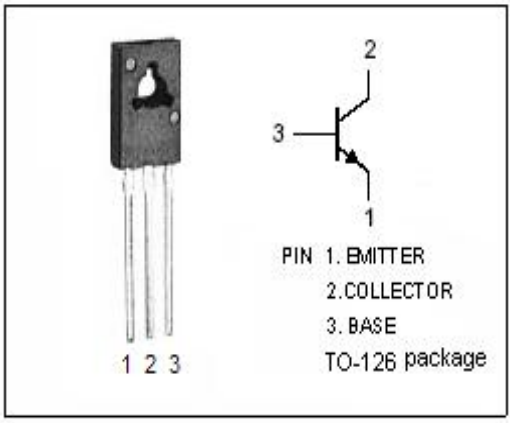
isc Silicon NPN Power Transistor — BD175



DESCRIPTION

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

APPLICATIONS

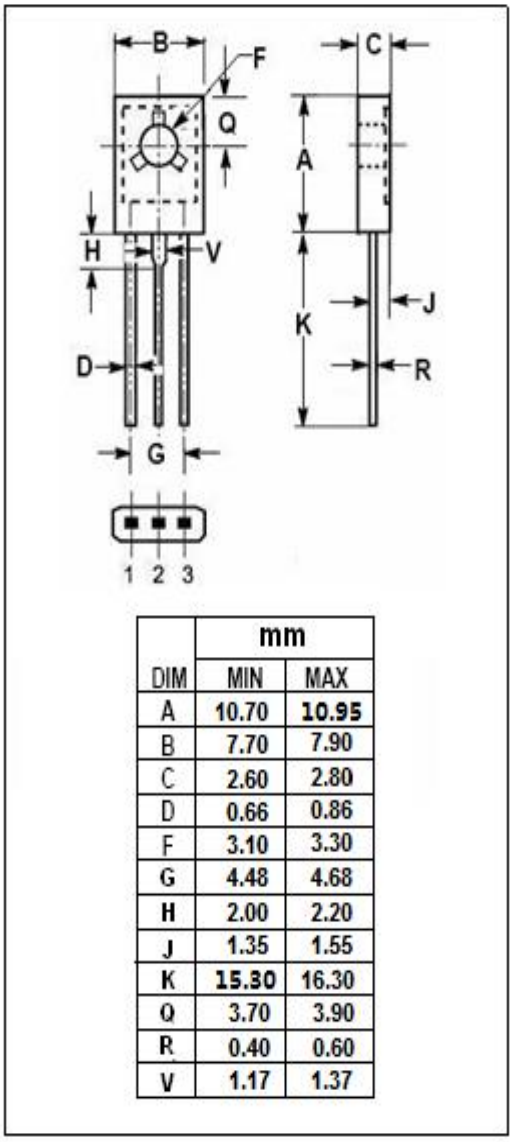
- Designed for medium power linear and switching applications.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

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℃	30	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	8.5	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	70	℃/W



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

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	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	μA
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