

**PNP BDT82 – BDT84 – BDT86 – BDT88
NPN BDT81 – BDT83 – BDT85 – BDT87**

SILICON POWER TRANSISTOR

The BDT82 – BDT84 – BDT86 – BDT88 are PNP 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.

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	$-I_C = 0$	BDT82	7	V
			BDT84		
			BDT86		
			BDT88		
$-I_C$	Collector Current		BDT82	15	A
			BDT84		
			BDT86		
			BDT88		
$-I_{CM}$	Collector Peak Current		BDT82	20	A
			BDT84		
			BDT86		
			BDT88		
$-I_B$	Base Current		BDT82	4	A
			BDT84		
			BDT86		
			BDT88		
P_t	Total Power Dissipation	@ $T_C = 25^\circ$	BDT82	125	Watts
			BDT84		
			BDT86		
			BDT88		

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Symbol	Ratings		Value	Unit
T_J	Junction Temperature	BDT82	150	°C
		BDT84		
		BDT86		
		BDT88		
T_{Stg}	Storage Temperature	BDT82	-65 to +150	°C
		BDT84		
		BDT86		
		BDT88		

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

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
$-I_{CB0}$	Collector Cutoff Current	$-I_E=0A, -V_{CB}=60V$	BDT82	-	-	0.2	mA
		$-I_E=0A, -V_{CB}=80V$	BDT84	-	-	0.2	
		$-I_E=0A, -V_{CB}=100V$	BDT86	-	-	0.2	
		$-I_E=0A, -V_{CB}=120V$	BDT88	-	-	0.2	
$-I_{CES}$	Collector Cutoff Current	$-V_{BE}=0, -V_{CE}=60V$	BDT82	-	-	1	mA
		$-V_{BE}=0, -V_{CE}=80V$	BDT84	-	-	1	
		$-V_{BE}=0, -V_{CE}=100V$	BDT86	-	-	1	
		$-V_{BE}=0, -V_{CE}=120V$	BDT88	-	-	1	
$-I_{EBO}$	Emitter Cutoff Current	$-V_{EB}=7.0V, -I_C=0$	BDT82	-	-	0.1	mA
			BDT84				
			BDT86				
			BDT88				

H_{FE}	DC Current Gain (1)	$-I_C=50mA, -V_{CE}=10V$	BDT82	40	-	-	-
			BDT84				
			BDT86				
			BDT88				
		$-I_C=5A, -V_{CE}=4.0V$	BDT82	40	-	-	
			BDT84				
			BDT86				
			BDT88				
$-V_{CE(SAT)}$	Collector-Emitter saturation Voltage (1)	$-I_C=5A, -I_B=0.5A$	BDT82	-	-	1	V
			BDT84				
			BDT86				
			BDT88				
		$-I_C=7A, -I_B=0.7A$	BDT82	-	-	1.6	
			BDT84				
			BDT86				
			BDT88				

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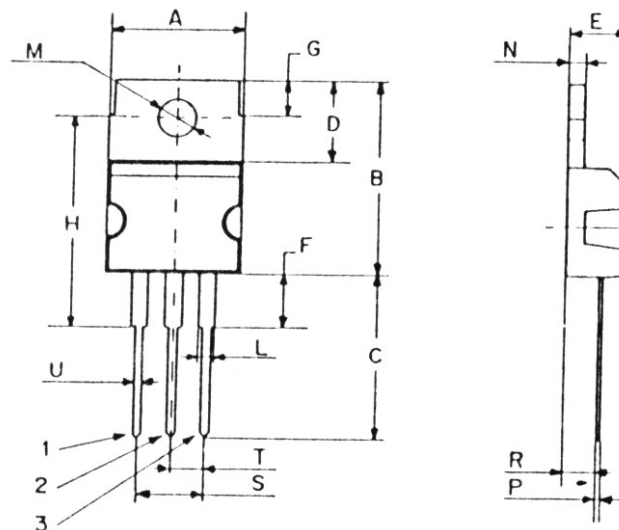
-V_{BE}	Base-Emitter voltage (1)	$-I_C=5\text{ A}, -V_{CE}=4\text{ V}$	BDT82	-	-	1.5	V
			BDT84				
			BDT86				
			BDT88				

Symbol	Ratings	Test Condition(s)Sec	Min	Typ	Mx	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	$-I_C=7\text{ A}, -I_{B1} = I_{B2} = 0.7\text{ A}$	-	-	2	

(1) Pulse Duration = 300 μs, δ ≤ 2%

MECHANICAL DATA CASE TO-220

DIMENSIONS		
	mm	inches
A	9,86	0,39
B	15,73	0,62
C	13,37	0,52
D	6,67	0,26
E	4,44	0,17
F	4,21	0,16
G	2,99	0,11
H	17,21	0,68
L	1,29	0,05
M	3,6	0,14
N	1,36	0,05
P	0,46	0,02
R	2,1	0,08
S	5	0,19
T	2,52	0,098
U	0,79	0,03



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

Information furnished is believed to be accurate and reliable. However, CS assumes no responsibility for the consequences of use of such information nor for errors that could appear.

Data are subject to change without notice.