

**BDT84 – BDT88**

**SILICON POWER TRANSISTORS**

P-N-P epitaxial base transistors in a TO-220 plastic envelope, designed for use in audio output stages and general amplifier and switching applications.

N-P-N complements are BDT81, BDT83, BDT85 and BDT87.

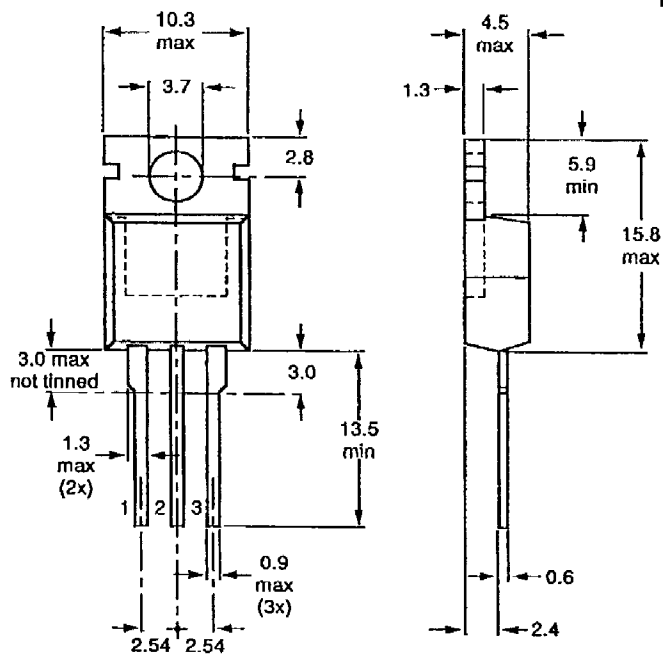
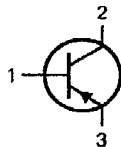
**QUICK REFERENCE DATA**

			BDT82	BDT84	BDT86	BDT88
Collector-base voltage (open emitter)	$-V_{CBO}$	max.	60	80	100	120 V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	60	80	100	120 V
Emitter-base voltage (open collector)	$-V_{EBO}$	max.	7	7	7	7 V
Collector current (d.c.)	$-I_C$	max.	15			A
Total power dissipation up to $T_{mb} = 25^\circ\text{C}$	$P_{tot}$	max.	125			W
Junction temperature	$T_j$	max.	150			$^\circ\text{C}$
D.C. current gain $-I_C = 5\text{ A}; -V_{CE} = 4\text{ V}$	$h_{FE}$	min.	40			

**MECHANICAL DATA**

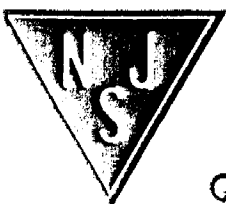
Fig. 1 TO-220.

Collector connected to case.



Dimensions in mm

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.



## RATINGS

Limiting values in accordance with the Absolute Maximum System

		BDT82	BDT84	BDT86	BDT88
Collector-base voltage (open emitter)	$-V_{CBO}$ max.	60	80	100	120 V
Collector-emitter voltage (open base)	$-V_{CEO}$ max.	60	80	100	120 V
Emitter-base voltage (open collector)	$-V_{EBO}$ max.	7	7	7	7 V
Collector current (d.c.)	$-I_C$ max.			15	A
Collector current (peak value)	$-I_{CM}$ max.			20	A
Base current (d.c.)	$-I_B$ max.			4	A
Total power dissipation up to $T_{mb} = 25\text{ }^\circ\text{C}$	$P_{tot}$ max.			125	W
Storage temperature	$T_{stg}$		-65 to +150		$^\circ\text{C}$
Junction temperature	$T_j$ max.			150	$^\circ\text{C}$
<b>THERMAL RESISTANCE</b>					
From junction to mounting base	$R_{th\ j-mb}$ max.			1	K/W
From junction to ambient	$R_{th\ j-a}$ max.			70	K/W
<b>CHARACTERISTICS</b>					
$T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified					
Collector cut-off current					
$-I_E = 0; -V_{CB} = V_{CBOmax}$	$-I_{CBO} <$			0.2	mA
$-V_{BE} = 0; -V_{CE} = 0,8 V_{CBOmax}$	$-V_{CES} <$			1	mA
Emitter cut-off current					
$-I_C = 0; -V_{EB} = 7\text{ V}$	$-I_{EBO} <$			0.1	mA
D.C. current gain*					
$-I_C = 50\text{ mA}; -V_{CE} = 10\text{ V}$	$h_{FE} >$			40	
$-I_C = 5\text{ A}; -V_{CE} = 4\text{ V}$	$h_{FE} >$			40	
Collector-emitter saturation voltage*					
$-I_C = 5\text{ A}; -I_B = 0,5\text{ A}$	$-V_{CEsat} <$			1	V*
$-I_C = 7\text{ A}; -I_B = 0,7\text{ A}$	$-V_{CEsat} <$			1,6	V*
Base-emitter voltage*					
$-I_C = 5\text{ A}; -V_{CE} = 4\text{ V}$	$-V_{BE} <$			1,5	V*
Transition frequency at $f = 1\text{ MHz}$					
$-I_C = 0,5\text{ A}; -V_{CE} = 10\text{ V}$	$f_T$ typ.			20	MHz
Second breakdown collector current					
$-V_{CE} = 50\text{ V}; t_p = 100\text{ ms}$ (non-repetitive without heatsink)	$-I_{SB} >$			2,5	A