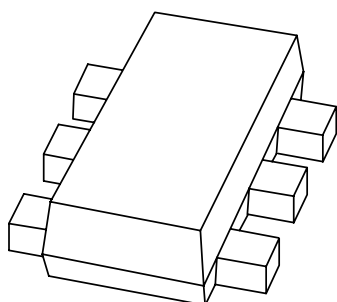


DATA SHEET



PEMB2

PNP resistor-equipped double
transistor $R1 = 47\text{ k}\Omega$, $R2 = 47\text{ k}\Omega$

Product specification

2001 Sep 14

PNP resistor-equipped double transistor

R1 = 47 kΩ, R2 = 47 kΩ

PEMB2

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

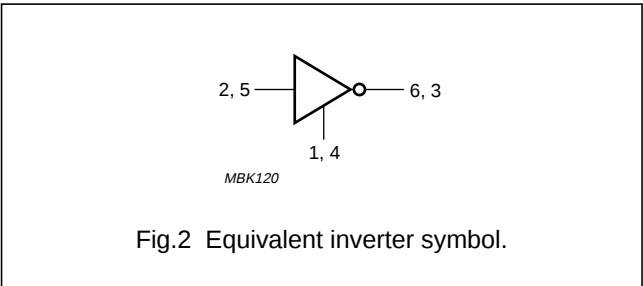
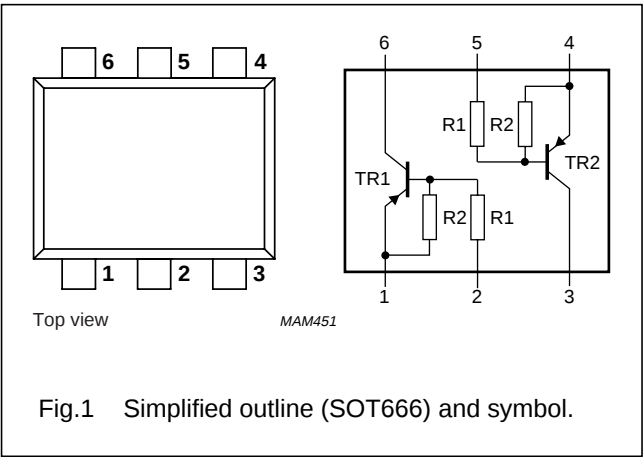
TYPE NUMBER	MARKING CODE
PEMB2	B2

PINNING

PIN	DESCRIPTION	
1, 4	emitter	TR1; TR2
2, 5	base	TR1; TR2
3, 6	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	47	kΩ
R2	bias resistor	47	kΩ



PNP resistor-equipped double transistor

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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		–	+10	V
	negative		–	–40	V
I _O	output current (DC)		–	–100	mA
I _{CM}	peak collector current		–	–100	mA
P _{tot}	total power dissipation	T _{amb} ≤ 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} ≤ 25 °C; note 1	–	300	mW

Note

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

PNP resistor-equipped double transistor

R1 = 47 k Ω , R2 = 47 k Ω

PEMB2

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to ambient	note 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	μ A
		I _B = 0; V _{CE} = -30 V; T _j = 150 °C	–	–	-50	μ A
I _{EBO}	emitter cut-off current	I _C = 0; V _{EB} = -5 V	–	–	-90	μ A
h _{FE}	DC current gain	I _C = -5 mA; V _{CE} = -5 V	80	–	–	
V _{CEsat}	collector-emitter saturation voltage	I _C = -10 mA; I _B = -0.5 mA	–	–	-150	mV
V _{i(off)}	input-off voltage	I _C = -100 μ A; V _{CE} = -5 V	–	1.2	0.8	V
V _{i(on)}	input-on voltage	I _C = -2 mA; V _{CE} = -0.3 V	3	1.6	–	V
R1	input resistor		33	47	61	k Ω
$\frac{R2}{R1}$	resistor ratio		0.8	1	1.2	
C _c	collector capacitance	I _E = I _e = 0; V _{CB} = -10 V; f = 1 MHz	–	–	3	pF

PNP resistor-equipped double transistor

$R1 = 47\text{ k}\Omega$, $R2 = 47\text{ k}\Omega$

PEMB2

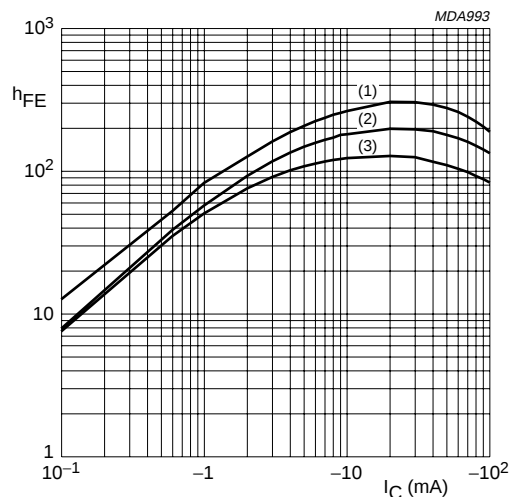
 $V_{CE} = -5\text{ V}$.(1) $T_{amb} = 150\text{ }^{\circ}\text{C}$.(2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.(3) $T_{amb} = -40\text{ }^{\circ}\text{C}$.

Fig.3 DC current gain as a function of collector current; typical values.

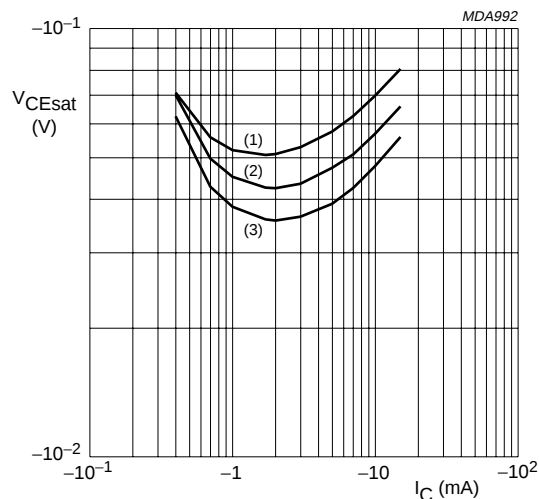
 $I_C/I_B = 20$.(1) $T_{amb} = 100\text{ }^{\circ}\text{C}$.(2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.(3) $T_{amb} = -40\text{ }^{\circ}\text{C}$.

Fig.4 Collector-emitter saturation voltage as a function of collector current; typical values.

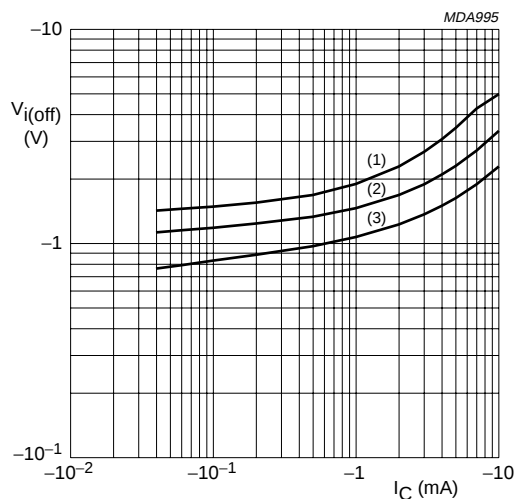
 $V_{CE} = -5\text{ V}$.(1) $T_{amb} = -40\text{ }^{\circ}\text{C}$.(2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.(3) $T_{amb} = 100\text{ }^{\circ}\text{C}$.

Fig.5 Input-off voltage as a function of collector current; typical values.

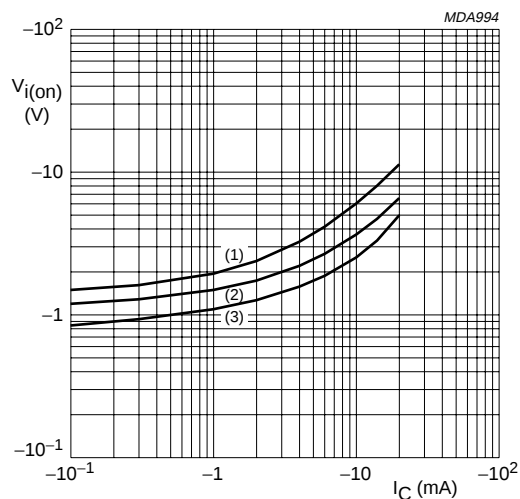
 $V_{CE} = -0.3\text{ V}$.(1) $T_{amb} = -40\text{ }^{\circ}\text{C}$.(2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.(3) $T_{amb} = 100\text{ }^{\circ}\text{C}$.

Fig.6 Input-on voltage as a function of collector current; typical values.

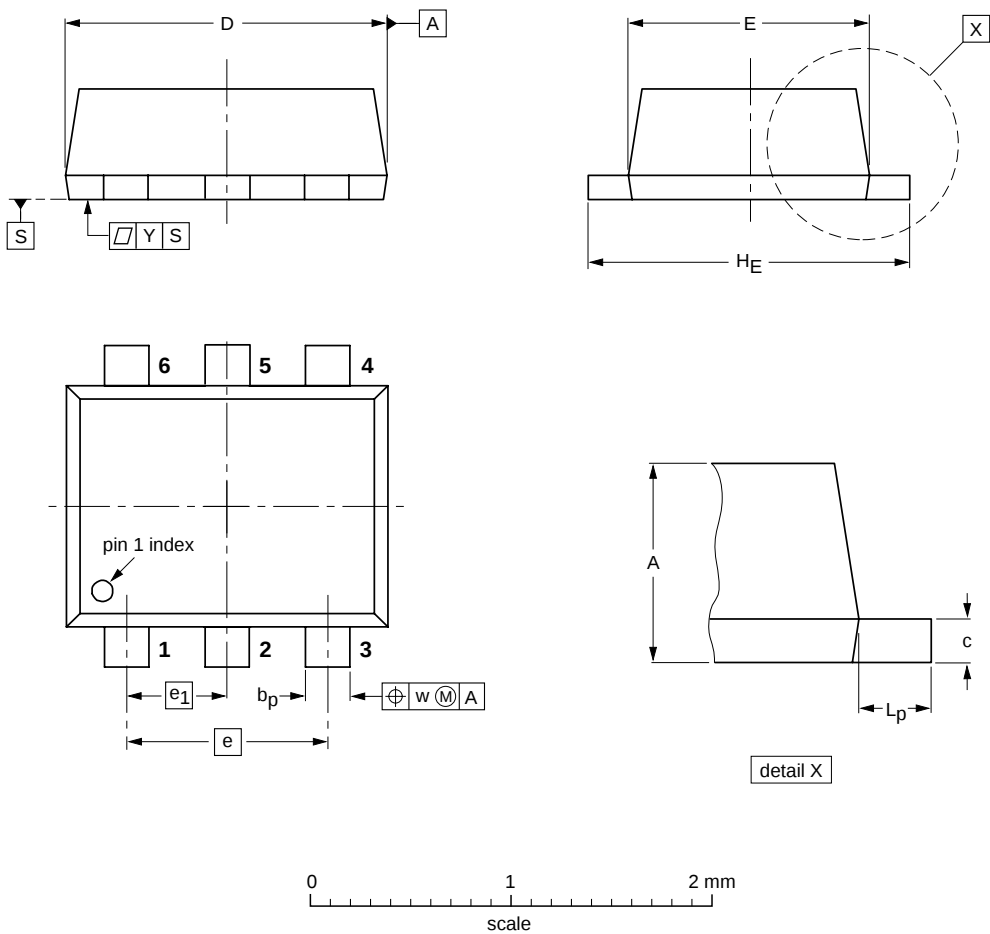
PNP resistor-equipped double transistor
R1 = 47 kΩ, R2 = 47 kΩ

PEMB2

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

PNP resistor-equipped double transistor

R1 = 47 kΩ, R2 = 47 kΩ

PEMB2

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For additional information please visit **<http://www.semiconductors.philips.com>**. Fax: **+31 40 27 24825**

For sales offices addresses send e-mail to: **sales.addresses@www.semiconductors.philips.com**.

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