

Important notice

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Should be replaced with:

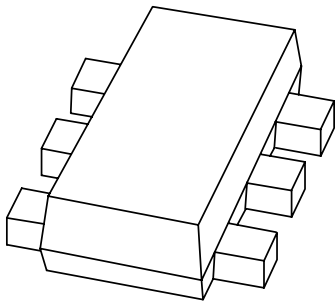
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If you have any questions related to the data sheet, please contact our nearest sales office via e-mail or telephone (details via salesaddresses@nexperia.com). Thank you for your cooperation and understanding,

Kind regards,

Team Nexperia

DATA SHEET



PEMX1

NPN general purpose double
transistor

Product data sheet
Supersedes data of 2001 Aug 30

2001 Nov 07



NPN general purpose double transistor

PEMX1

FEATURES

- 300 mW total power dissipation
- Very small 1.6 mm x 1.2 mm ultra thin package
- Excellent coplanarity due to straight leads
- Replaces two SC-75/SC-89 packaged transistors on same PCB area
- Reduced required PCB area
- Reduced pick and place costs.

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

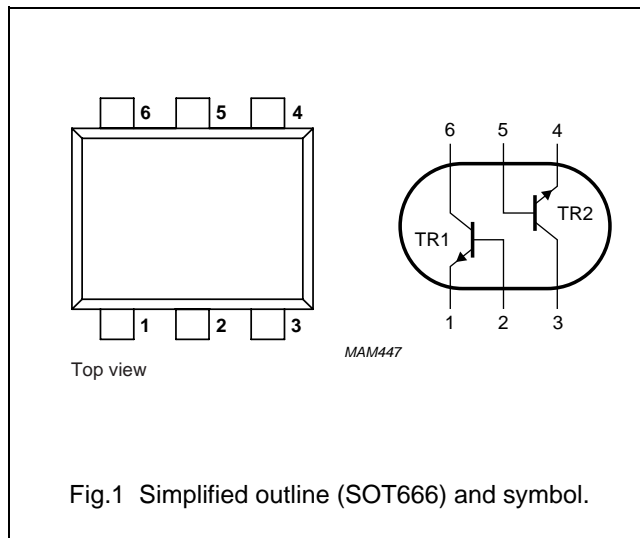
NPN double transistor pair in a SOT666 plastic package.
PNP complement: PENT1.

MARKING

TYPE NUMBER	MARKING CODE
PEMX1	ZZ

PINNING

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



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	–	40	V
V _{EBO}	emitter-base voltage	open collector	–	5	V
I _C	collector current (DC)		–	100	mA
I _{CM}	peak collector current		–	200	mA
I _{BM}	peak base current		–	200	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.

NPN general purpose double transistor

PEMX1

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	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 is reflow soldering.

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per transistor					
I_{CBO}	collector-base cut-off current	$V_{CB} = 30\text{ V}; I_E = 0$	–	100	nA
		$V_{CB} = 30\text{ V}; I_E = 0; T_j = 150\text{ °C}$	–	10	μA
I_{EBO}	emitter-base cut-off current	$V_{EB} = 4\text{ V}; I_C = 0$	–	100	nA
h_{FE}	DC current gain	$V_{CE} = 6\text{ V}; I_C = 1\text{ mA}$	120	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 50\text{ mA}; I_B = 5\text{ mA}; \text{note 1}$	–	200	mV
C_c	collector capacitance	$V_{CB} = 12\text{ V}; I_E = I_e = 0; f = 1\text{ MHz}$	–	1.5	pF
f_T	transition frequency	$I_C = 2\text{ mA}; V_{CE} = 12\text{ V}; f = 100\text{ MHz}$	100	–	MHz

Note

1. Pulse test: $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$.

NPN general purpose double transistor

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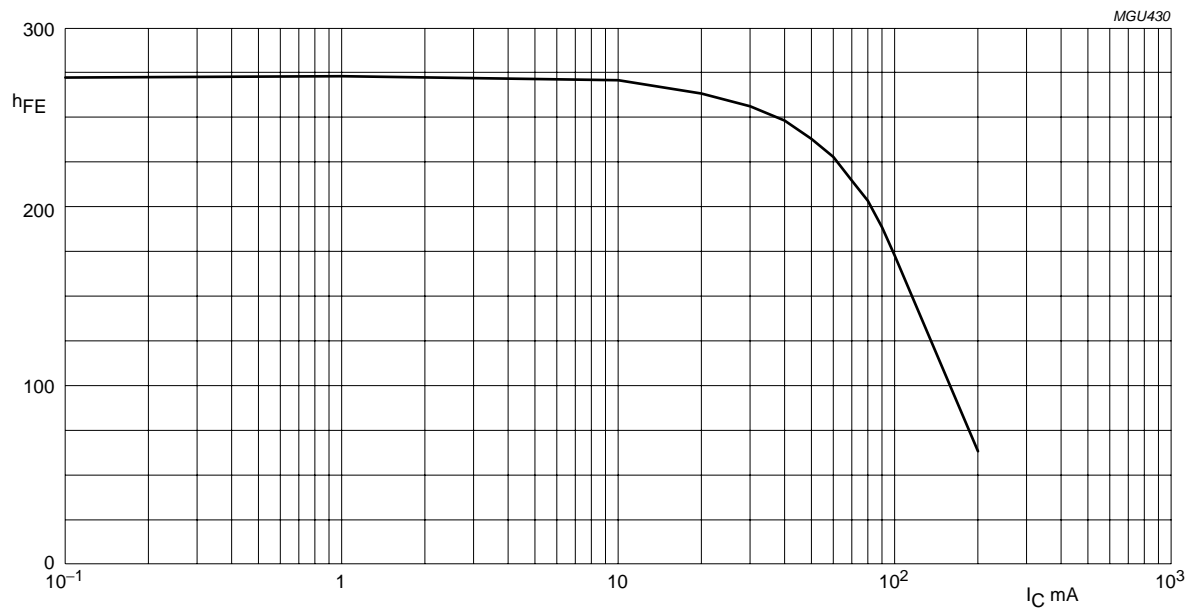


Fig.2 DC current gain as a function of collector current; typical values.

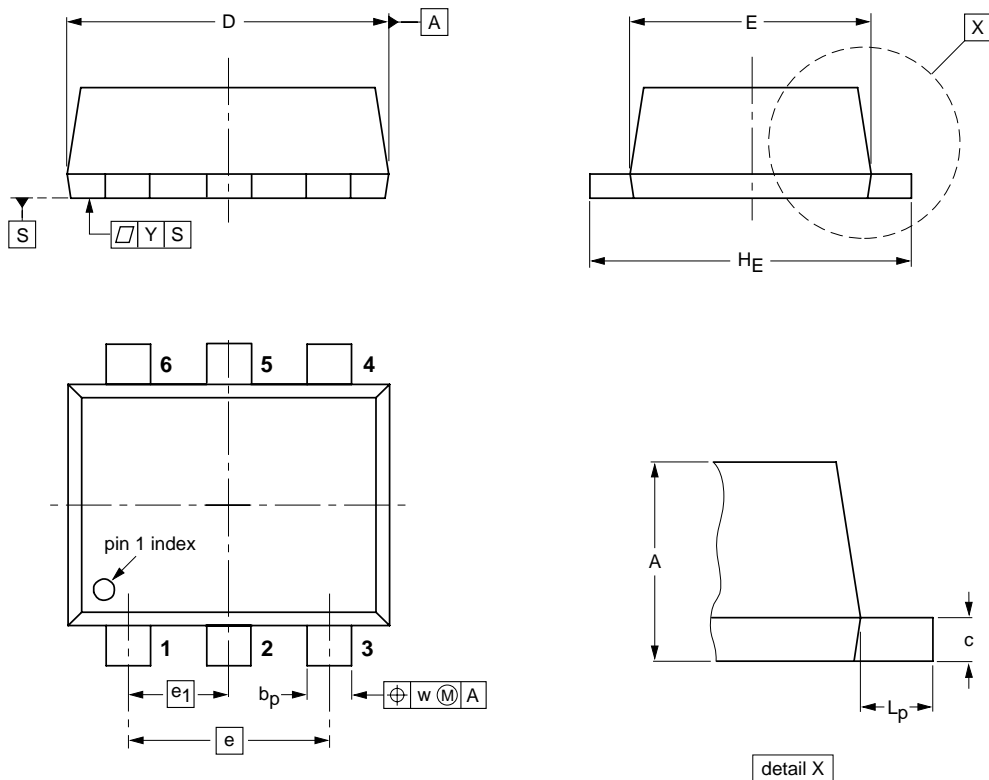
NPN general purpose double transistor

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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

NPN general purpose double transistor

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DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

Notes

1. Please consult the most recently issued document before initiating or completing a design.
2. The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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NXP Semiconductors

Customer notification

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Contact information

For additional information please visit: <http://www.nxp.com>

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