

isc Silicon NPN Power Transistors

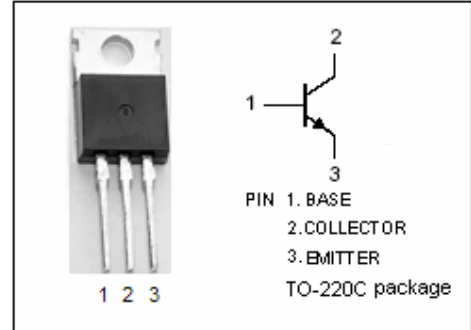
BD501/B

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 50V(\text{Min})$
80V(Min)
- High Power Dissipation

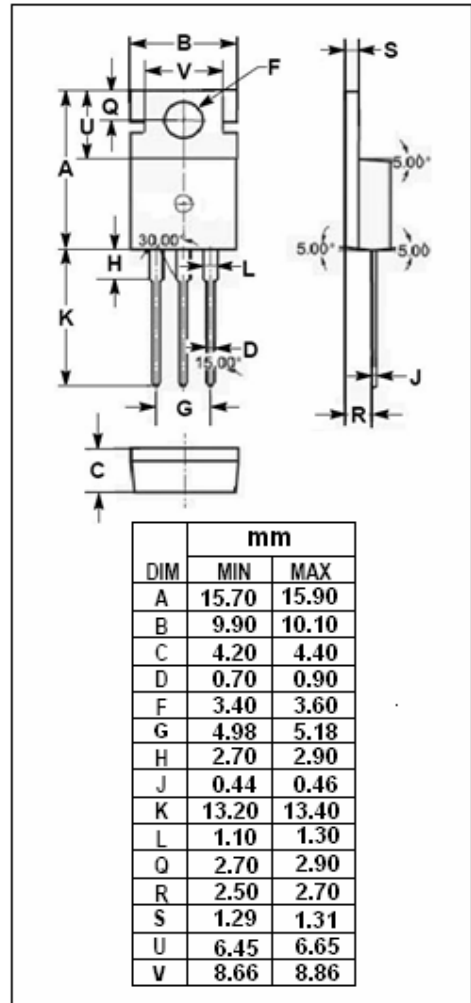
APPLICATIONS

- 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	BD501	55	V
		BD501B	85	
V_{CEO}	Collector-Emitter Voltage	BD501	50	V
		BD501B	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	$^{\circ}\text{C}/\text{W}$

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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	BD501	$I_C=30\text{mA}; I_B=0$	50			V
		BD501B		80			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	BD501	$I_C=5\text{A}; I_B=0.5\text{A}$			1.0	V
		BD501B	$I_C=3.5\text{A}; I_B=0.35\text{A}$				
$V_{BE(on)}$	Base-Emitter On Voltage	BD501	$I_C=5\text{A}; V_{CE}=4\text{V}$			1.6	V
		BD501B	$I_C=3.5\text{A}; V_{CE}=4\text{V}$				
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	BD501	$I_C=5\text{A}; V_{CE}=4\text{V}$	15		90	
		BD501B	$I_C=3.5\text{A}; V_{CE}=4\text{V}$				
f_T	Current-Gain—Bandwidth Product		$I_C=1.0\text{A}; V_{CE}=10\text{V}$		8		MHz