

SILICON DARLINGTON POWER TRANSISTORS

N-P-N epitaxial base transistors in monolithic Darlington circuit for audio output stages and general purpose amplifier and switching applications. TO-220 plastic envelope. P-N-P complements are BDT64; BDT64A; BDT64B and BDT64C.

QUICK REFERENCE DATA

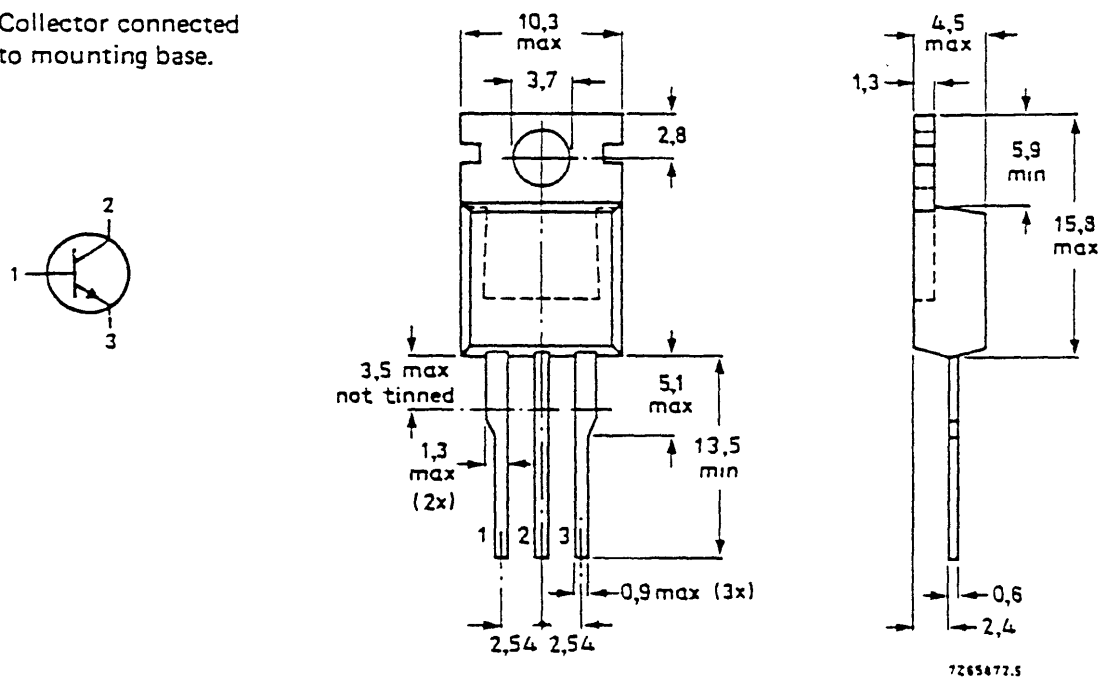
			BDT65	65A	65B	65C
Collector-base voltage (open emitter)	V_{CB0}	max.	60	80	100	120 V
Collector-emitter voltage (open base)	V_{CE0}	max.	60	80	100	120 V
Emitter-base voltage (open collector)	V_{EB0}	max.	5	5	5	5 V
Collector current (d.c.)	I_C	max.		12		A
Total power dissipation up to $T_{mb} = 25^\circ\text{C}$	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}	>		1000		

MECHANICAL DATA

Dimensions in mm

Fig. 1 TO-220AB.

Collector connected
to mounting base.



See also chapters Mounting instructions and Accessories.

BDT65; 65A
BDT65B; 65C

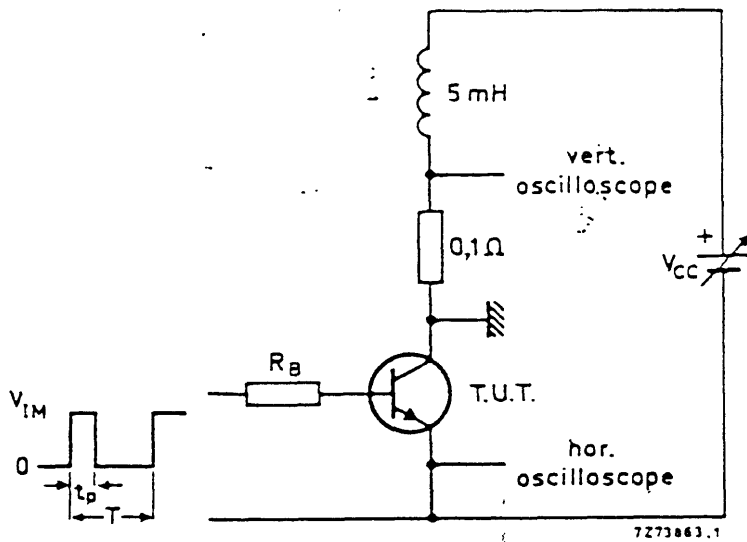


Fig. 3 Test circuit for turn-off breakdown energy.
 $V_{IM} = 12 \text{ V}$; $R_B = 270 \Omega$;
 $t_p = 1 \text{ ms}$; $\delta = 1\%$.

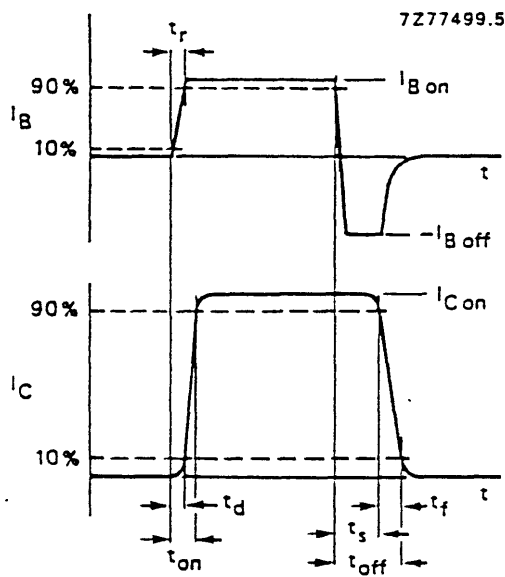
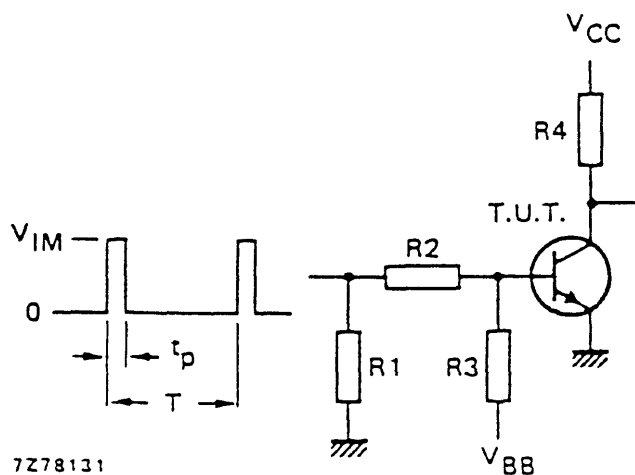
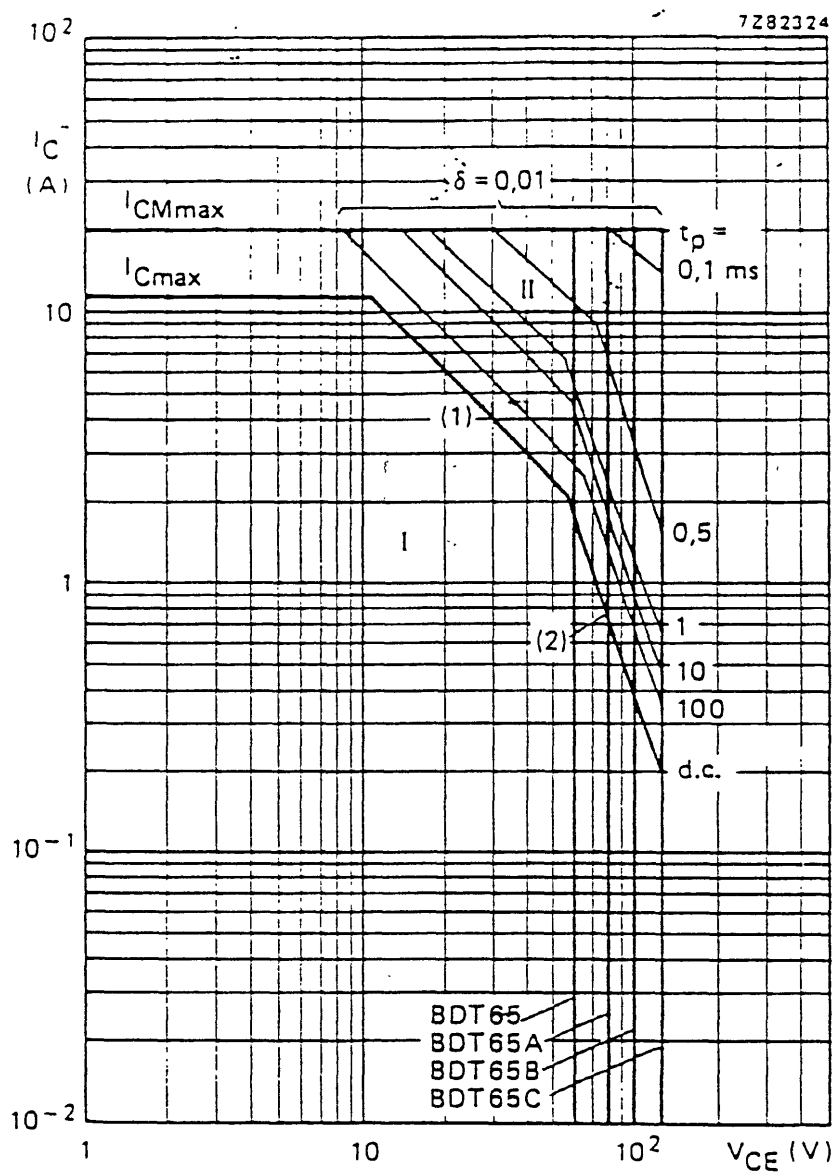


Fig. 4 Switching times waveforms.



$V_{CC} = 30 \text{ V}$
 $V_{IM} = 15 \text{ V}$
 $-V_{BB} = 4 \text{ V}$
 $R_1 = 56 \Omega$
 $R_2 = 410 \Omega$
 $R_3 = 560 \Omega$
 $R_4 = 6 \Omega$
 $t_r = t_f = 15 \text{ ns}$
 $t_p = 10 \mu\text{s}$
 $T = 500 \mu\text{s}$

Fig. 5 Switching times test circuit.

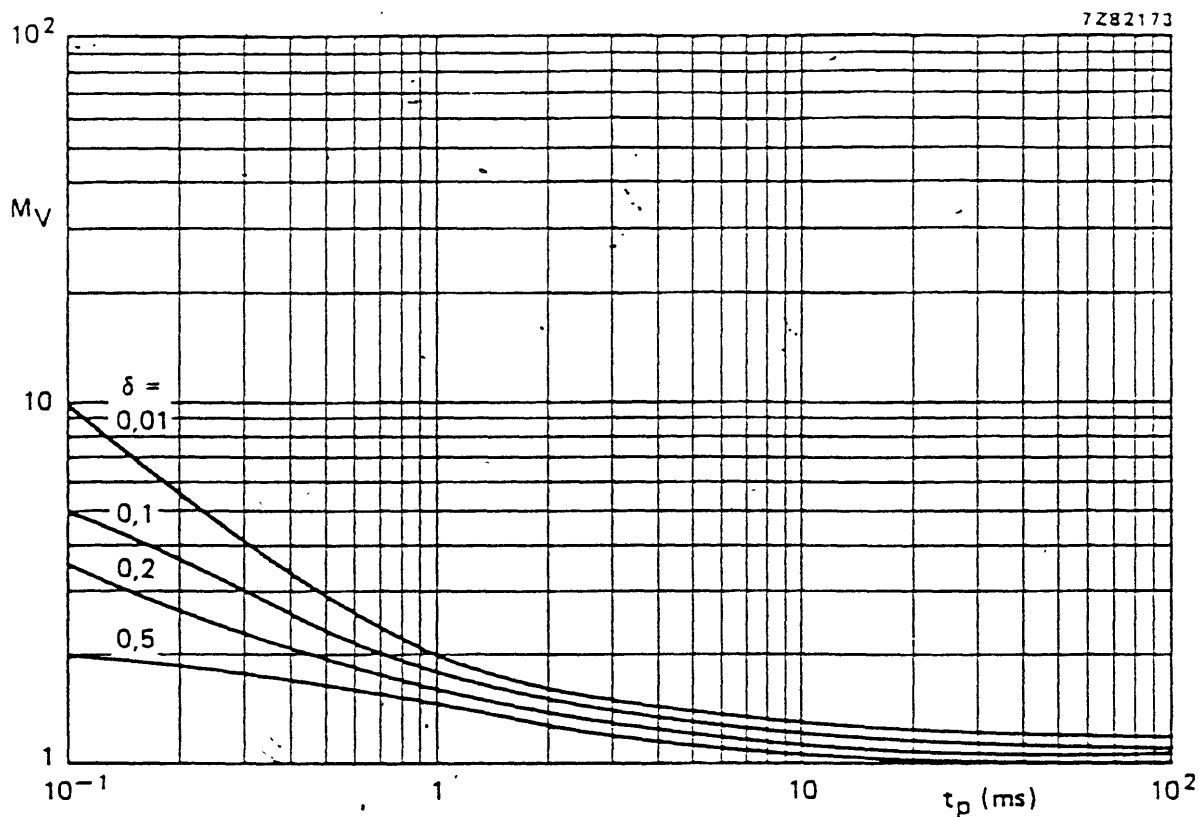
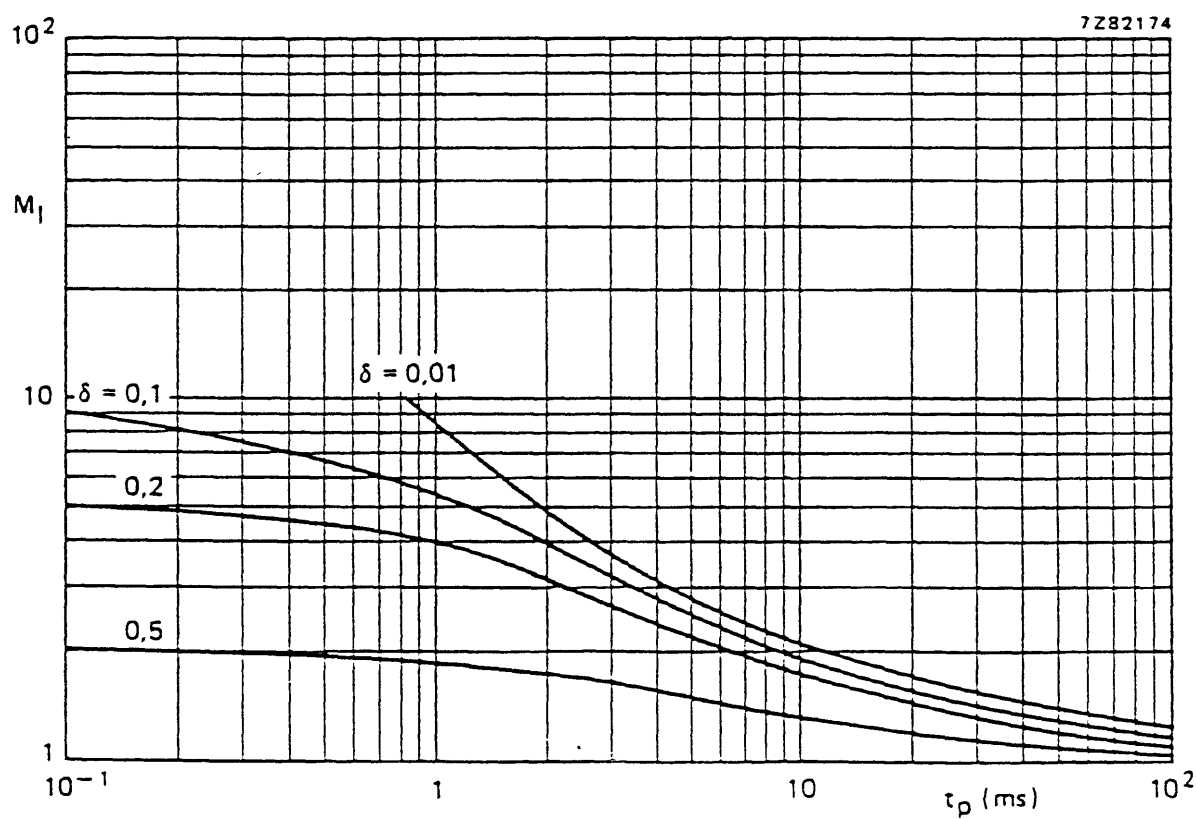
Fig. 6 Safe Operating ARea; $T_{mb} = 25\ ^\circ C$.

I Region of permissible d.c. operation.

II Permissible extension for repetitive pulse operation.

(1) $P_{tot\ max}$ and $P_{peak\ max}$ lines.

(2) Second-breakdown limits.

Fig. 10 S.B. voltage multiplying factor at the I_{Cmax} level.Fig. 11 S.B. current multiplying factor at the V_{CE0max} level.