

isc Silicon PNP Power Transistors

BD500/B

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = -50V(\text{Min})$
-80V(Min)
- High Power Dissipation
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

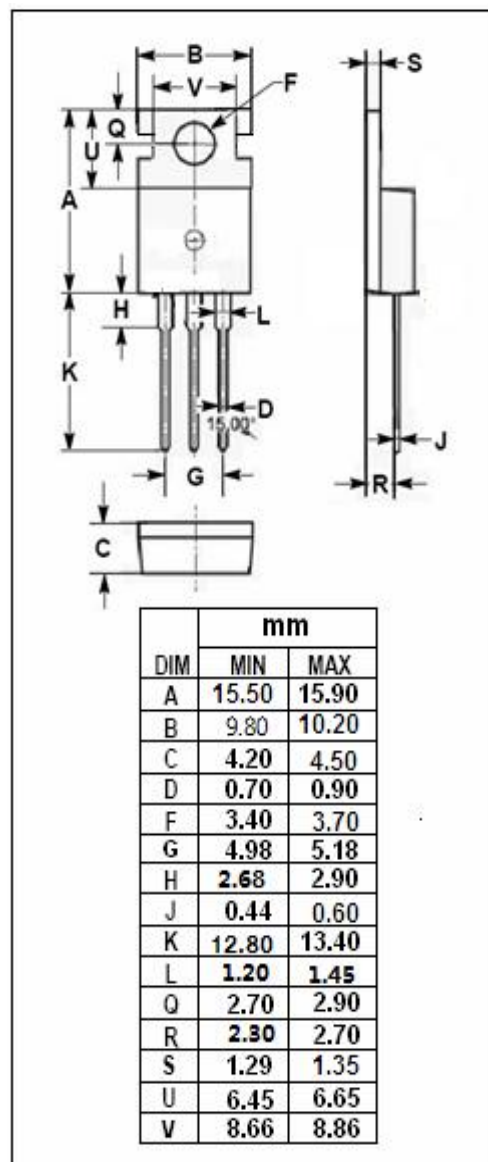
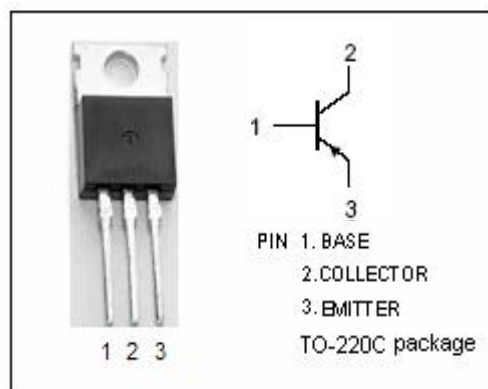
- Designed for use in high power audio amplifiers utilizing complementary or quasi complementary circuits.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BD500	-55
		BD500B	-85
V_{CEO}	Collector-Emitter Voltage	BD500	-50
		BD500B	-80
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current-Continuous	-10	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	75	W
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	1.39	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	BD500	$I_C = -30\text{mA}; I_B = 0$	-50			V
		BD500B		-80			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	BD500	$I_C = -5\text{A}; I_B = -0.5\text{A}$			-1.0	V
		BD500B	$I_C = -3.5\text{A}; I_B = -0.35\text{A}$				
$V_{BE(on)}$	Base-Emitter On Voltage	BD500	$I_C = -5\text{A}; V_{CE} = -4\text{V}$			-1.6	V
		BD500B	$I_C = -3.5\text{A}; V_{CE} = -4\text{V}$				
I_{CBO}	Collector Cutoff Current		$V_{CB} = -55\text{V}; I_E = 0$			-1.0	mA
			$V_{CB} = -85\text{V}; I_E = 0$				
I_{EBO}	Emitter Cutoff Current		$V_{EB} = -5\text{V}; I_C = 0$			-1.0	mA
h_{FE}	DC Current Gain	BD500	$I_C = -5\text{A}; V_{CE} = -4\text{V}$	15		90	
		BD500B	$I_C = -3.5\text{A}; V_{CE} = -4\text{V}$				
f_T	Current-Gain—Bandwidth Product		$I_C = -1.0\text{A}; V_{CE} = -10\text{V}$		8		MHz

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