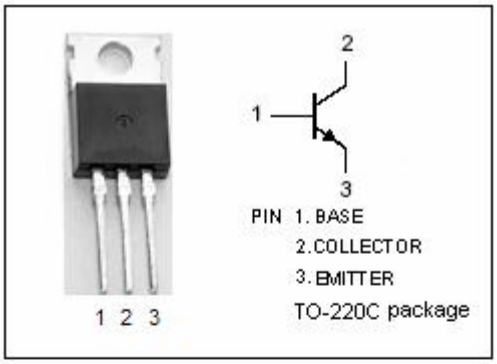
isc Silicon NPN Power Transistor — MJE16004

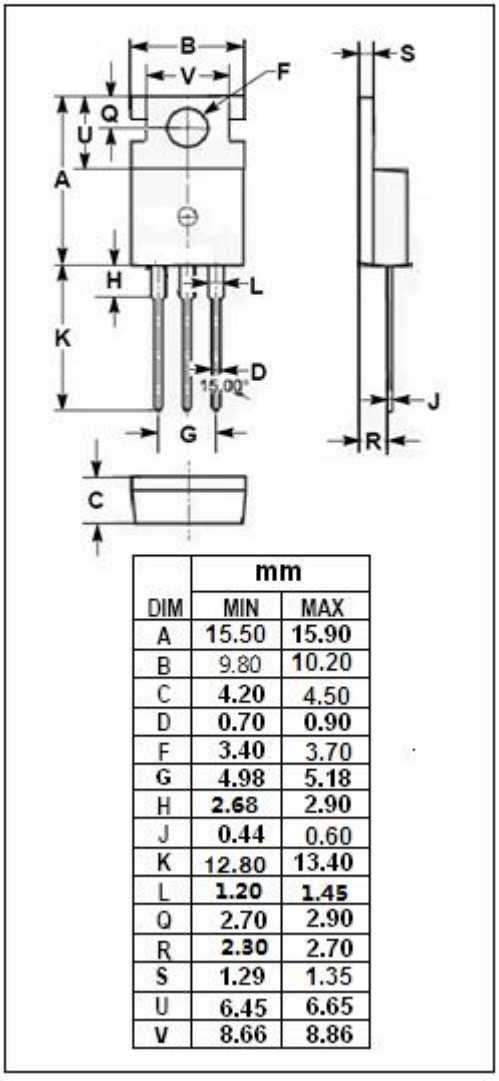
DESCRIPTION

- Collector–Emitter Sustaining Voltage
  : $V_{CEO(SUS)}$ = 400V(Min.)
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

- Designed for use in high-voltage, high-speed switching of inductive circuits where fall time and RBSOA are critical. they are particularly well-suited for line-operated switch-mode applications such as:
- Switching Regulators
- High resolution deflection circuits
- Inverters
- Motor drives



DIM	mm MIN	mm MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CEV}	Collector-Emitter Voltage	850	V
V_{CEO}	Collector-Emitter Voltage	450	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-peak	10	A
I_B	Base Current	4	A
I_{BM}	Base Current-Peak	8	A
P_C	Collector Power Dissipation T_C=25℃	80	W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	1.56	℃/W

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ELECTRICAL CHARACTERISTICS

T_C =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= 1.5A ;I_B= 0.15A			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 3A ;I_B= 0.3A T_C= 100℃			2.5 2.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 3A ;I_B= 0.3A T_C= 100℃			1.5 1.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 850V; I_E= 0 T_C= 100℃			0.25 1.5	mA
I_{CEO}	Collector Cutoff Current	V_{CE}= 450V;T_C= 100℃			2.5	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 6V; I_C= 0			1.0	mA
h_{FE}	DC Current Gain	I_C= 5A; V_{CE}= 5V	7			
C_{OB}	Output Capacitance	I_E= 0; V_{CB}= 10V; f_{test} = 1.0kHz		200		pF
Switching Times; Resistive Load						
t_d	Storage Time	I_C= 3A; V_{CC}= 250V; I_{B1}= 0.3A;I_{B2}= 0.6A; R_{B2}= 8Ω; PW= 30μs; Duty Cycle≤2%			0.1	μs
t_r	Fall Time				0.3	μs
t_s	Storage Time				2.7	μs
t_f	Fall Time				0.35	μs

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