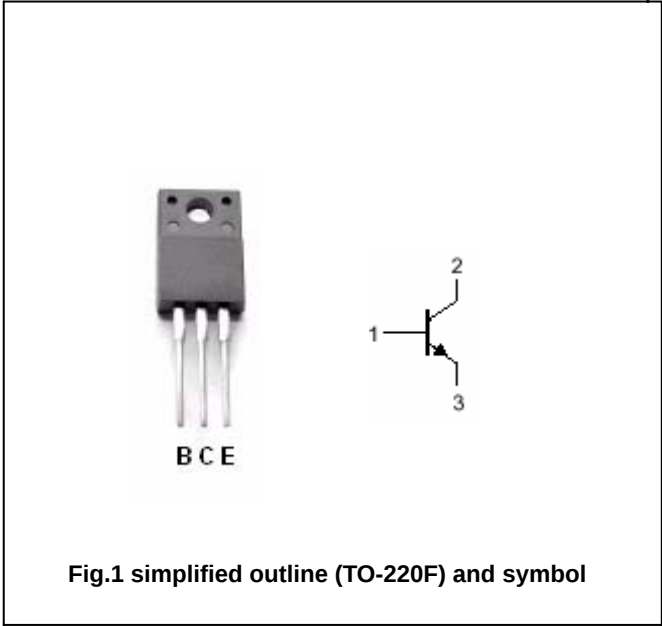


Fig.1 simplified outline (TO-220F) and symbol

Absolute maximum ratings(Tc=25)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	Open emitter	1000	V
V _{CEO}	Collector-emitter voltage	Open base	450	V
V _{EBO}	Emitter-base voltage	Open collector	9	V
I _C	Collector current (DC)		5	A
I _{CM}	Collector current-Peak		10	A
I _B	Base current		2	A
I _{BM}	Base current-Peak		4	A
P _D	Total power dissipation	T _C =25	40	W
T _j	Junction temperature		150	
T _{stg}	Storage temperature		-65~150	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-C}	Thermal resistance junction to case	3.12	/W
R _{th j-A}	Thermal resistance junction to ambient	62.5	/W

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CHARACTERISTICS

Tj=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS		MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-emitter sustaining voltage	I _C =0.1A; L=25mH		450			V
V _{CESat-1}	Collector-emitter saturation voltage	I _C =1A ;I _B =0.1A T _C =125				0.5 0.6	V
V _{CESat-2}	Collector-emitter saturation voltage	I _C =2A ;I _B =0.4A T _C =125				0.45 0.8	V
V _{CESat-3}	Collector-emitter saturation voltage	I _C =2.5A ;I _B =0.5A				0.75	V
V _{BESat-1}	Base-emitter saturation voltage	I _C =1A ;I _B =0.1A				1.1	V
V _{BESat-2}	Base-emitter saturation voltage	I _C =2A ;I _B =0.4A				1.25	V
V _{BESat-3}	Base-emitter saturation voltage	I _C =2.5A ;I _B =0.5A				1.3	V
I _{CES}	Collector cut-off current	V _{CES} =RatedV _{CES} ; V _{EB} =0	T _C =125			0.1	mA
		0.5					
		V _{CES} =800V				0.1	
I _{CEO}	Collector cut-off current	V _{CE} =RatedV _{CEO} ; I _B =0				0.1	mA
I _{EBO}	Emitter cut-off current	V _{EB} =9V; I _C =0				0.1	mA
h _{FE-1}	DC current gain	I _C =1A ; V _{CE} =2.5V		12			
h _{FE-2}	DC current gain	I _C =1A ; V _{CE} =5V		14		36	
h _{FE-3}	DC current gain	I _C =2A ; V _{CE} =1V		6			
h _{FE-4}	DC current gain	I _C =5mA ; V _{CE} =5V		10			
f _T	Transition frequency	I _C =0.5A ; V _{CE} =10V;f=1.0MHz			13		MHz
C _{OB}	Collector outoput capacitance	I _E =0 ; V _{CB} =10V;f=1.0MHz			45		pF

Switching times resistive load, Duty Cycle $\leq 10\%$, Pulse Width=20 μs

t_{on}	Turn-on time	$V_{CC}=250V$, $I_C=2.5A$ $I_{B1}=0.5A$; $I_{B2}=0.5A$			0.6	μs
t_s	Storage time				3.0	μs
t_f	Fall time				0.4	μs

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PACKAGE OUTLINE

