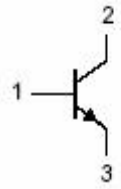
isc Silicon NPN Power Transistors — BD501/B

DESCRIPTION

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

1 2 3



PIN 1. BASE
2.COLLECTOR
3. EMITTER
TO-220C package

APPLICATIONS

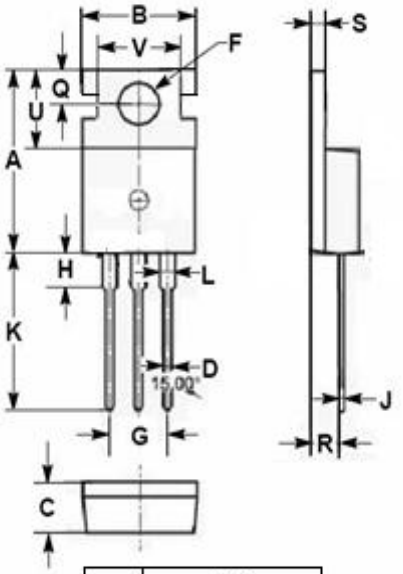
- Designed for use in high power audio amplifiers utilizing complementary or quasi complementary circuits.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

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℃		75	W
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	1.39	℃/W



DIM	mm MIN	MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

isc Silicon NPN Power Transistors BD501/B

ELECTRICAL CHARACTERISTICS

T_C=25℃ 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