

SILICON PLANAR DARLINGTON TRANSISTOR

N-P-N silicon planar darlington transistor in a plastic TO-92 package.
P-N-P complement is BC516.

QUICK REFERENCE DATA

Collector-emitter voltage (open base)	V_{CE0}	max.	30 V
Collector-base voltage (open emitter)	V_{CBO}	max.	40 V
Collector current	I_C	max.	400 mA
Junction temperature	T_j	max.	150 °C
Total power dissipation up to $T_{amb} = 25$ °C	P_{tot}	max.	625 mW
D.C. current gain $I_C = 20$ mA; $V_{CE} = 2$ V	h_{FE}	>	30 000
Collector-emitter saturation voltage $I_C = 100$ mA; $I_B = 0,1$ mA	V_{CEsat}	max.	1 V
Transition frequency at $f = 100$ MHz $I_C = 30$ mA; $V_{CE} = 5$ V	f_T	typ.	220 MHz

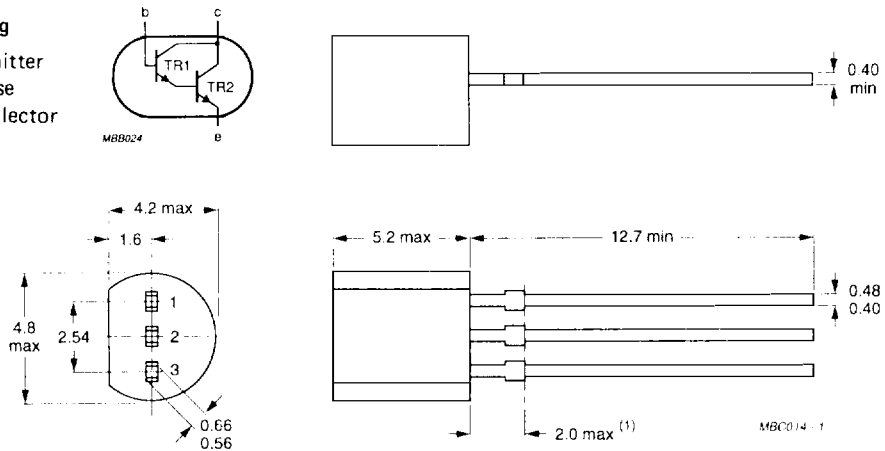
MECHANICAL DATA

Dimensions in mm

Fig. 1 TO-92.

Pinning

- 1 = emitter
- 2 = base
- 3 = collector



Note (1) Terminal dimensions within this zone are uncontrolled to allow for flow of plastic and terminal irregularities.

RATINGS

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

Collector-emitter voltage (open base)	V_{CEO}	max.	30 V
Collector-base voltage (open emitter)	V_{CBO}	max.	40 V
Emitter-base voltage (open collector)	V_{EBO}	max.	10 V
Collector current	I_C	max.	400 mA
Total power dissipation up to $T_{amb} = 25\text{ }^{\circ}\text{C}$	P_{tot}	max.	625 mW
Junction temperature	T_j	max.	150 $^{\circ}\text{C}$
Storage temperature	T_{stg}		-65 to + 150 $^{\circ}\text{C}$

THERMAL RESISTANCE

From junction to ambient in free air	$R_{th\ j-a}$	max.	200 K/W
From junction to case	$R_{th\ j-c}$	max.	90 K/W

CHARACTERISTICS $T_j = 25\text{ }^{\circ}\text{C}$ unless otherwise stated

Collector cut-off current $V_{CB} = 30\text{ V}$	I_{CBO}	max.	100 nA
Collector-emitter breakdown voltage $I_C = 2\text{ mA}$	$V_{(BR)CEO}$	min.	30 V
Collector-base breakdown voltage	$V_{(BR)CBO}$	min.	40 V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	min.	10 V
D.C. current gain $I_C = 20\text{ mA}; V_{CE} = 2\text{ V}$	h_{FE}	>	30 000
Collector-emitter saturation voltage $I_C = 100\text{ mA}; I_B = 0,1\text{ mA}$	V_{CEsat}	max.	1 V
Base-emitter voltage $I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$	V_{BE}	max.	1,4 V
Transition frequency at $f = 100\text{ MHz}$ $I_C = 30\text{ mA}; V_{CE} = 5\text{ V}$	f_T	typ.	220 MHz