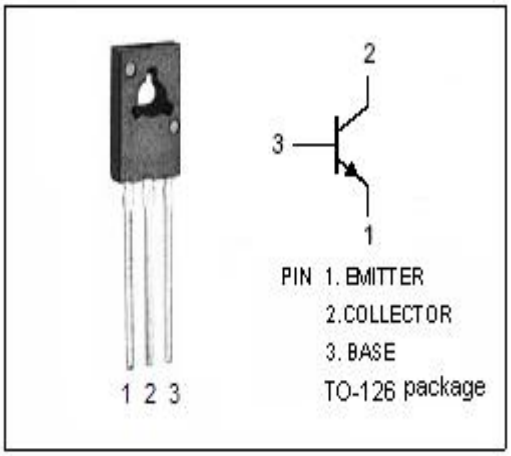
isc Silicon NPN Power Transistor — BD139

DESCRIPTION

- DC Current Gain-
  : h_{FE}= 40(Min)@ I_C= 0.15A
- Collector-Emitter Sustaining Voltage -
  : $V_{CEO(SUS)}$= 80V(Min)
- Complement to type BD140
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

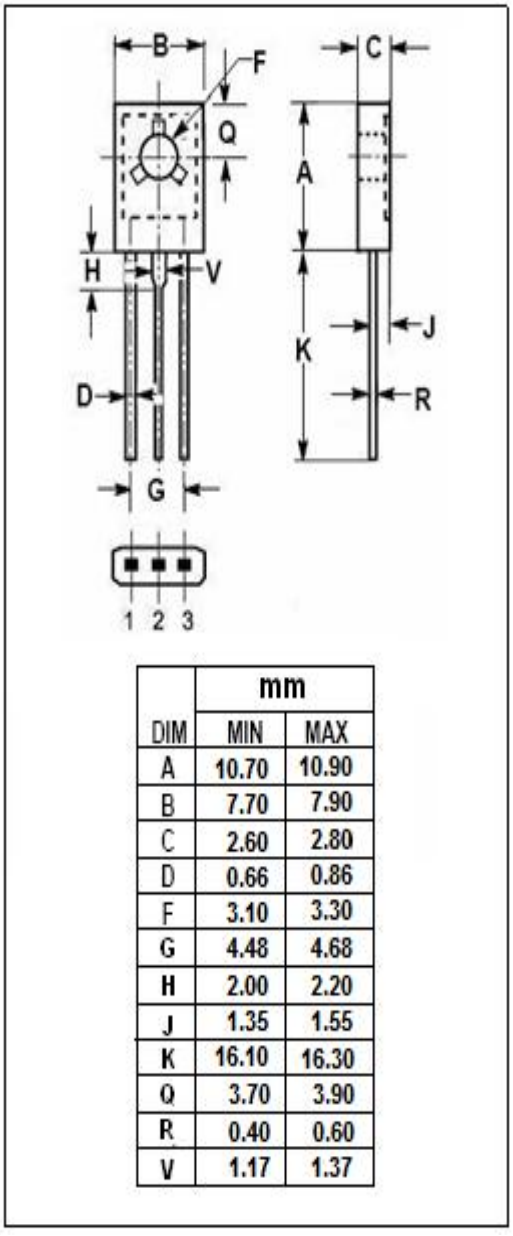
- Designed for use as audio amplifiers and drivers utilizing complementary or quasi complementary circuits.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	1.5	A
I_B	Base Current-Continuous	0.5	A
P_C	Collector Power Dissipation @ T_a=25℃	1.25	W
	Collector Power Dissipation @ T_C=25℃	12.5	
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	10	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	100	℃/W



DIM	mm MIN	MAX
A	10.70	10.90
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	16.10	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= 30mA ; I_B= 0	80			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 0.5A; I_B= 50mA			0.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C= 0.5A; V_{CE}= 2V			1.0	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 30V; I_E= 0 V_{CB}= 30V; I_E= 0,T_C=125℃			0.1 10	μA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0			10	μA
h_{FE-1}	DC Current Gain	I_C= 5mA ; V_{CE}= 2V	25			
h_{FE-2}	DC Current Gain	I_C= 0.5A ; V_{CE}= 2V	25			
h_{FE-3}	DC Current Gain	I_C= 0.15A ; V_{CE}= 2V	40		250	