

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

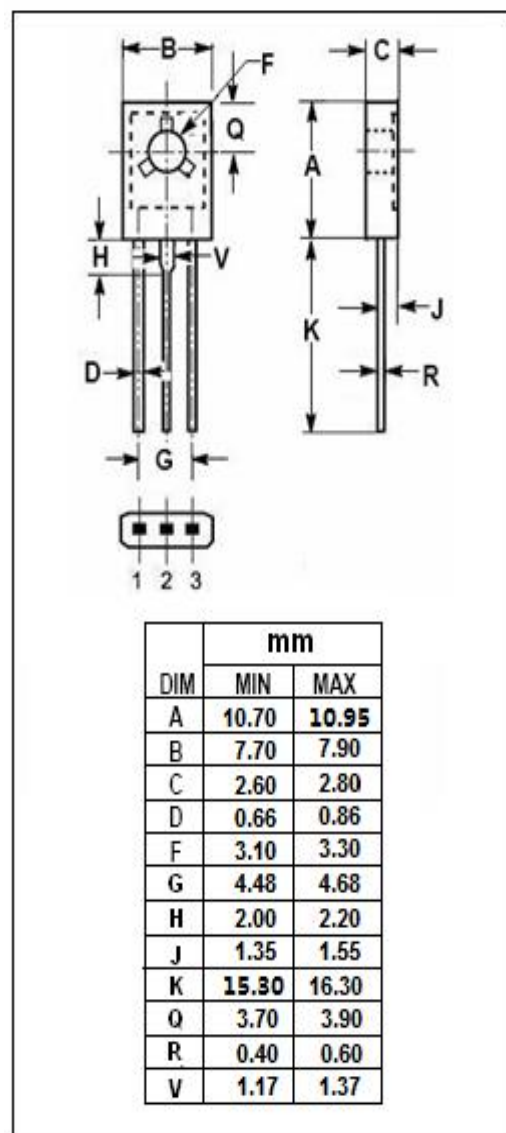
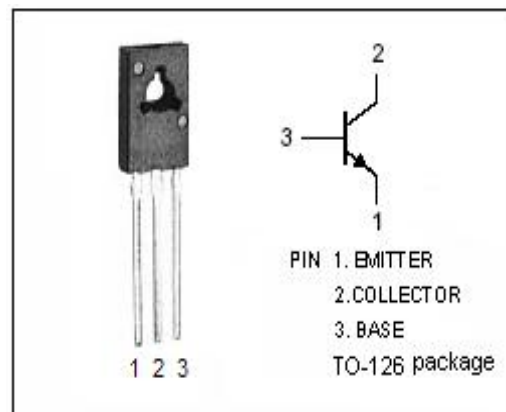
- Designed for medium power linear and switching applications.

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	$^\circ\text{C/W}$



isc Silicon NPN Power Transistor**BD175****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEQ(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=50\text{mA}$; $I_B=0$	45			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=1\text{A}$; $I_B=0.1\text{A}$			0.8	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=1\text{A}$; $V_{CE}=2\text{V}$			1.3	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=45\text{V}$; $I_E=0$			100	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}$; $I_C=0$			1	mA
h_{FE-1}	DC Current Gain	$I_C=150\text{mA}$; $V_{CE}=2\text{V}$	40		250	
h_{FE-2}	DC Current Gain	$I_C=1\text{A}$; $V_{CE}=2\text{V}$	15			
f_T	Current-Gain—Bandwidth Product	$I_C=0.25\text{A}$; $V_{CE}=10\text{V}$	3			MHz

◆ h_{FE-1} Classifications

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

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