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

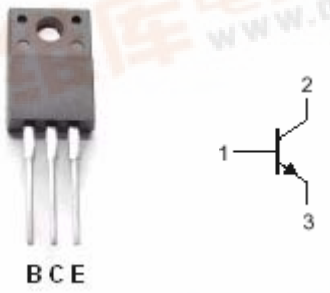

Fig.1 simplified outline (TO-220F) and symbol

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

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
$R_{th\ j\text{-}C}$	Thermal resistance junction to case	3.12	℃/W
$R_{th\ j\text{-}A}$	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}=Rated$V_{CES;}$ V_{EB}=0				0.1	mA
			T_C=125℃			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≤10%,Pulse Width=20μs

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

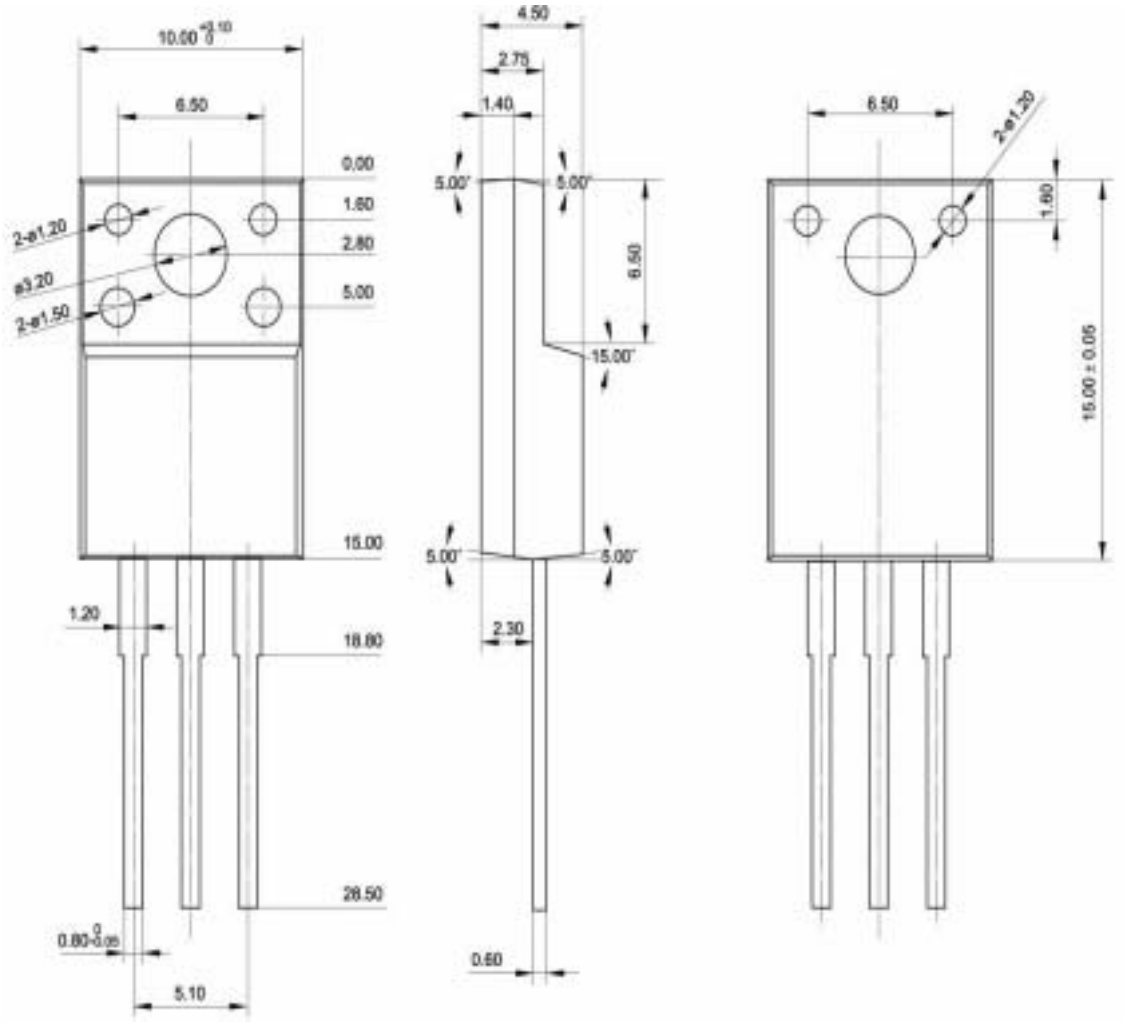

Fig.2 Outline dimensions