

isc Silicon NPN Power Transistors
BD501/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

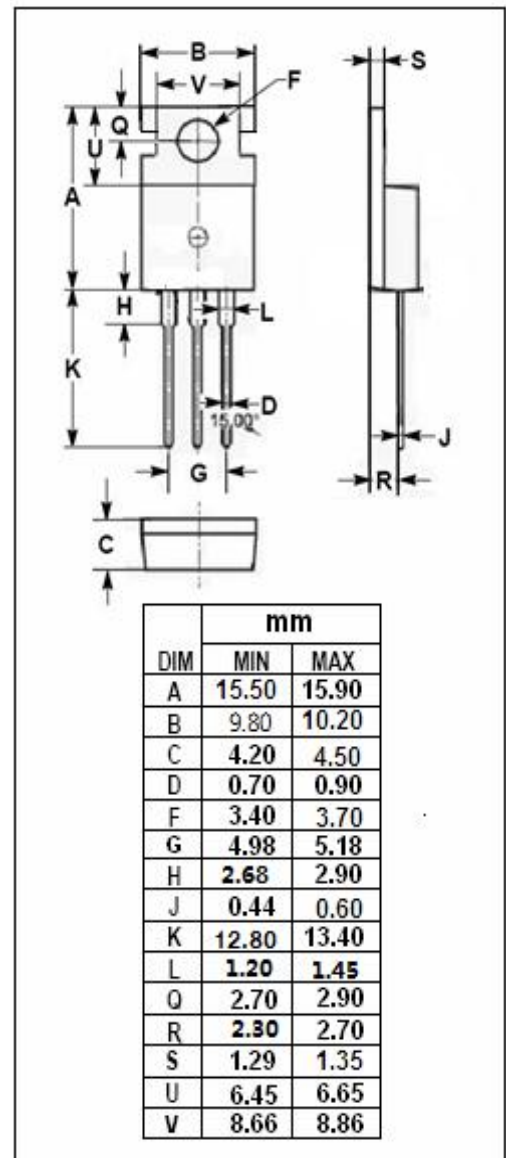
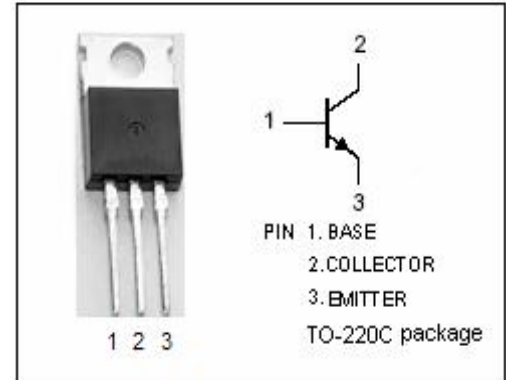
- Designed for use in high power audio amplifiers utilizing complementary or quasi complementary circuits.

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

SYMBOL	PARAMETER	VALUE	UNIT	
V_{CBO}	Collector-Base Voltage	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°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	BD501	I _C = 30mA ; I _B = 0	50		V
		BD501B		80		
V _{CE(sat)}	Collector-Emitter Saturation Voltage	BD501	I _C = 5A; I _B = 0.5A		1.0	V
		BD501B	I _C = 3.5A; I _B = 0.35A			
V _{BE(on)}	Base-Emitter On Voltage	BD501	I _C = 5A; V _{CE} = 4V		1.6	V
		BD501B	I _C = 3.5A; V _{CE} = 4V			
I _{CBO}	Collector Cutoff Current		V _{CB} = 55V; I _E = 0		1.0	mA
			V _{CB} = 85V; I _E = 0			
I _{EBO}	Emitter Cutoff Current		V _{EB} = 5V; I _C = 0		1.0	mA
h _{FE}	DC Current Gain	BD501	I _C = 5A; V _{CE} = 4V	15	90	
		BD501B	I _C = 3.5A; V _{CE} = 4V			
f _T	Current-Gain—Bandwidth Product		I _C = 1.0A ; V _{CE} = 10V		8	MHz

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