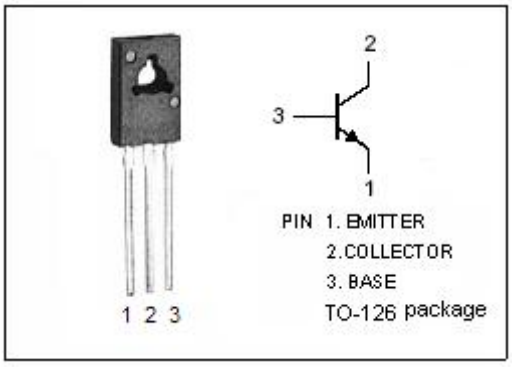
isc Silicon NPN Power Transistor — MJE181

DESCRIPTION

- Collector–Emitter Sustaining Voltage—
  : $V_{CEO(SUS)}$ = 60V
- DC Current Gain—
  : h_{FE} = 30(Min) @ I_C= 0.5 A
  = 12(Min) @ I_C= 1.5 A
- Complement to the PNP MJE171
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

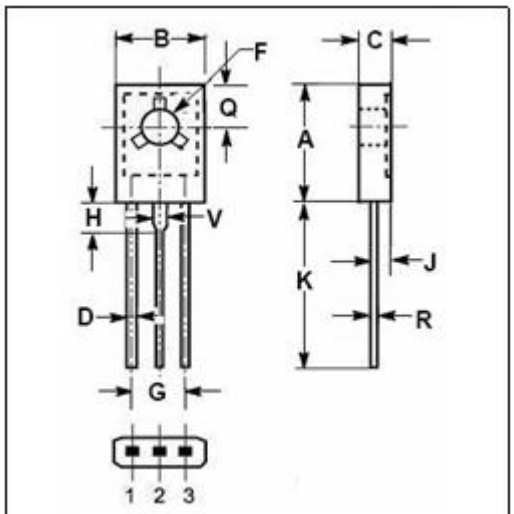


APPLICATIONS

- Low power audio amplifier
- Low current high speed switching applications

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	3	A
I_{CM}	Collector Current-peak	6	A
I_B	Base Current	1	A
P_C	Collector Power Dissipation T_a=25℃	1.5	W
	Collector Power Dissipation T_C=25℃	12.5	
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-65~150	℃



DIM	mm MIN	MAX
A	10.70	10.95
B	7.70	7.90
C	2.60	2.80
D	0.66	0.86
F	3.10	3.30
G	4.48	4.68
H	2.00	2.20
J	1.35	1.55
K	15.30	16.30
Q	3.70	3.90
R	0.40	0.60
V	1.17	1.37

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	10	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	83.4	℃/W

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ELECTRICAL CHARACTERISTICS

T_C =25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 10mA; I_B= 0	60		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 0.5 A ;I_B= 50mA		0.3	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 1.5A ;I_B= 0.15 A		0.9	V
$V_{CE(sat)-3}$	Collector-Emitter Saturation Voltage	I_C= 3A ;I_B= 0.6 A		1.7	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	I_C= 1.5A; I_B= 0.15A		1.5	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	I_C= 3A; I_B= 0.6A		2.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	V_{CE}= 1V; I_C= 0.5A		1.2	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 80V; I_E= 0 V_{CB}= 80V; I_E= 0;T_C= 150℃		0.1 0.1	μA mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 7V; I_C= 0		0.1	μA
h_{FE-1}	DC Current Gain	I_C= 0.1 A ; V_{CE}= 1V	50	250	
h_{FE-2}	DC Current Gain	I_C= 0.5A ; V_{CE}= 1V	30		
h_{FE-3}	DC Current Gain	I_C= 1.5 A ; V_{CE}= 1V	12		