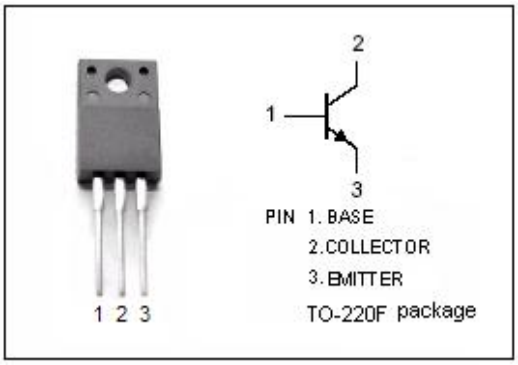
isc Silicon NPN Power Transistor — MJF18002

DESCRIPTION

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

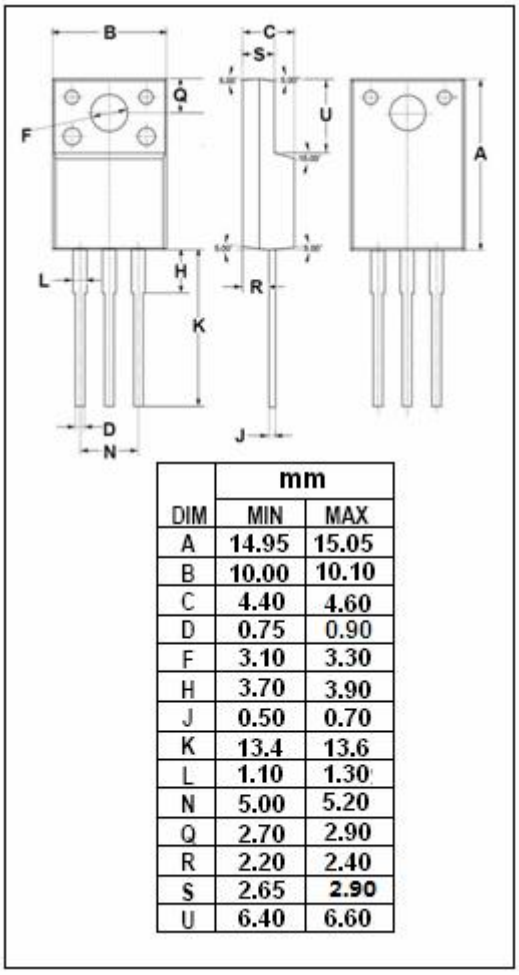


APPLICATIONS

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

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

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	2	A
I_{CM}	Collector Current-Peak	5	A
I_B	Base Current	1	A
I_{BM}	Base Current-Peak	2	A
P_D	Total Power Dissipation@T_C=25℃	25	W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-65~150	℃



DIM	mm MIN	mm MAX
A	14.95	15.05
B	10.00	10.10
C	4.40	4.60
D	0.75	0.90
F	3.10	3.30
H	3.70	3.90
J	0.50	0.70
K	13.4	13.6
L	1.10	1.30
N	5.00	5.20
Q	2.70	2.90
R	2.20	2.40
S	2.65	2.90
U	6.40	6.60

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Rresistance,Junction to Case	5.0	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance, Junction to Ambient	62.5	℃/W

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ELECTRICAL CHARACTERISTICS

Tj=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C=30mA; I_B= 0	450			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 0.4A ;I_B= 40mA T_C=125℃			0.5 0.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 1A ;I_B= 0.2A T_C=125℃			0.5 0.6	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	I_C= 0.4A; I_B= 40mA			1.1	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	I_C= 1A; I_B= 0.2A			1.25	V
I_{CES}	Collector Cutoff Current	V_{CES}=Rated$V_{CES;}$ V_{EB}= 0 T_C=125℃			0.1 0.5	mA
		V_{CES}= 800V T_C=125℃			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= 0.2A ; V_{CE}= 5V	14		34	
h_{FE-2}	DC Current Gain	I_C= 0.4A ; V_{CE}= 1V	11			
h_{FE-3}	DC Current Gain	I_C= 1A ; V_{CE}= 1V	6			
h_{FE-4}	DC Current Gain	I_C= 10mA; V_{CE}= 5V	10			
f_T	Current-Gain—Bandwidth Product	I_C= 0.2A; V_{CE}=10V; f_{test}=1.0MHz		13		MHz
C_{OB}	Output Capacitance	I_E= 0; V_{CB}= 10V; f_{test}=1.0MHz		100		pF

Switching Times Resistive Load,Duty Cycle≤10%,Pulse Width=20us

t_{on}	Turn-on Time	V_{CC}= 300V ,I_C= 1A I_{B1}= 0.2A; I_{B2}= 0.5A			150	ns
t_{off}	Turn-off Time				2.5	μs
t_s	Storage Time				2.75	μs
t_f	Fall Time				175	ns

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