

Silicon NPN Power Transistor

BDT91/93/95

DESCRIPTION

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

APPLICATIONS

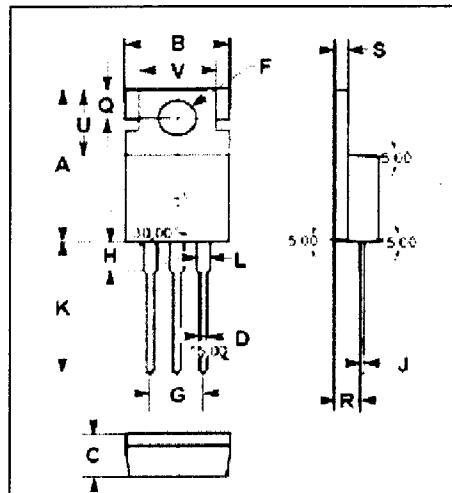
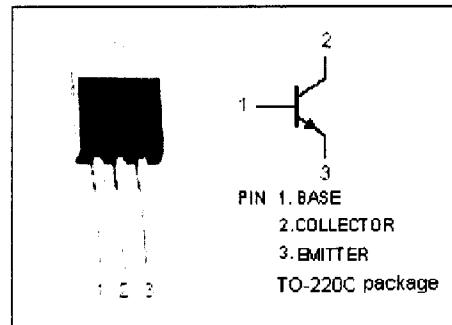
- Designed for use in audio output stages and general amplifier and switching applications.

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

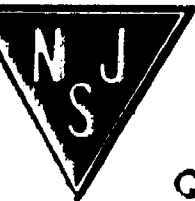
SYMBOL	PARAMETER	VALUE	UNIT	
V_{CBO}	Collector-Base Voltage	BDT91	60	V
		BDT93	80	
		BDT95	100	
V_{CEO}	Collector-Emitter Voltage	BDT91	60	V
		BDT93	80	
		BDT95	100	
V_{EBO}	Emitter-Base Voltage	7	V	
I_C	Collector Current-Continuous	10	A	
I_{CM}	Collector Current-Peak	20	A	
I_B	Base Current-Continuous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

THERMAL CHARACTERISTICS

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



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



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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	BDT91	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	$V_{CB}=V_{CB0max}; I_E=0$ $V_{CB}=1/2V_{CB0max}; I_E=0, T_J=150^\circ\text{C}$			0.1 5	mA	
I_{CEO}	Collector Cutoff Current	$V_{CE}=V_{CE0max} V; I_B=0$			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