



## 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	$^\circ C$
$T_{Stg}$	Storage Temperature			-65 to +150	$^\circ C$

#### 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
$I_{CBO}$	Collector Cutoff Current	$I_E=0A, V_{CB} = -60 V$	BDT82	-	-	-0.2	mA
		$I_E=0A, V_{CB} = -80 V$	BDT84				
		$I_E=0A, V_{CB} = -100 V$	BDT86				
		$I_E=0A, V_{CB} = -120 V$	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	$V_{EB} = -7 V$ $I_C=0$	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 (*)	$I_C = -4A$ $V_{CE} = -4 V$	BDT82	-	-	-1.5	V
			BDT84				
			BDT86				
			BDT88				



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### ELECTRICAL CHARACTERISTICS

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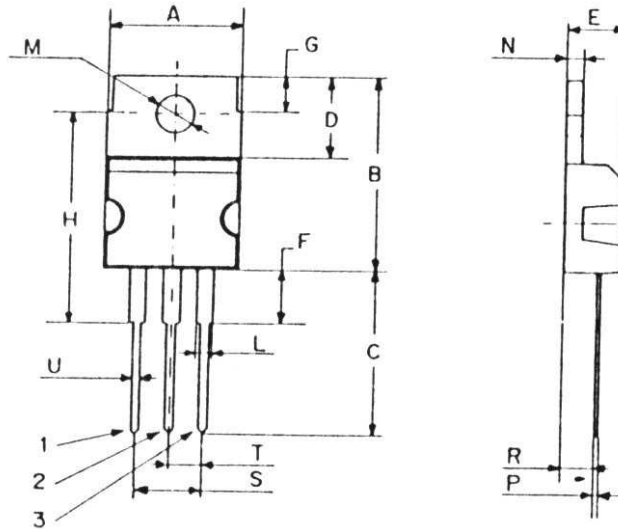
Symbol	Ratings	Test Condition(s)Sec	Min	Typ	Max	Unit
$I_{S/B}$	Second breakdown collector current	$V_{CE} = -50 \text{ V}$ , $t_p = 100 \text{ ms}$	-2.5	-	-	A
$f_T$	Transition frequency	$V_{CE} = -10 \text{ V}$ , $I_C = -0.5 \text{ A}$ , $f = 1 \text{ MHz}$	-	20	-	MHz
$t_{on}$	Turn-on time	$I_C = -7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

(\* ) Pulse Duration = 300  $\mu\text{s}$ ,  $\delta \leq 2\%$

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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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