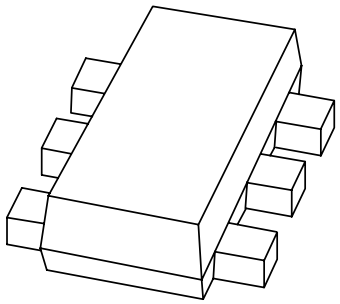
DATA SHEET



PEMB10

PNP resistor-equipped double transistor R1 = 2.2 kΩ, R2 = 47 kΩ

Preliminary specification

2001 Sep 14

Philips
Semiconductors

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PNP resistor-equipped double transistor R1 = 2.2 kΩ, R2 = 47 kΩ

PEMB10

FEATURES

- 300 mW total power dissipation
- Very small 1.6 mm × 1.2 mm × 0.55 mm ultra thin package
- Excellent coplanarity due to straight leads
- Reduces number of components as replacement of two SC-75/SC-89 packaged transistors
- Reduces required board space
- Reduces pick and place costs.

APPLICATIONS

- General purpose switching and amplification
- Inverter and interface circuits
- Circuit driver.

DESCRIPTION

PNP resistor-equipped double transistor in a SOT666 plastic package.

MARKING

TYPE NUMBER	MARKING CODE
PEMB10	Z5

PINNING

PIN	DESCRIPTION	
1, 4	emitter	TR1; TR2
2, 5	base	TR1; TR2
6, 3	collector	TR1; TR2

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
V_{CEO}	collector-emitter voltage	–50	V
I_{CM}	peak collector current	–100	mA
TR1	PNP	–	–
TR2	PNP	–	–
R1	bias resistor	2.2	kΩ
R2	bias resistor	47	kΩ

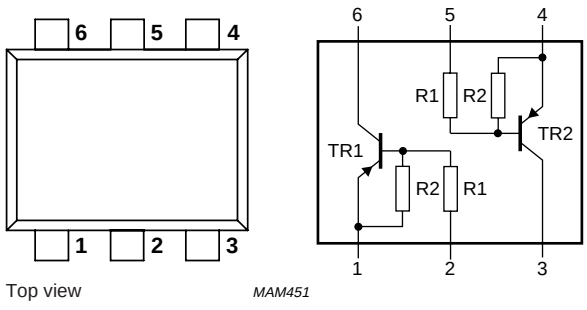

Fig.1 Simplified outline (SOT666) and symbol.

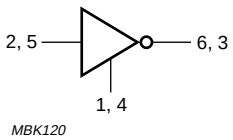

Fig.2 Equivalent inverter symbol.

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per transistor					
V_{CBO}	collector-base voltage	open emitter	–	–50	V
V_{CEO}	collector-emitter voltage	open base	–	–50	V
V_{EBO}	emitter-base voltage	open collector	–	–10	V
V_I	input voltage				
	positive		–	+12	V
	negative		–	–5	V
I_O	output current (DC)		–	–100	mA
I_{CM}	peak collector current		–	–100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C; note 1	–	200	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C
Per device					
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C; note 1	–	300	mW

Note

1. Transistor mounted on an FR4 printed-circuit board.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	notes 1 and 2	416	K/W

Notes

1. Transistor mounted on an FR4 printed-circuit board.
2. The only recommended soldering method is reflow soldering.

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Per transistor						
I_{CBO}	collector cut-off current	I_E = 0; V_{CB} = –50 V	–	–	–100	nA
I_{CEO}	collector cut-off current	I_B = 0; V_{CE} = –50 V	–	–	–1	µA
		I_B = 0; V_{CE} = –30 V; T_j = 150 °C	–	–	–50	µA
I_{EBO}	emitter cut-off current	I_C = 0; V_{EB} = –5 V	–	–	–180	µA
h_{FE}	DC current gain	I_C = –10 mA; V_{CE} = –5 V	100	–	–	
V_{CEsat}	collector-emitter saturation voltage	I_C = –5 mA; I_B = –0.25 mA	–	–	–100	mV
$V_{i(off)}$	input-off voltage	I_C = –100 µA; V_{CE} = –5 V	–	–0.6	–0.5	V
$V_{i(on)}$	input-on voltage	I_C = –5 mA; V_{CE} = –0.3 V	–1.1	–0.75	–	V
R1	input resistor		1.54	2.2	2.86	kΩ
$\frac{R2}{R1}$	resistor ratio		17	21	26	
C_c	collector capacitance	$I_E = i_e$ = 0; V_{CB} = –10 V; f = 1 MHz	–	–	3	pF

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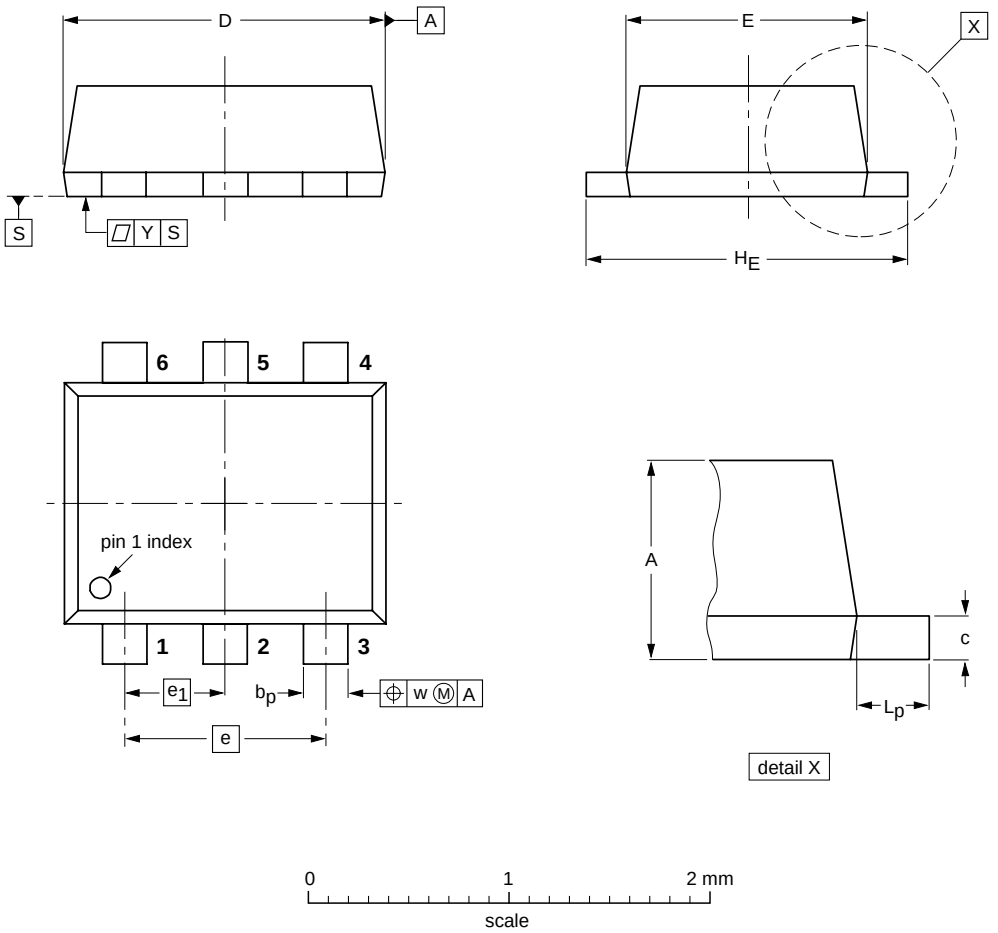
PEMB10

PACKAGE OUTLINE

Plastic surface mounted package; 6 leads **SOT666**



DIMENSIONS (mm are the original dimensions)

UNIT	A	b_p	c	D	E	e	e_1	H_E	L_p	w	y
mm	0.6 0.5	0.27 0.17	0.18 0.08	1.7 1.5	1.3 1.1	1.0	0.5	1.7 1.5	0.3 0.1	0.1	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT666						~~01-01-04~~ 01-08-27

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DATA SHEET STATUS(1)	PRODUCT STATUS(2)	DEFINITIONS
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