

Silicon NPN Power Transistors

MJF18008

DESCRIPTION

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- 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

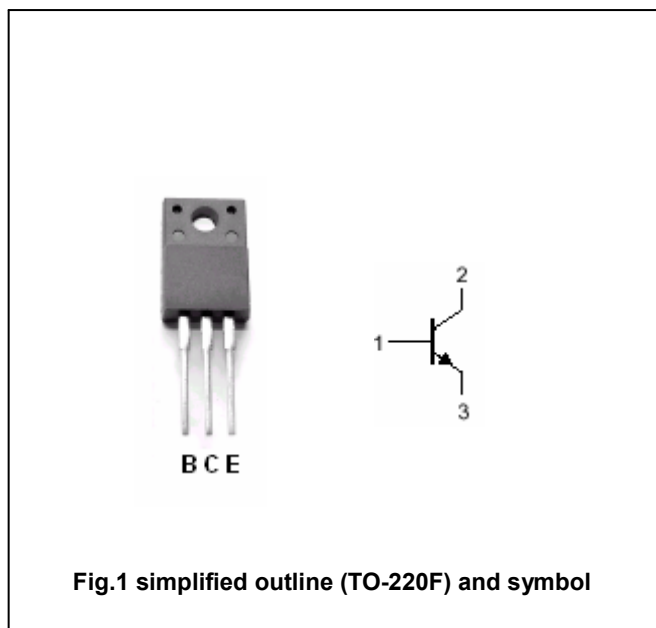


Fig.1 simplified outline (TO-220F) and symbol

ABSOLUTE MAXIMUM RATINGS($T_C=25^{\circ}\text{C}$)

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)		10	A
I_{CM}	Collector current-Peak		16	A
I_B	Base current		4	A
I_{BM}	Base current-Peak		8	A
P_D	Total power dissipation	$T_C=25^{\circ}\text{C}$	45	W
T_j	Junction temperature		150	$^{\circ}\text{C}$
T_{stg}	Storage temperature		-65~150	$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-C}$	Thermal resistance junction to case	2.78	$^{\circ}\text{C/W}$
$R_{th\ j-A}$	Thermal resistance junction to ambient	62.5	$^{\circ}\text{C/W}$

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CHARACTERISTICS

Tj=25°C unless otherwise specified

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SYMBOL	PARAMETER	CONDITIONS		MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-emitter sustaining voltage	I _C =0.1A; L=25mH		450			V
V _{CE(sat)-1}	Collector-emitter saturation voltage	I _C =2A; I _B =0.2A T _C =125□				0.6 0.65	V
V _{CE(sat)-2}	Collector-emitter saturation voltage	I _C =4.5A; I _B =0.9A T _C =125□				0.7 0.8	V
V _{BE(sat)-1}	Base-emitter saturation voltage	I _C =2A ;I _B =0.2A				1.10	V
V _{BE(sat)-2}	Base-emitter saturation voltage	I _C =4.5A; I _B =0.9A				1.25	V
I _{CES}	Collector cut-off current	V _{CES} =RatedV _{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} =5V		14		34	
h _{FE-2}	DC current gain	I _C =4.5A ; V _{CE} =1V		6			
h _{FE-3}	DC current gain	I _C =2A ; V _{CE} =1V		11			
h _{FE-4}	DC current gain	I _C =10mA ; V _{CE} =5V		10			
f _T	Transition frequency	I _C =0.5A ; V _{CE} =10V; f=1MHz			13		MHz
C _{OB}	Collector outoput capacitance	I _E =0; V _{CB} =10V; f=1MHz			100		pF

Switching times resistive load, Duty Cycle≤10%, Pulse Width=20μs

t _{on}	Turn-on time	V _{CC} =300V, I _C =2A I _{B1} =0.2A; I _{B2} =1.0A			0.3	μs
t _{off}	Turn-off time				2.5	μs
t _{on}	Turn-on time	V _{CC} =300V, I _C =4.5A I _{B1} =0.9A; I _{B2} =2.25A			0.18	μs
t _{off}	Turn-off time				2.5	μs

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PACKAGE OUTLINE

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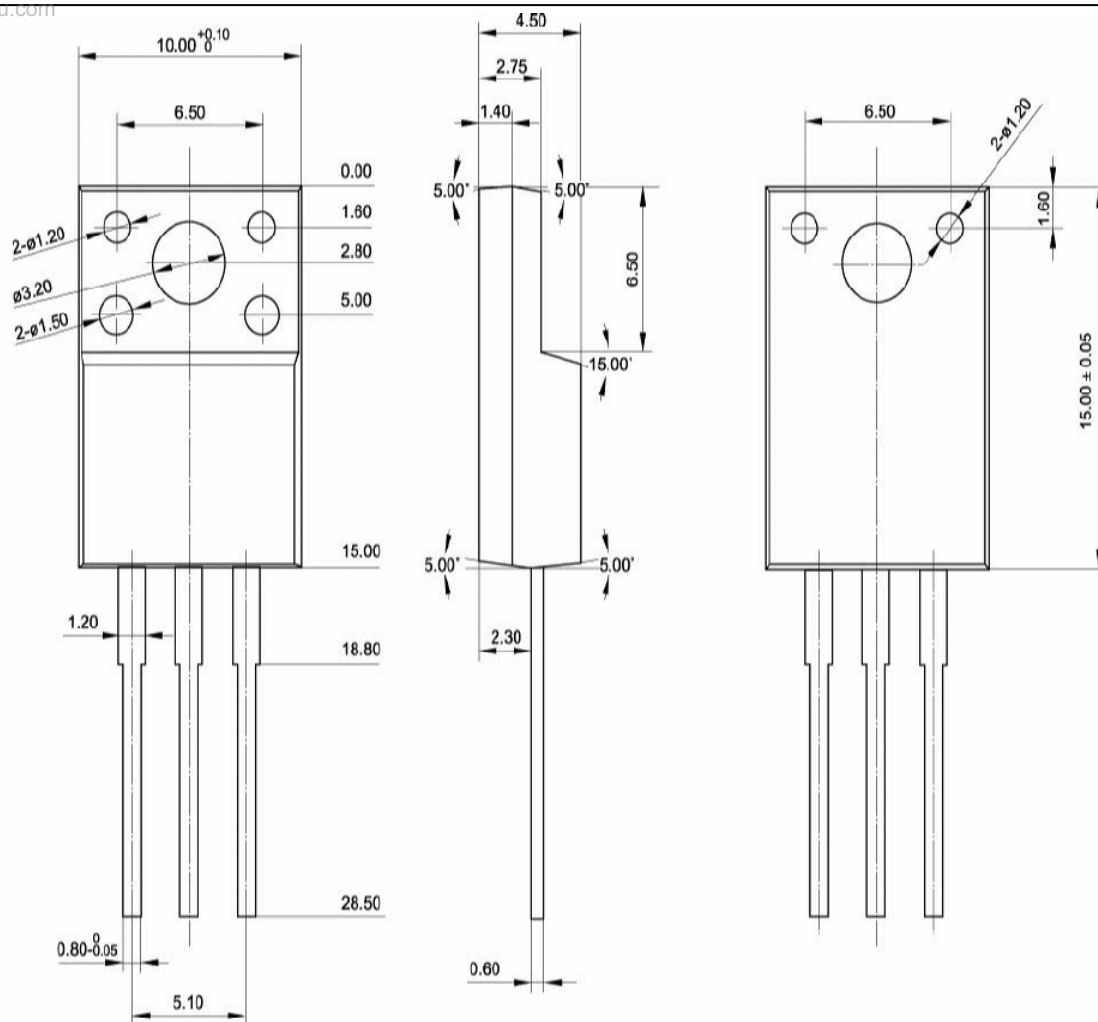


Fig.2 Outline dimensions