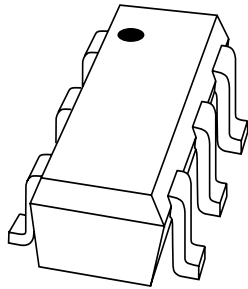


DATA SHEET



PUMX1 NPN general purpose double transistor

Preliminary specification
Supersedes data of 1997 Jul 09

1999 Apr 14

NPN general purpose double transistor

PUMX1

FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 40 V)
- Reduces number of components and boardspace.

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

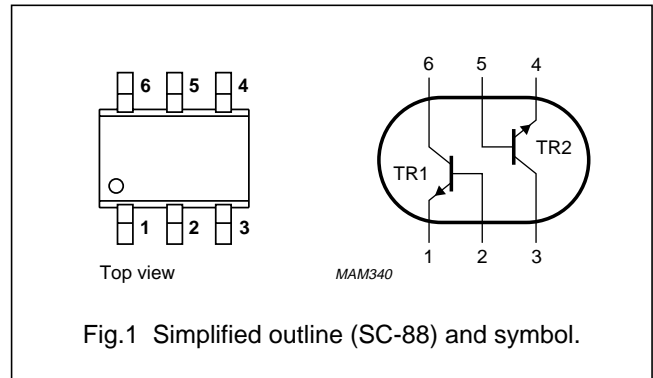
Two independently operating NPN transistors in an SC-88 plastic package. PNP complement: PUMT1.

MARKING

TYPE NUMBER	MARKING CODE
PUMX1	ZtZ

PINNING

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



LIMITING VALUES

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

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	$T_{amb} \leq 25\text{ °C}$	–	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	$T_{amb} \leq 25\text{ °C}$; note 1	–	300	mW

Note

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

NPN general purpose double transistor

PUMX1

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
Per device				
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	416	K/W

Note

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

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per transistor					
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = 30\text{ V}$	–	100	nA
		$I_E = 0; V_{CB} = 30\text{ V}; T_j = 150\text{ °C}$	–	10	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = 4\text{ V}$	–	100	nA
h_{FE}	DC current gain	$I_C = 1\text{ mA}; V_{CE} = 6\text{ V}$	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	$I_E = i_e = 0; V_{CB} = 12\text{ V}; f = 1\text{ MHz}$	–	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: $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$.

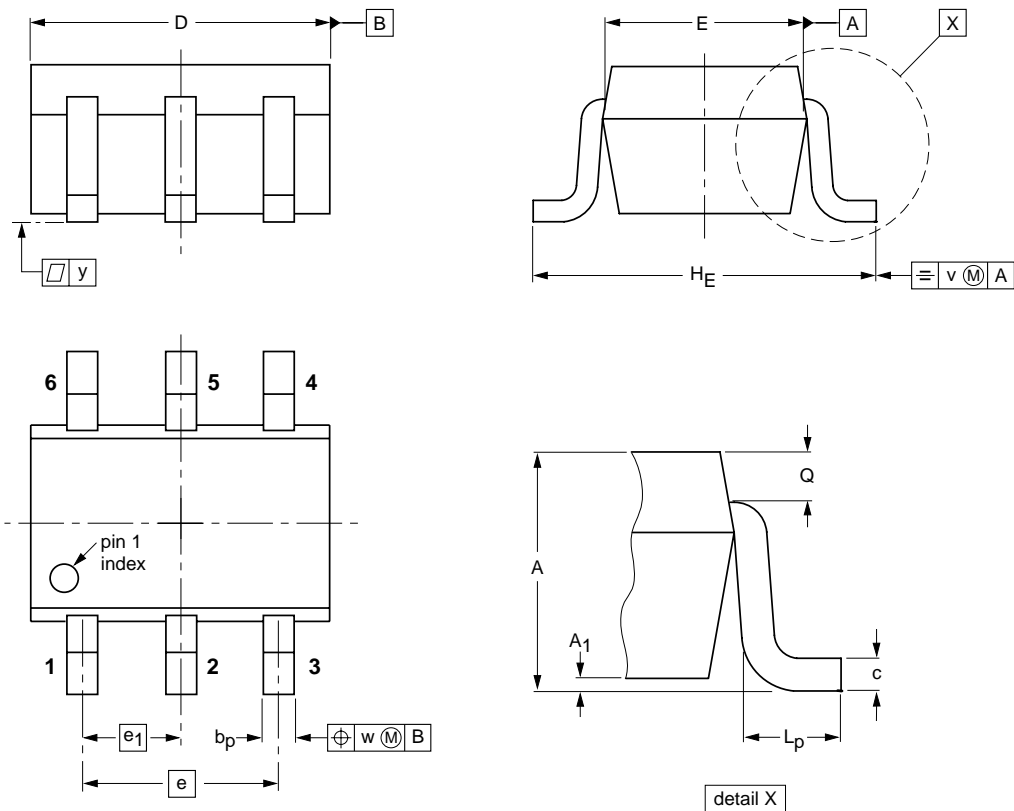
NPN general purpose double transistor

PUMX1

PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT363



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max	bp	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

NPN general purpose double transistor

PUMX1

DEFINITIONS

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

NPN general purpose double transistor

PUMX1

NOTES

NPN general purpose double transistor

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NOTES

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