



PNP BDT82 – BDT84 – BDT86 – BDT88

SILICON POWER TRANSISTORS

The BDT82 – BDT84 – BDT86 – BDT88 are epitaxial base transistors in a TO-220 plastic envelope.

They are intended for use in audio output stages and general amplifier and switching applications.

NPN complements are BDT81 – BDT83 – BDT85 – BDT87.

Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value	Unit
V_{CEO}	Collector-Emitter Voltage	$-I_B = 0$	BDT82	-60	V
			BDT84	-80	
			BDT86	-100	
			BDT88	-120	
V_{CBO}	Collector-Base Voltage	$-I_E = 0$	BDT82	-60	V
			BDT84	-80	
			BDT86	-100	
			BDT88	-120	
V_{EBO}	Emitter-Base Voltage	$-I_C = 0$		-7	V
I_C	Collector Current			-15	A
I_{CM}	Collector Peak Current			-20	A
I_B	Base Current			-4	A
P_t	Total Power Dissipation	@ $T_C = 25^\circ$		125	W
T_J	Junction Temperature			150	$^\circ\text{C}$
T_{Stg}	Storage Temperature			-65 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJa}	Thermal Resistance, Junction to Ambient	70	K/W
R_{thJmb}	Thermal Resistance, Junction to Mounting Base	1	K/W

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
I_{CB0}	Collector Cutoff Current	$I_E=0A, V_{CB} = -60\text{ V}$	BDT82	-	-	-0.2	mA
		$I_E=0A, V_{CB} = -80\text{ V}$	BDT84				
		$I_E=0A, V_{CB} = -100\text{ V}$	BDT86				
		$I_E=0A, V_{CB} = -120\text{ V}$	BDT88				
I_{CES}	Collector Cutoff Current	$V_{BE}=0, V_{CE} = -60V$	BDT82	-	-	-1	mA
		$V_{BE}=0, V_{CE} = -80V$	BDT84				
		$V_{BE}=0, V_{CE} = -100V$	BDT86				
		$V_{BE}=0, V_{CE} = -120V$	BDT88				
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -7\text{ V}$ $I_C=0$	BDT82	-	-	-0.1	mA
			BDT84				
			BDT86				
			BDT88				
h_{FE}	DC Current Gain (*)	$I_C = -50mA$ $V_{CE} = -10V$	BDT82	40	-	-	-
			BDT84				
			BDT86				
			BDT88				
		$I_C = -5A$ $V_{CE} = -4V$	BDT82	40	-	-	
			BDT84				
			BDT86				
			BDT88				
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage (*)	$I_C = -5A$ $I_B = -0.5A$	BDT82	-	-	-1	V
			BDT84				
			BDT86				
			BDT88				
		$I_C = -7A$ $I_B = -0.7A$	BDT82	-	-	-1.6	
			BDT84				
			BDT86				
			BDT88				
V_{BE}	Base-Emitter Voltage (*)	$I_C = -4A$ $V_{CE} = -4\text{ V}$	BDT82	-	-	-1.5	V
			BDT84				
			BDT86				
			BDT88				



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ELECTRICAL CHARACTERISTICS

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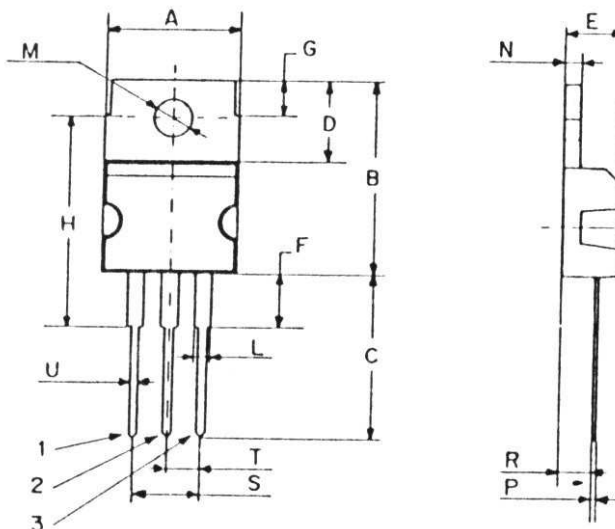
Symbol	Ratings	Test Condition(s)Sec	Min	Typ	Max	Unit
$I_{S/B}$	Second breakdown collector current	$V_{CE} = -50\text{ V}$, $t_p = 100\text{ ms}$	-2.5	-	-	A
f_T	Transition frequency	$V_{CE} = -10\text{ V}$, $I_C = -0.5\text{ A}$, $f = 1\text{ MHz}$	-	20	-	MHz
t_{on}	Turn-on time	$I_C = -7\text{ A}$ $I_{B1} = -I_{B2} = -0.7\text{ A}$	-	-	1	μs
T_{off}	Turn-off time		-	-	2	

(*) Pulse Duration = 300 μs , $\delta \leq 2\%$

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MECHANICAL DATA CASE TO-220

DIMENSIONS (mm)		
	Min.	Max.
A	9,90	10,30
B	15,65	15,90
C	13,20	13,40
D	6,45	6,65
E	4,30	4,50
F	2,70	3,15
G	2,60	3,00
H	15,75	17,15
L	1,15	1,40
M	3,50	3,70
N	-	1,37
P	0,46	0,55
R	2,50	2,70
S	4,98	5,08
T	2,49	2,54
U	0,70	0,90



Pin 1 :	Base
Pin 2 :	Collector
Pin 3 :	Emitter
Package	Collector

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