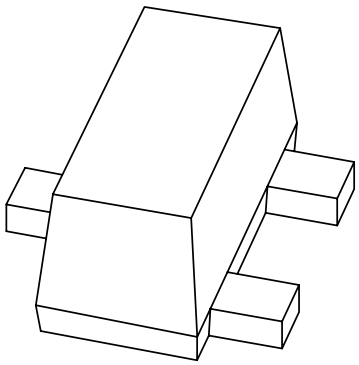
DATA SHEET



2PC4617J
NPN general purpose transistor

Preliminary specification
Supersedes data of 1998 Nov 10

1999 May 04

Philips
Semiconductors

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NPN general purpose transistor 2PC4617J

FEATURES

- Power dissipation comparable to SOT23
- Low output capacitance
- Low saturation voltage V_{CEsat}
- Low current (max. 100 mA)
- Low voltage (max. 50 V).

APPLICATIONS

- General purpose switching and amplification in miniaturized application areas such as telecom and multimedia.

DESCRIPTION

NPN transistor encapsulated in an ultra small plastic SMD SC-89 (SOT490) package.
PNP complement: 2PA1774J.

MARKING

TYPE NUMBER	MARKING CODE
2PC4617JQ	ZQ
2PC4617JR	ZR
2PC4617JS	ZS

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

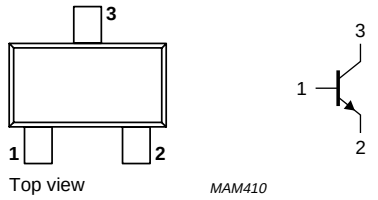


Fig.1 Simplified outline (SC-89; SOT490) and symbol.

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
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	–	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	$T_{amb} \leq 25$ °C; note 1	–	250	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

Note

1. Refer to SC-89 (SOT490) standard mounting conditions.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	in free air; note 1	500	K/W

Note

1. Refer to SC-89 (SOT490) standard mounting conditions.

CHARACTERISTICS

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

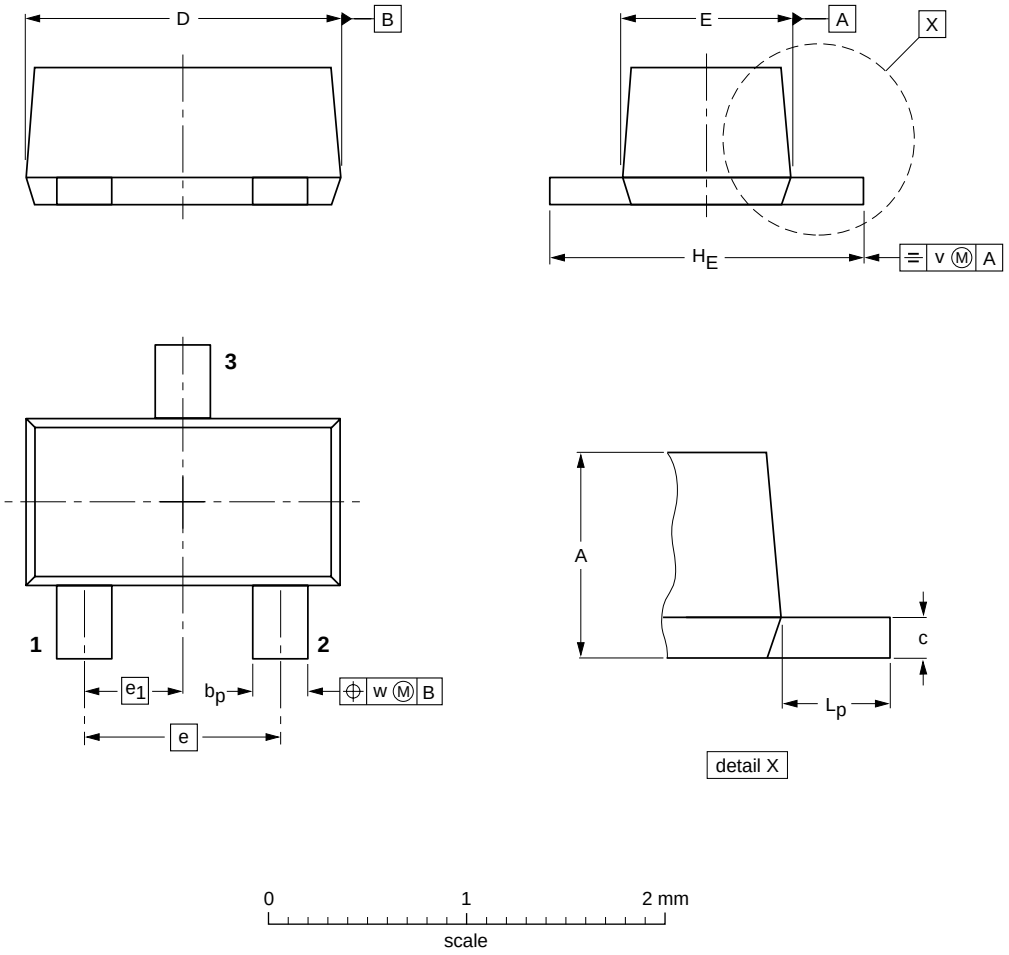
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	I_E = 0; V_{CB} = 30 V	–	100	nA
		I_E = 0; V_{CB} = 30 V; T_j = 150 °C	–	5	µA
I_{EBO}	emitter cut-off current	I_C = 0; V_{EB} = 4 V	–	100	nA
h_{FE}	DC current gain	I_C = 1 mA; V_{CE} = 6 V; note 1			
	2PC4617JQ		120	270	
	2PC4617JR		180	390	
	2PC4617JS		270	560	
V_{CEsat}	collector-emitter saturation voltage	I_C = 50 mA; I_B = 5 mA; note 1	–	200	mV
C_c	collector capacitance	$I_E = i_e$ = 0; V_{CB} = 12 V; f = 1 MHz	–	1.5	pF
f_T	transition frequency	I_C = 2 mA; V_{CE} = 12 V; f = 100 MHz; note 1	100	–	MHz

Note

1. Pulse test: $t_p \leq 300$ µs; $\delta \leq 0.02$.

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT490**



DIMENSIONS (mm are the original dimensions)

UNIT	A	b_p	c	D	E	e	e_1	H_E	L_p	v	w
mm	0.8 0.6	0.33 0.23	0.2 0.1	1.7 1.5	0.95 0.75	1.0	0.5	1.7 1.5	0.5 0.3	0.1	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT490			SC-89			98-10-23

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.	

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NOTES

NOTES

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