Silicon planar epitaxial transistor 2N5680

PHILIPS INTERNATIONAL 56E D 7110826 0042692 777 PHIN
T-27-23

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$-V_{CBO}$	collector-base voltage		–	120	V
$-V_{CEO}$	collector-emitter voltage		–	120	V
$-I_C$	collector current		–	1	A
P_{tot}	total power dissipation	$T_{case} \leq 25$ °C	–	10	W
		$T_{amb} \leq 25$ °C	–	1	W
T_j	junction temperature		–	200	°C
h_{FE}	current gain	$-V_{CE} = 2$ V; $-I_C = 250$ mA	40	150	
f_T	transition frequency	$-V_{CE} = 10$ V; $-I_C = 100$ mA	30	–	MHz
$-V_{CEsat}$	collector-emitter saturation voltage	$-I_B = 25$ mA; $-I_C = 250$ mA	–	0.6	V

PINNING - TO-39

Collector connected to case.

PIN	DESCRIPTION
1	emitter
2	base
3	collector

PIN CONFIGURATION

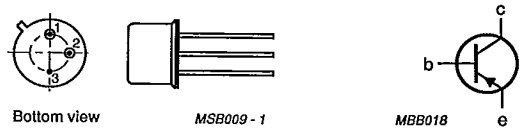

Fig.1 Simplified outline and symbol.

LIMITING VALUES

In accordance with the Absolute Maximum System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$-V_{CBO}$	collector-base voltage	$I_E = 0$	–	120	V
$-V_{CEO}$	collector-emitter voltage	$I_B = 0$	–	120	V
$-V_{EBO}$	emitter-base voltage	$I_C = 0$	–	4	V
$-I_C$	collector current		–	1	A
$-I_B$	base current		–	0.5	A
P_{tot}	total power dissipation	$T_{case} \leq 25$ °C	–	10	W
		$T_{amb} \leq 25$°C	–	1	W
T_{stg}	storage temperature range		–65	200	°C
T_j	junction temperature		–	200	°C

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THERMAL RESISTANCE

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j\text{-}a}$	from junction to ambient	175	K/W
$R_{th\ j\text{-}c}$	from junction to case	17.5	K/W

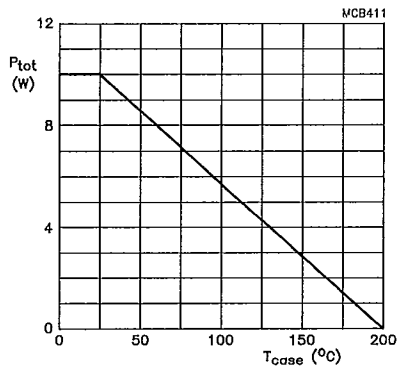

Fig.2 Total power dissipation as a function of case temperature.

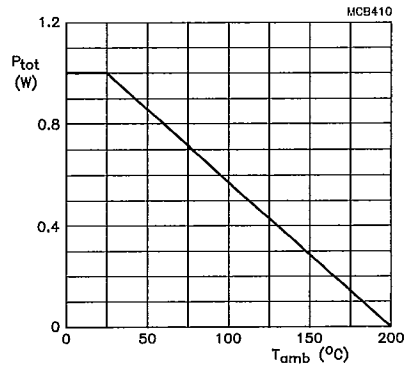

Fig.3 Total power dissipation as a function of ambient temperature.

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CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$-V_{(BR)CEO}$	collector-emitter breakdown voltage	$I_B = 0$ $-I_C = 10$ mA	120	–	V
$-I_{CBO}$	collector-base cut-off current	$I_E = 0$ $-V_{CB} = 120$ V	–	1	µA
$-I_{CEO}$	collector-emitter cut-off current	$I_B = 0$ $-V_{CE} = 80$ V	–	10	µA
$-I_{CEX}$	collector-emitter cut-off current	$V_{EB} = 1.5$ V $-V_{CE} = 120$ V	–	1	µA
		$V_{EB} = 1.5$ V $-V_{CE} = 120$ V $T_{case} = 150$ °C	–	1	mA
$-I_{EBO}$	emitter-base cut-off current	$I_C = 0$ $-V_{EB} = 4$ V	–	1	µA
$-V_{CEsat}$	collector-emitter saturation voltage	$-I_B = 25$ mA $-I_C = 250$ mA	–	0.6	V
		$-I_B = 50$ mA $-I_C = 500$ mA	–	1	V
		$-I_B = 200$ mA $-I_C = 1$ A	–	2	V
$-V_{BEsat}$	base-emitter saturation voltage	$-I_B = 25$ mA $-I_C = 250$ mA	–	1	V
h_{FE}	current gain	$-V_{CE} = 2$ V $-I_C = 250$ mA	40	150	
		$-V_{CE} = 2$ V $-I_C = 1$ A	5	–	
h_{fe}	small signal current gain	$-V_{CE} = 1.5$ V $-I_C = 200$ mA f = 1 kHz	40	–	
f_T	transition frequency	$-V_{CE} = 10$ V $-I_C = 100$ mA f = 10 MHz	30	–	MHz
C_c	collector capacitance	$-V_{CB} = 20$ V $I_E = 0$ f = 1 MHz	–	50	pF

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PACKAGE OUTLINE

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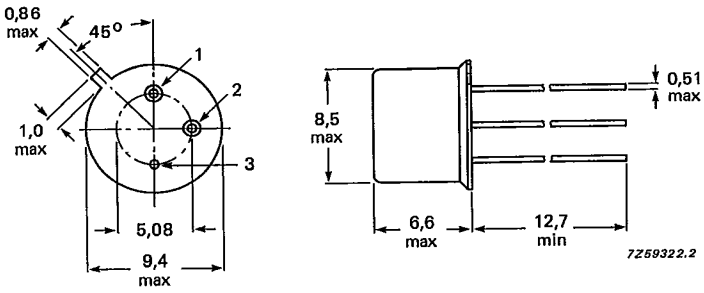

Dimensions in mm.

Fig.4 TO-39.

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