

isc Silicon NPN Power Transistor

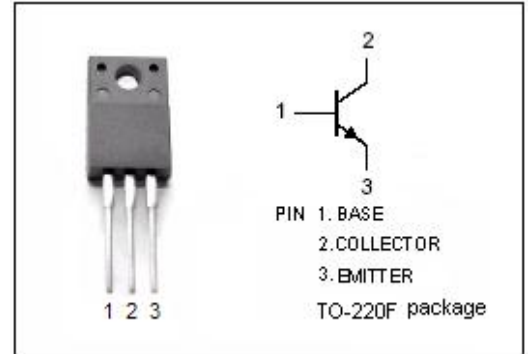
MJF18008

DESCRIPTION

- Collector-Base Breakdown Voltage-
: $V_{(BR)CBO} = 1000V(\text{Min})$
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

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

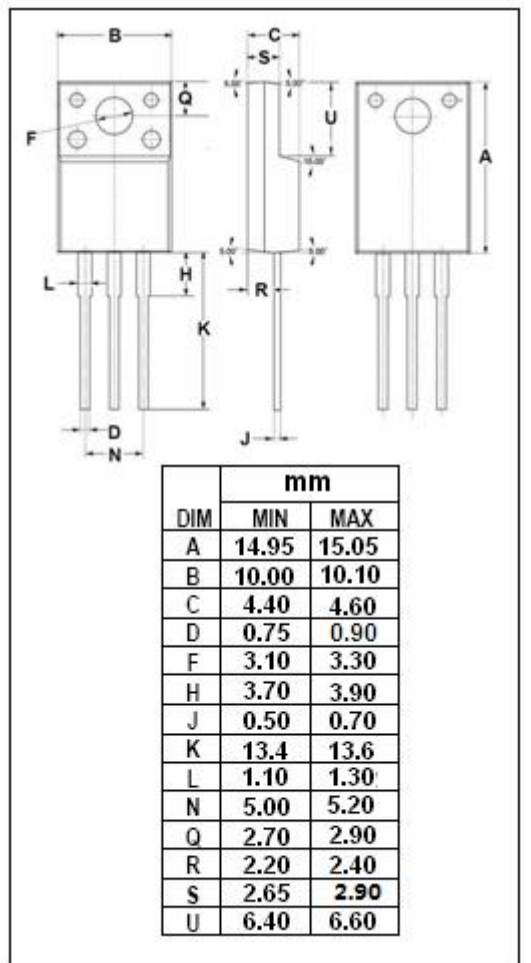


ABSOLUTE MAXIMUM RATINGS($T_a = 25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	1000	V
V_{CEO}	Collector-Emitter Voltage	450	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current -Continuous	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@ $T_c = 25^\circ\text{C}$	45	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R_{thj-c}	Thermal Resistance, Junction to Case	2.78	$^\circ\text{C/W}$
R_{thj-a}	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
V _{CEQ(SUS)}	Collector-Emitter Sustaining Voltage	I _C =30mA; I _B = 0	450			V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 2 A ;I _B = 0.2A T _C =125°C			0.6 0.65	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 4.5A ;I _B = 0.9A T _C =125°C			0.7 0.8	V
V _{BE(sat)-1}	Base-Emitter Saturation Voltage	I _C = 2A; I _B = 0.2A			1.1	V
V _{BE(sat)-2}	Base-Emitter Saturation Voltage	I _C = 4.5A; I _B = 0.9A			1.25	V
I _{CES}	Collector Cutoff Current	V _{CES} =RatedV _{CES} ; V _{EB} = 0 T _C =125°C			0.1 0.5	mA
		V _{CES} = 800V T _C =125°C			0.1	
I _{CEO}	Collector Cutoff Current	V _{CE} = RatedV _{CEO} ; I _B =0			0.1	mA
I _{EBO}	Emitter Cutoff 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 = 2 A ; V _{CE} = 1V	11			
h _{FE-4}	DC Current Gain	I _C = 10mA; V _{CE} = 5V	10			
f _T	Current-Gain—Bandwidth Product	I _C = 0.5A; V _{CE} =10V; f _{test} =1.0MHz		13		MHz
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V; f _{test} =1.0MHz		300		pF

Switching Times Resistive Load,Duty Cycle≤10%,Pulse Width=5.0ms

t _{on}	Turn-on Time	V _{CC} = 300V ,I _C = 4.5A I _{B1} = 0.9A; I _{B2} = 2.25A			180	ns
t _{off}	Turn-off Time				2.5	μ s
t _s	Storage Time				3.2	μ s
t _f	Fall Time				300	ns

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