

isc Silicon NPN Power Transistor
BD175
DESCRIPTION

- DC Current Gain-
: $h_{FE} = 40-250(\text{Min}) @ I_C = 0.15\text{A}$
- Collector-Emitter Sustaining Voltage -
: $V_{CEO(\text{SUS})} = 45\text{V}(\text{Min})$
- Complement to type BD176
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

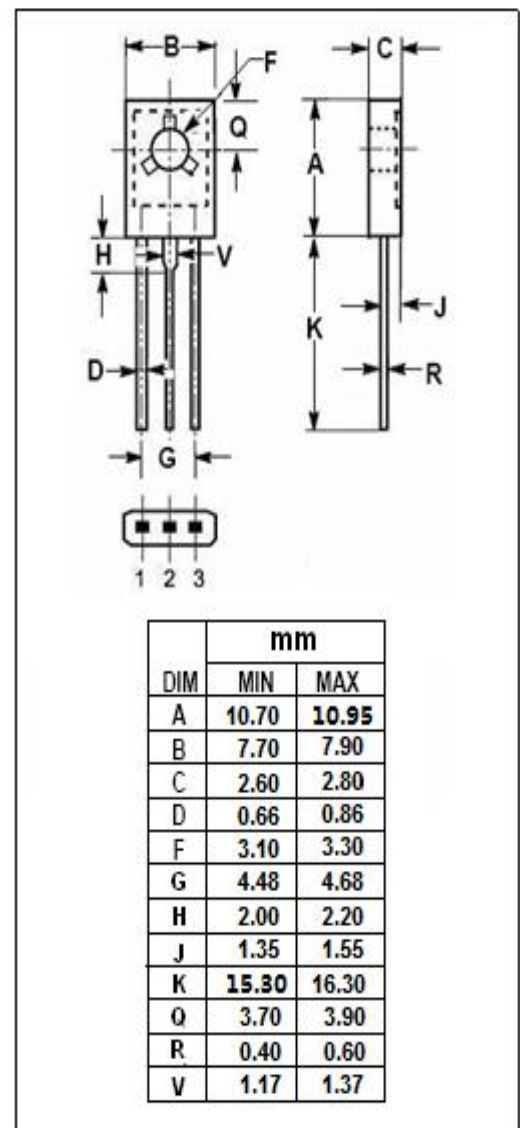
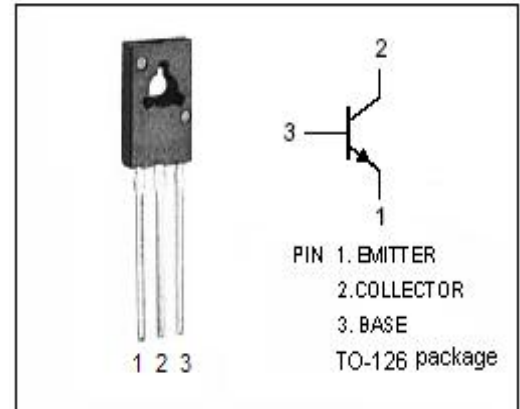
- Designed for medium power linear and switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	45	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	3	A
I_{CM}	Collector Current-Pulse	7	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	30	W
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	8.5	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	70	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEQ(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 50mA ; I _B = 0	45			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 1A; I _B = 0.1A			0.8	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 1A; V _{CE} = 2V			1.3	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 45V; I _E = 0			100	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0			1	mA
h _{FE-1}	DC Current Gain	I _C = 150mA; V _{CE} = 2V	40		250	
h _{FE-2}	DC Current Gain	I _C = 1A; V _{CE} = 2V	15			
f _T	Current-Gain—Bandwidth Product	I _C = 0.25A; V _{CE} = 10V	3			MHz

◆ h_{FE-1} Classifications

6	10	16
40-100	63-160	100-250

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