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Silicon NPN Power Transistor

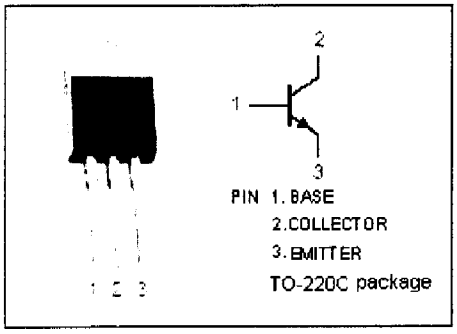
BDT91/93/95

DESCRIPTION

- DC Current Gain- h_{FE}= 20~200@ I_C= 4A
- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$ = 60V(Min)- BDT91; 80V(Min)- BDT93;
  100V(Min)- BDT95
- Complement to Type BDT92/94/96

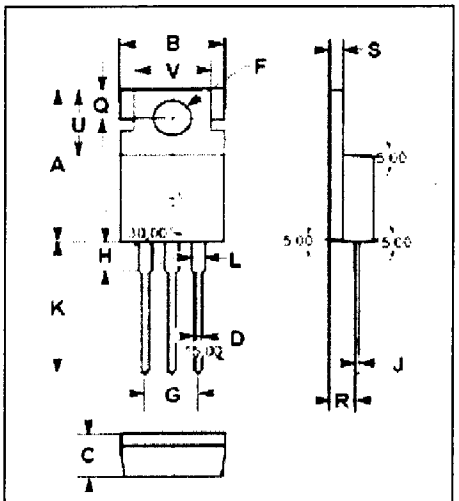
APPLICATIONS

- Designed for use in audio output stages and general amplifier and switching applications.



ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDT91	60	V
		BDT93	80	
		BDT95	100	
V_{CEO}	Collector-Emitter Voltage	BDT91	60	V
		BDT93	80	
		BDT95	100	
V_{EBO}	Emitter-Base Voltage		7	V
I_C	Collector Current-Continuous		10	A
I_{CM}	Collector Current-Peak		20	A
I_B	Base Current-Continuous		4	A
P_C	Collector Power Dissipation @ T_C=25℃		90	W
T_J	Junction Temperature		150	℃
T_{stg}	Storage Temperature Range		-65~150	℃



DIM	mm MIN	MAX
A	15.70	15.90
B	9.90	10.10
C	4.20	4.40
D	0.70	0.90
F	3.40	3.60
G	4.98	5.18
H	2.70	2.90
J	0.44	0.46
K	13.20	13.40
L	1.10	1.30
Q	2.70	2.90
R	2.50	2.70
S	1.29	1.31
U	6.45	6.65
V	8.66	8.86

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	1.4	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	70	℃/W

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	BDT91	I_C= 100mA ; I_B= 0	60			V
		BDT93		80			
		BDT95		100			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		I_C= 4A; I_B= 0.4A			1	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		I_C= 10A; I_B= 3.3A			3	V
$V_{BE(on)}$	Base-Emitter On Voltage		I_C= 4A; V_{CE}= 4V			1.6	V
I_{CBO}	Collector Cutoff Current		V_{CB}= V_{CBOmax}; I_E= 0 V_{CB}=$^1/_2V_{CBOmax}$; I_E= 0,T_J=150℃			0.1 5	mA
I_{CEO}	Collector Cutoff Current		V_{CE}= V_{CEOmax} V; I_B= 0			1	mA
I_{EBO}	Emitter Cutoff Current		V_{EB}= 7V; I_C= 0			1	mA
h_{FE-1}	DC Current Gain		I_C= 4A ; V_{CE}= 4V	20		200	
h_{FE-2}	DC Current Gain		I_C= 10A ; V_{CE}= 4V	5			
f_T	Current-Gain—Bandwidth Product		I_C= 500mA ; V_{CE}= 10V	4			MHz

Switching times

t_{on}	Turn-On Time	I_C= 4A; I_{B1}= -I_{B2}= 0.4A		0.5	1	μs
t_{off}	Turn-Off Time			2	4	μs