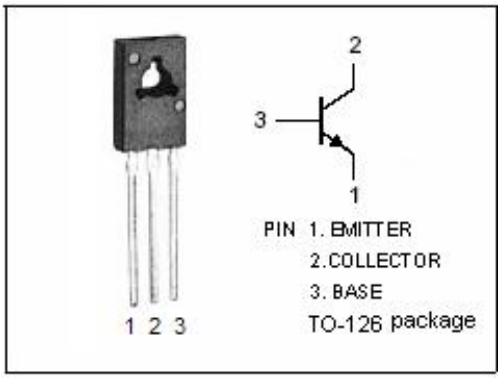
isc Silicon NPN Power Transistor — MJE243

DESCRIPTION

- Collector–Emitter Sustaining Voltage–
  : $V_{CEO(SUS)}$ = 100 V(Min)
- DC Current Gain–
  : h_{FE} = 40(Min) @ I_C= 0.2 A
- Low Collector Saturation Voltage–
  : $V_{CE(sat)}$ = 0.3V(Max.)@ I_C= 0.5 A
- Complement to the PNP MJE253
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

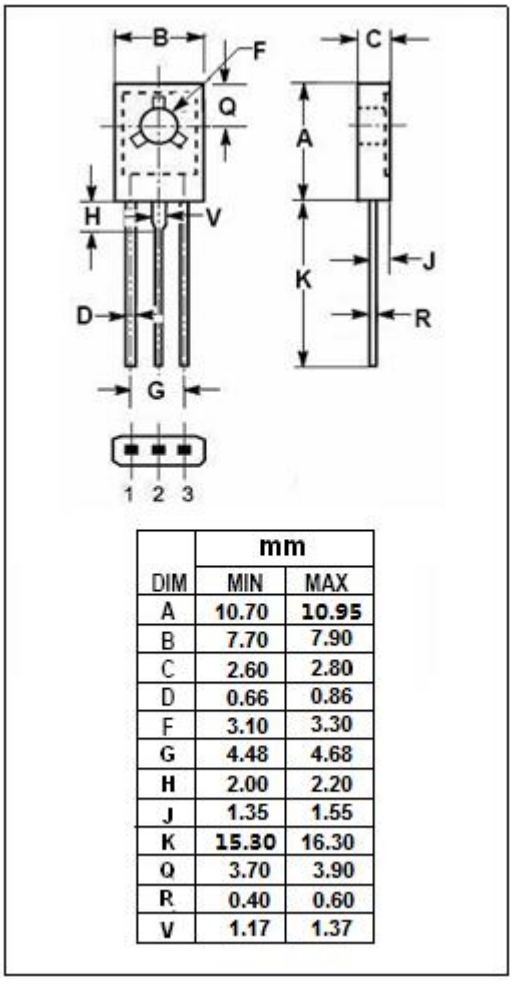


APPLICATIONS

- Designed for low power audio amplifier and low-current, high-speed switching applications.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	4	A
I_{CM}	Collector Current-Peak	8	A
I_B	Base Current	1	A
P_C	Collector Power Dissipation T_a=25℃	1.5	W
	Collector Power Dissipation T_C=25℃	15	
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	8.34	℃/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	100		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= 1A ;I_B= 0.1A		0.6	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 2A ;I_B= 0.2A		1.8	V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C= 0.5A; V_{CE}= 1V		1.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 100V; I_E= 0 V_{CB}= 100V; I_E= 0;T_C= 125℃		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= 0.2 A ; V_{CE}= 1V	40	180	
h_{FE-2}	DC Current Gain	I_C= 1A ; V_{CE}= 1V	15		
f_T	Current-Gain—Bandwidth Product	I_C= 0.1 A; V_{CE}= 10V; f_{test} = 10MHz	40		MHz
C_{OB}	Collector Capacitance	I_E= 0; V_{CB}= 10V; f_{test} = 0.1MHz	40		pF