PHILIPS INTERNATIONAL 56E D 7110826 0042644 T14 PHIN

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SILICON PLANAR TRANSISTOR

N-P-N transistor in a TO-39 metal envelope designed for medium speed, saturated and non-saturated switching applications for industrial service.

QUICK REFERENCE DATA

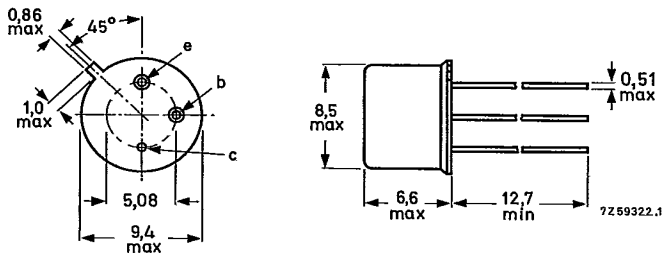
Collector-base voltage (open emitter)	V_{CBO}	max.	60 V
Collector-emitter voltage (open base)	V_{CEO}	max.	40 V
Collector current (d.c.)	I_C	max.	700 mA
Total power dissipation up to T_{case} = 25 °C	P_{tot}	max.	5,0 W
Junction temperature	T_j	max.	200 °C
D.C. current gain I_C = 150 mA; V_{CE} = 10 V	h_{FE}		50 to 250
Transition frequency at f = 20 MHz I_C = 50 mA; V_{CE} = 10 V	f_T	>	100 MHz

MECHANICAL DATA

Dimensions in mm

Fig. 1 TO-39.

Collector connected to case



Maximum lead diameter is guaranteed only for 12,7 mm.

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RATINGS

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

Collector-base voltage (open emitter)	V_{CBO}	max.	60 V
Collector-emitter voltage (open base)*	V_{CEO}	max.	40 V
Emitter-base voltage (open collector)	V_{EBO}	max.	5 V
Collector current (d.c.)	I_C	max.	700 mA
Total power dissipation up to T_{case} = 25 °C	P_{tot}	max.	5,0 W
Storage temperature range	T_{stg}		−65 to + 150 °C
Junction temperature	T_j	max.	200 °C

THERMAL RESISTANCE

From junction to case	$R_{th\ j\text{-}c}$	=	35 K/W

CHARACTERISTICS

T_{amb} = 25 °C

Collector cut-off current V_{CE} = 30 V; $-V_{BE}$ = 1,5 V	I_{CEX}	<	0,25 μA
Emitter cut-off current I_C = 0; V_{EB} = 4 V	I_{EBO}	<	0,25 μA
Collector-base breakdown voltage open emitter; I_C = 100 μA	$V_{(BR)CBO}$	>	60 V
Collector-emitter breakdown voltage** open emitter; I_C = 100 μA	$V_{(BR)CEO}$	>	40 V
I_C = 100 mA; R_{BE} = 10 Ω	$V_{(BR)CER}$	>	50 V
Emitter-base breakdown voltage open collector; I_E = 100 μA	$V_{(BR)EBO}$	>	5 V
Base-emitter voltage I_C = 150 mA; V_{CE} = 2,5 V	V_{BE}	<	1,7 V
Saturation voltages I_C = 150 mA; I_B = 15 mA	V_{CEsat} V_{BEsat}	< <	1,4 V 1,7 V
D.C. current gain I_C = 150 mA; V_{CE} = 2,5 V I_C = 150 mA; V_{CE} = 10 V**	h_{FE} h_{FE}	>	25 50 to 250
Collector capacitance at f = 140 kHz $I_E = I_e$ = 0; V_{CB} = 10 V	C_c	<	15 pF
Emitter capacitance at f = 140 kHz $I_C = I_c$ = 0; V_{EB} = 0,5 V	C_e	<	80 pF
Transition frequency at f = 20 MHz I_C = 50 mA; V_{CE} = 10 V	f_T	>	100 MHz

* For I_C = 0 to 100 mA (pulse conditions): t_p = 300 μs; δ = 0,018, 0 to 700 mA for shorter pulses.
** Measured under pulse conditions to avoid excessive dissipation: t_p = 300 μs; δ = 0,018.

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