

isc Silicon NPN Power Transistor**BD139****DESCRIPTION**

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

APPLICATIONS

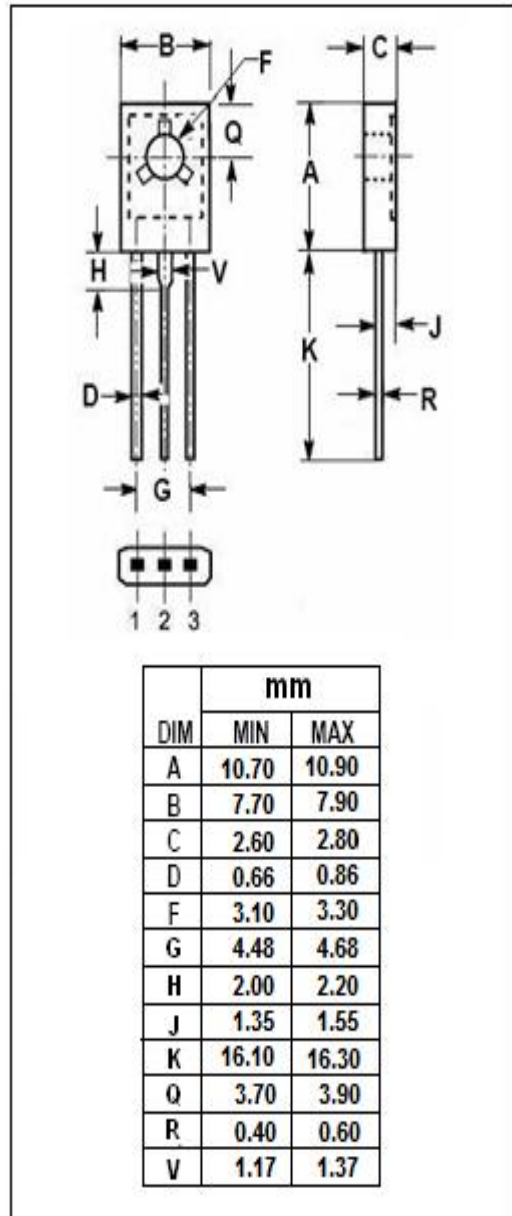
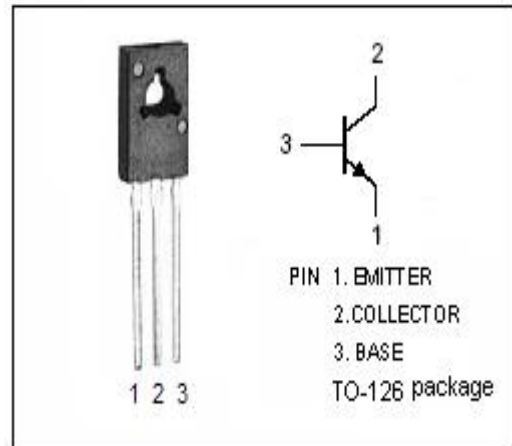
- Designed for use as audio amplifiers and drivers utilizing complementary or quasi complementary circuits.

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

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 @ $T_a = 25^\circ\text{C}$	1.25	W
	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	12.5	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

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



isc Silicon NPN Power Transistor**BD139****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	$I_C=30\text{mA}$; $I_B=0$	80			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=0.5\text{A}$; $I_B=50\text{mA}$			0.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=0.5\text{A}$; $V_{CE}=2\text{V}$			1.0	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=30\text{V}$; $I_E=0$ $V_{CB}=30\text{V}$; $I_E=0$, $T_C=125^{\circ}\text{C}$			0.1 10	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}$; $I_C=0$			10	μA
h_{FE-1}	DC Current Gain	$I_C=5\text{mA}$; $V_{CE}=2\text{V}$	25			
h_{FE-2}	DC Current Gain	$I_C=0.5\text{A}$; $V_{CE}=2\text{V}$	25			
h_{FE-3}	DC Current Gain	$I_C=0.15\text{A}$; $V_{CE}=2\text{V}$	40		250	

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