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

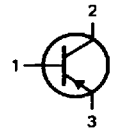
			BDT82	BDT84	BDT86	BDT88	
Collector-base voltage (open emitter)	$-V_{CBO}$	max.	60	80	100	120	V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	60	80	100	120	V
Emitter-base voltage (open collector)	$-V_{EBO}$	max.	7	7	7	7	V
Collector current (d.c.)	$-I_C$	max.		15			A
Total power dissipation up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

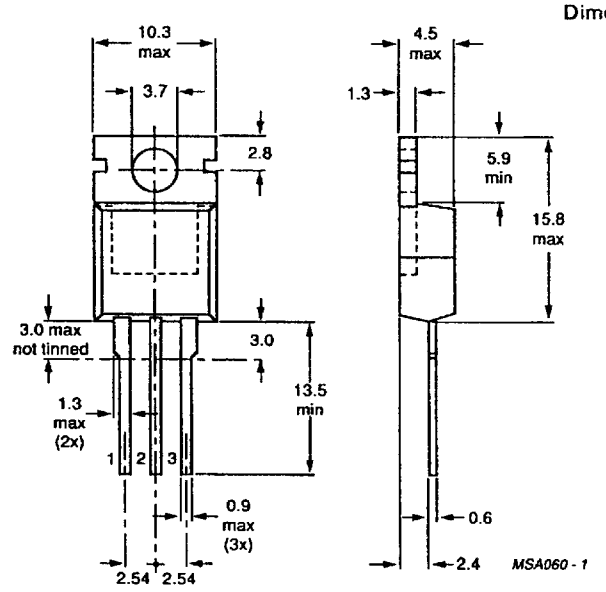
MECHANICAL DATA

Dimensions in mm

Fig. 1 TO-220.

Collector connected to case.





See also chapters Mounting instructions and Accessories

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

			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 $T_{mb} = 25\ ^oC$	P_{tot}	max.		125			W
Storage temperature	T_{stg}			−65 to + 150			°C
Junction temperature	T_j	max.		150			°C

THERMAL RESISTANCE

From junction to mounting base	$R_{th\ j\text{-}mb}$	max.	1	K/W
From junction to ambient	$R_{th\ j\text{-}a}$	max.	70	K/W

CHARACTERISTICS

$T_j = 25\ ^oC$ 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				
$-I_C = 0$; $-V_{EB} = 7$ V	$-I_{EBO}$	<	0.1	mA
D.C. current gain*				
$-I_C = 50$ mA; $-V_{CE} = 10$ V	h_{FE}	>	40	
$-I_C = 5$ A; $-V_{CE} = 4$ V		>	40	
Collector-emitter saturation voltage*				
$-I_C = 5$ A; $-I_B = 0{,}5$ A	$-V_{CEsat}$	<	1	V*
$-I_C = 7$ A; $-I_B = 0{,}7$ A		<	1,6	V*
Base-emitter voltage*				
$-I_C = 5$ A; $-V_{CE} = 4$ V	$-V_{BE}$	<	1,5	V*
Transition frequency at f = 1 MHz				
$-I_C = 0{,}5$ A; $-V_{CE} = 10$ V	f_T	typ.	20	MHz
Second breakdown collector current				
$-V_{CE} = 50$ V; $t_p = 100$ ms (non-repetitive without heatsink)	$-I_{SB}$	>	2,5	A

* Measured under pulse conditions: $t_p \leqslant 300\ \mu s$; $\delta \leqslant 2\%$.