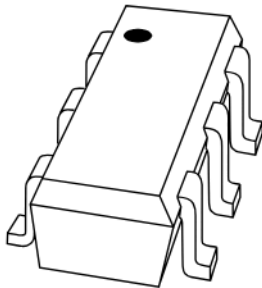


DATA SHEET



PUMB3

PNP resistor-equipped double
transistor; $R1 = 4.7 \text{ k}\Omega$

Product specification

2001 Sep 19

PNP resistor-equipped double transistor; R1 = 4.7 kΩ

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FEATURES

- Transistors with built-in bias resistor R1 (typ. 4.7 kΩ)
- No mutual interference between the transistors
- Simplification of circuit design
- Reduces number of components and board space.

APPLICATIONS

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

DESCRIPTION

PNP resistor-equipped double transistor in an SC-88 (SOT363) plastic package.

MARKING

TYPE NUMBER	MARKING CODE ⁽¹⁾
PUMB3	B5*

Note

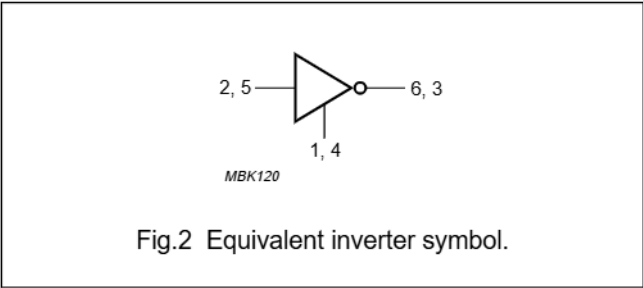
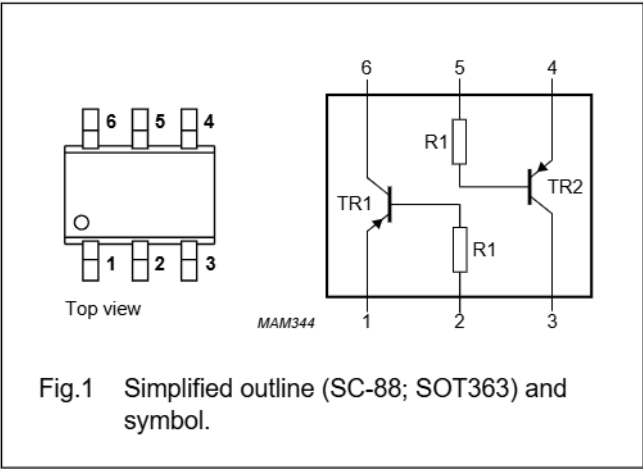
1. * = p: Made in Hong Kong.
* = t: Made in Malaysia.

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	4.7	kΩ



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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.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to ambient	note 1	416	K/W

Note

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

PNP resistor-equipped double transistor; $R_1 = 4.7 \text{ k}\Omega$

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CHARACTERISTICS

 $T_{\text{amb}} = 25 \text{ }^\circ\text{C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Per transistor						
I_{CBO}	collector-base cut-off current	$V_{\text{CB}} = -50 \text{ V}; I_{\text{E}} = 0$	–	–	–100	nA
I_{CEO}	collector-emitter cut-off current	$V_{\text{CE}} = -30 \text{ V}; I_{\text{B}} = 0$	–	–	–1	μA
		$V_{\text{CE}} = -30 \text{ V}; I_{\text{B}} = 0; T_{\text{j}} = 150 \text{ }^\circ\text{C}$	–	–	–50	μA
I_{EBO}	emitter-base cut-off current	$V_{\text{EB}} = -5 \text{ V}; I_{\text{C}} = 0$	–	–	–100	nA
h_{FE}	DC current gain	$V_{\text{CE}} = -5 \text{ V}; I_{\text{C}} = -1 \text{ mA}$	200	–	–	
V_{CEsat}	saturation voltage	$I_{\text{C}} = -5 \text{ mA}; I_{\text{B}} = -0.25 \text{ mA}$	–	–	–100	mV
R_1	input resistor		3.3	4.7	6.1	$\text{k}\Omega$
C_{c}	collector capacitance	$I_{\text{E}} = i_{\text{e}} = 0; V_{\text{CB}} = -10 \text{ V};$ $f = 1 \text{ MHz}$	–	–	3	pF

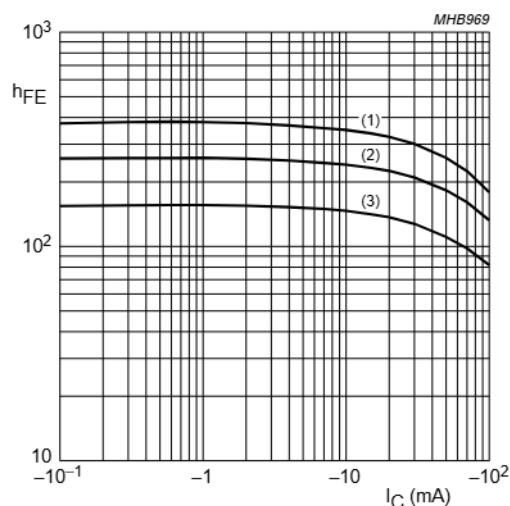
 $V_{\text{CE}} = -5 \text{ V}.$ (1) $T_{\text{amb}} = 100 \text{ }^\circ\text{C}.$ (2) $T_{\text{amb}} = 25 \text{ }^\circ\text{C}.$ (3) $T_{\text{amb}} = -40 \text{ }^\circ\text{C}.$

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

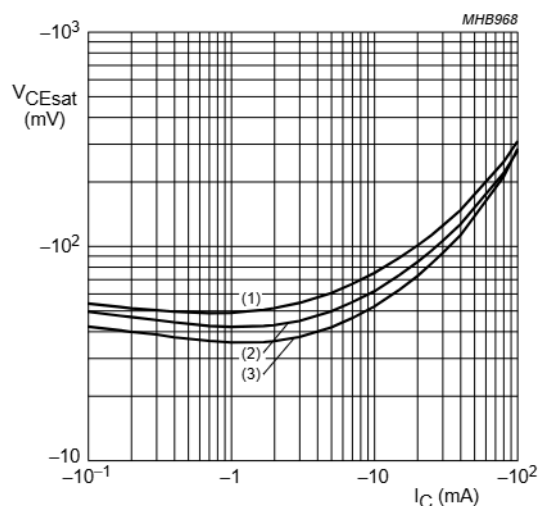
 $I_{\text{C}}/I_{\text{B}} = 20.$ (1) $T_{\text{amb}} = 100 \text{ }^\circ\text{C}.$ (2) $T_{\text{amb}} = 25 \text{ }^\circ\text{C}.$ (3) $T_{\text{amb}} = -40 \text{ }^\circ\text{C}.$

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

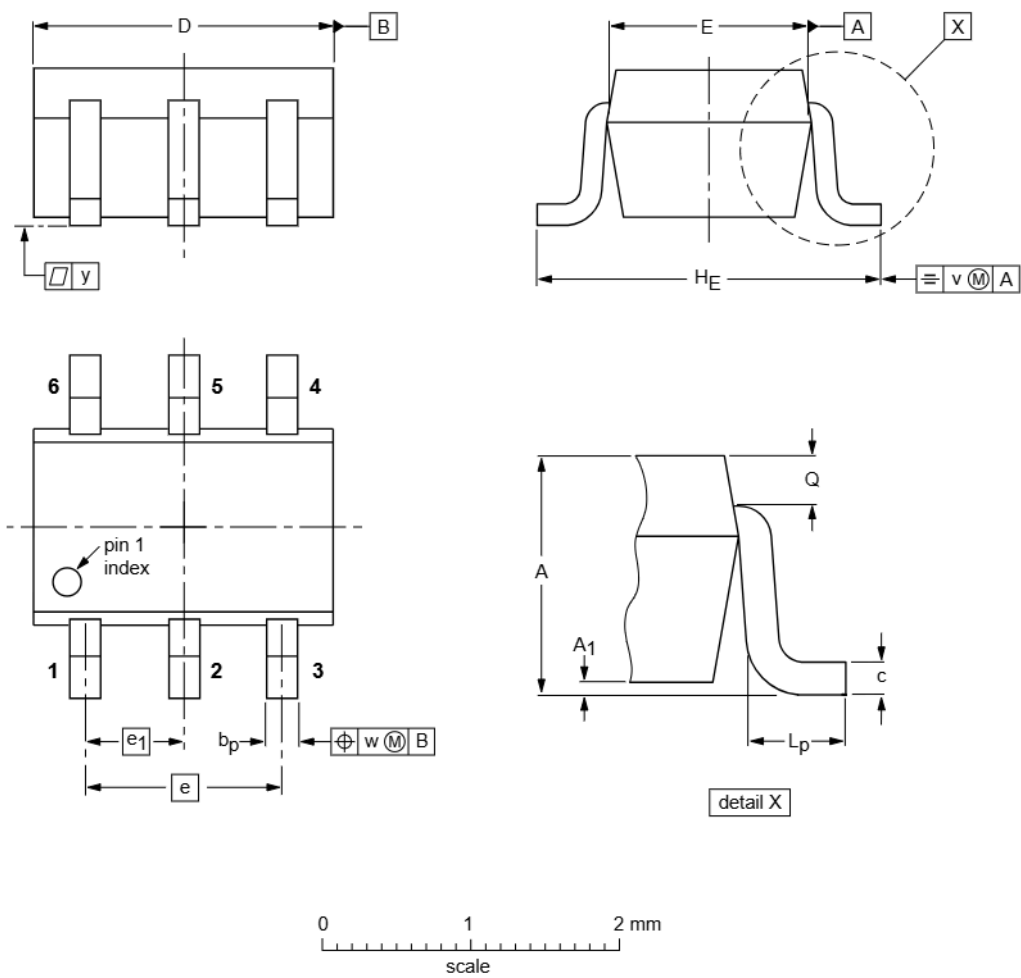
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PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT363



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w	y
mm	1.1 0.8	0.1	0.30 0.20	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.25 0.15	0.2	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT363			SC-88			97-02-28

PNP resistor-equipped double transistor; R1 = 4.7 kΩ

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