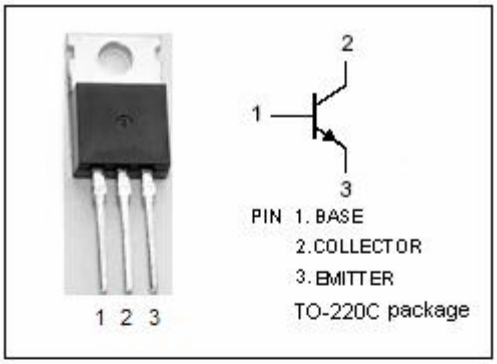
isc Silicon NPN Power Transistor — MJE8501

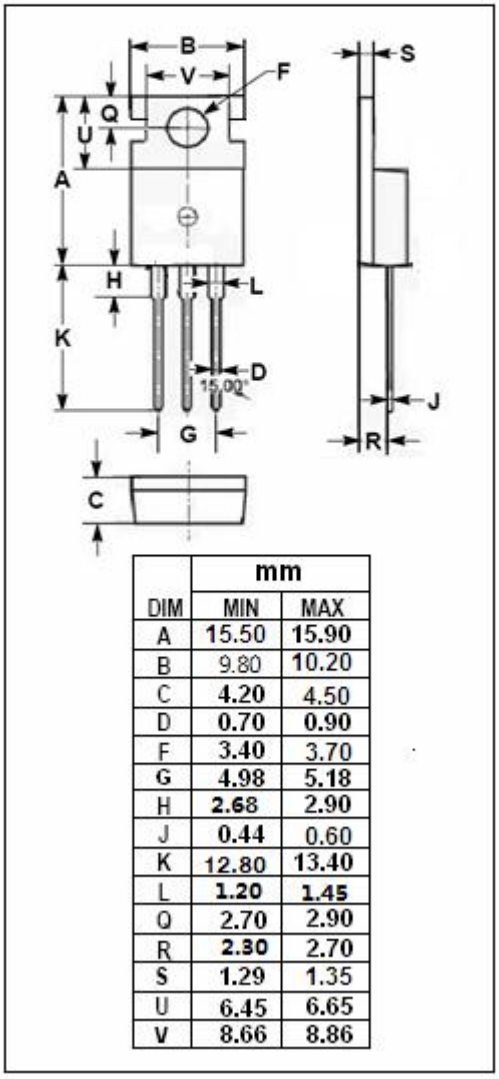
DESCRIPTION

- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$ = 800V(Min)
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

- Designed for high-voltage ,high-speed, power switching in inductive circuits where fall time is critical. They are particularly suited for line operated switch-mode applications. Typical applications:
- Switching regulators
- Inverters
- Solenoid and relay drivers
- Motor controls
- Deflection circuits



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_{CBO}	Collector- Base Voltage	1400	V
$V_{CEO(SUS)}$	Collector-Emitter Voltage	800	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current-Continuous	2.5	A
I_{CM}	Collector Current-Peak	5	A
I_B	Base Current-Continuous	2	A
I_{BM}	Base Current-Peak	4	A
P_C	Collector Power Dissipation@T_C=25℃	65	W
T_J	Junction Temperature	125	℃
T_{stg}	Storage Temperature	-65~125	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	1.54	℃/W

isc Silicon NPN Power Transistor MJE8501

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C=10mA ; I_B=0	800			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 1A; I_B= 0.33A I_C= 1A; I_B= 0.33A,T_C=100℃			2.0 3.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 2.5A; I_B= 1A			5.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 1A; I_B= 0.33A I_C= 1A; I_B= 0.33A,T_C=100℃			1.5 1.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}=1400V;I_E=0 V_{CB}=1400V;I_E=0;T_C=100℃			0.25 5.0	mA
I_{CEO}	Collector Cutoff Current	V_{CE}= 800V;T_C= 100℃			5.0	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 7V; I_C=0			1.0	mA
h_{FE}	DC Current Gain	I_C= 0.5A ; V_{CE}= 5V	7.5			
C_{OB}	Output Capacitance	I_E= 0; V_{CB}= 10V; f_{test}=1.0kHz	50			pF