

Silicon NPN Power Transistors

MJF18008

DESCRIPTION

- With TO-220F package
- High voltage ,high speed
- Improved efficiency due to low base rive requirements:
 - High and flat DC current gain h_{FE}
 - Fast switching

APPLICATIONS

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

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

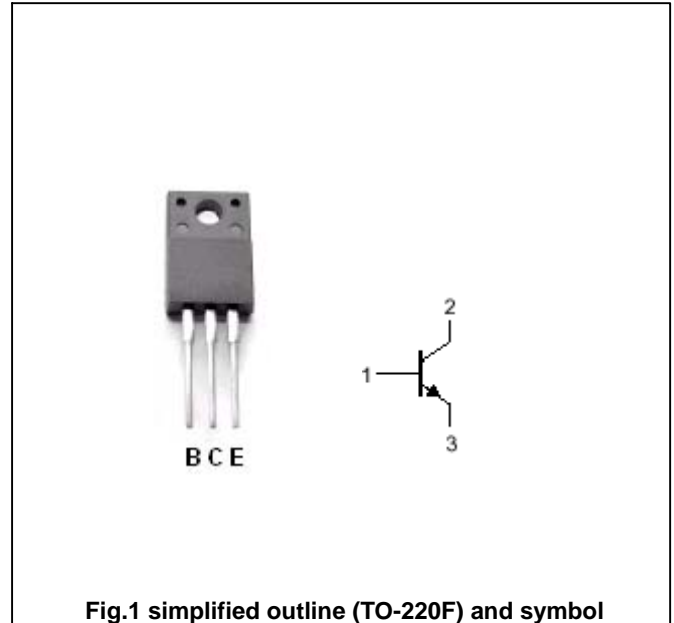


Fig.1 simplified outline (TO-220F) and symbol

Absolute maximum ratings($T_c=25$)

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)		8	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	$T_c=25$	45	W
T_j	Junction temperature		150	
T_{stg}	Storage temperature		-65~150	

THERMAL CHARACTERISTICS

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

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CHARACTERISTICS

T_j=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CE0(SUS)}	Collector-emitter sustaining voltage	I _C =0.1A L=25mH	450			V
V _{CEsat-1}	Collector-emitter saturation voltage	I _C =2A I _B =0.2A T _C =125			0.6	V
					0.65	
V _{CEsat-2}	Collector-emitter saturation voltage	I _C =4.5A I _B =0.9A T _C =125			0.7	V
					0.8	
V _{BEsat-1}	Emitter-base saturation voltage	I _C =2A I _B =0.2A			1.10	V
V _{BEsat-2}	Emitter-base saturation voltage	I _C =4.5A I _B =0.9A			1.25	V
I _{CES}	Collector cut-off current	V _{CE} =RatedV _{CE} ; V _{EB} =0	T _C =125			0.1
						0.5
		V _{CE} =800V				0.1
I _{CEO}	Collector cut-off current	V _{CE} =RatedV _{CE0} ; 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		13		MHz
C _{OB}	Collector outoput capacitance	f=1MHz ; V _{CB} =10V		100		pF

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

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

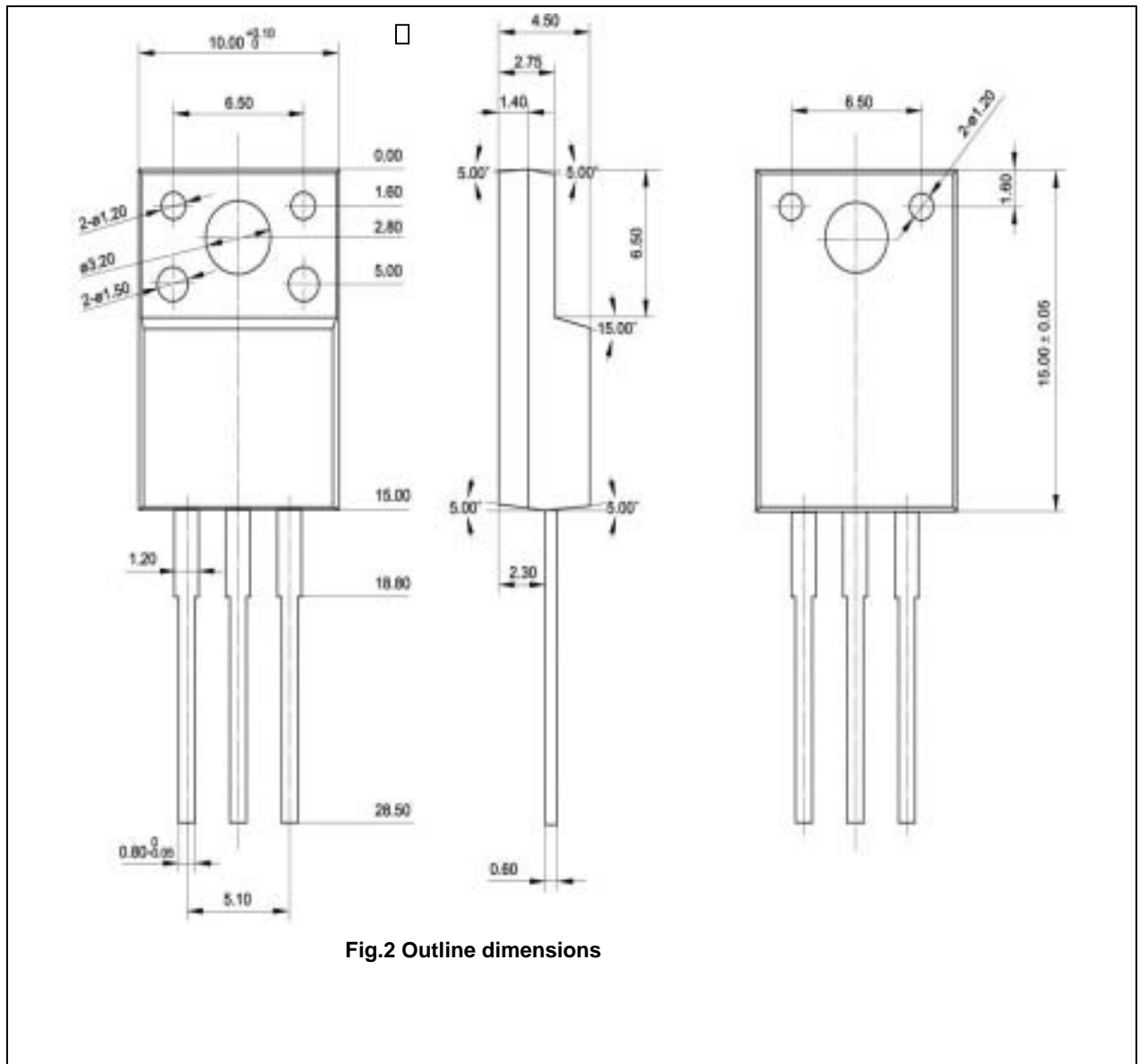


Fig.2 Outline dimensions