

isc Silicon NPN Power Transistor
MJE243
DESCRIPTION

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

APPLICATIONS

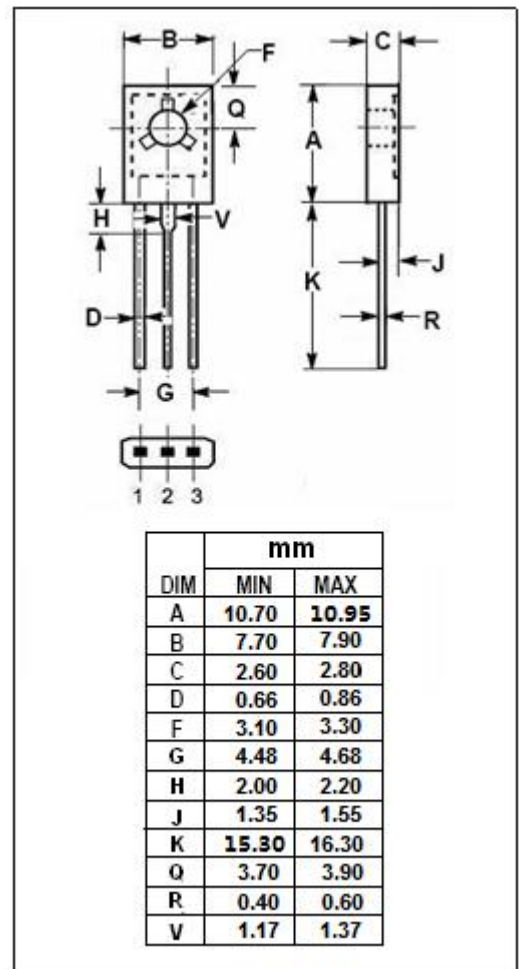
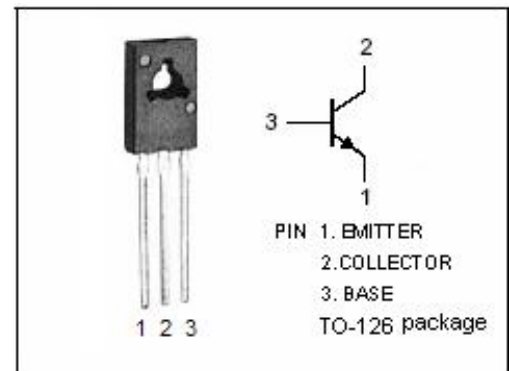
- Designed for low power audio amplifier and low-current, high-speed switching applications.

ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

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 $T_a=25^\circ\text{C}$	1.5	W
	Collector Power Dissipation $T_C=25^\circ\text{C}$	15	
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	8.34	$^\circ\text{C}/\text{W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	83.4	$^\circ\text{C}/\text{W}$



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ELECTRICAL CHARACTERISTICS

T_C =25°C 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°C		0.1 0.1	μ A mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7V; I _C = 0		0.1	μ A
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

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