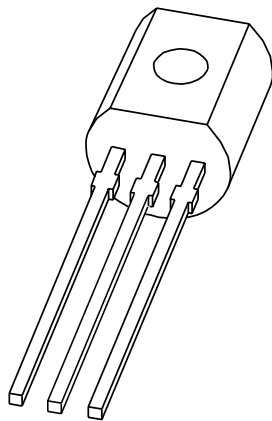


DATA SHEET



2PC1815

NPN general purpose transistor

Product specification
Supersedes data of 1999 May 28

2004 Nov 05

NPN general purpose transistor

2PC1815

FEATURES

- Low current (max. 150 mA)
- Low voltage (max. 50 V).

APPLICATIONS

- General purpose switching and amplification, e.g. audio amplifier driver stages.

DESCRIPTION

NPN transistor in a TO-92 (SOT54) plastic package. PNP complement: 2PA1015.

PINNING

PIN	DESCRIPTION
1	base
2	collector
3	emitter

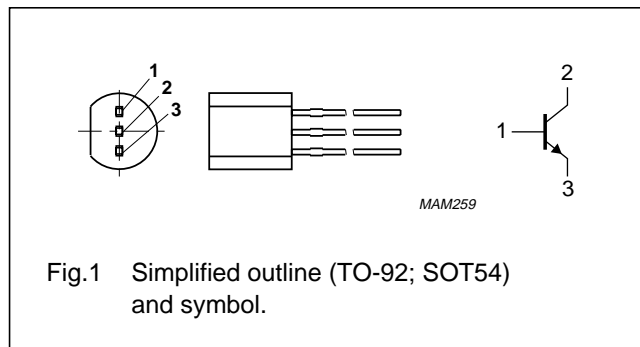


Fig.1 Simplified outline (TO-92; SOT54) and symbol.

ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
2PC1815	SC-43A	plastic single-ended leaded (through hole) package; 3 leads	SOT54

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	60	V
V_{CEO}	collector-emitter voltage	open base	–	50	V
V_{EBO}	emitter-base voltage	open collector	–	5	V
I_C	collector current (DC)		–	150	mA
I_{CM}	peak collector current		–	200	mA
I_{BM}	peak base current		–	200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$; note 1	–	500	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	ambient temperature		–65	+150	°C

Note

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

NPN general purpose transistor

2PC1815

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th(j-a)}$	thermal resistance from junction to ambient	note 1	250	K/W

Note

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

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector-base cut-off current	$V_{CB} = 60\text{ V}; I_E = 0\text{ A}$	–	–	100	nA
I_{EBO}	emitter-base cut-off current	$V_{EB} = 5\text{ V}; I_C = 0\text{ A}$	–	–	100	nA
h_{FE}	DC current gain	$V_{CE} = 6\text{ V}; I_C = 150\text{ mA}$	25	–	–	
h_{FE}	DC current gain	$V_{CE} = 6\text{ V}; I_C = 2\text{ mA}$				
	2PC1815		120	–	700	
	2PC1815Y		120	–	240	
	2PC1815GR		200	–	400	
	2PC1815BL		350	–	700	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 100\text{ mA}; I_B = 10\text{ mA}$	–	–	300	mV
V_{BEsat}	base-emitter saturation voltage	$I_C = 100\text{ mA}; I_B = 10\text{ mA}$	–	–	1.1	V
C_c	collector capacitance	$V_{CB} = 10\text{ V}; I_E = I_e = 0\text{ A};$ $f = 1\text{ MHz}$	–	2.5	3.5	pF
f_T	transition frequency	$V_{CE} = 6\text{ V}; I_C = 1\text{ mA}; f = 100\text{ MHz}$	80	–	–	MHz
F	noise figure	$V_{CE} = 5\text{ V}; I_C = 200\text{ }\mu\text{A};$ $R_S = 2\text{ k}\Omega; f = 1\text{ kHz}$	–	–	10	dB

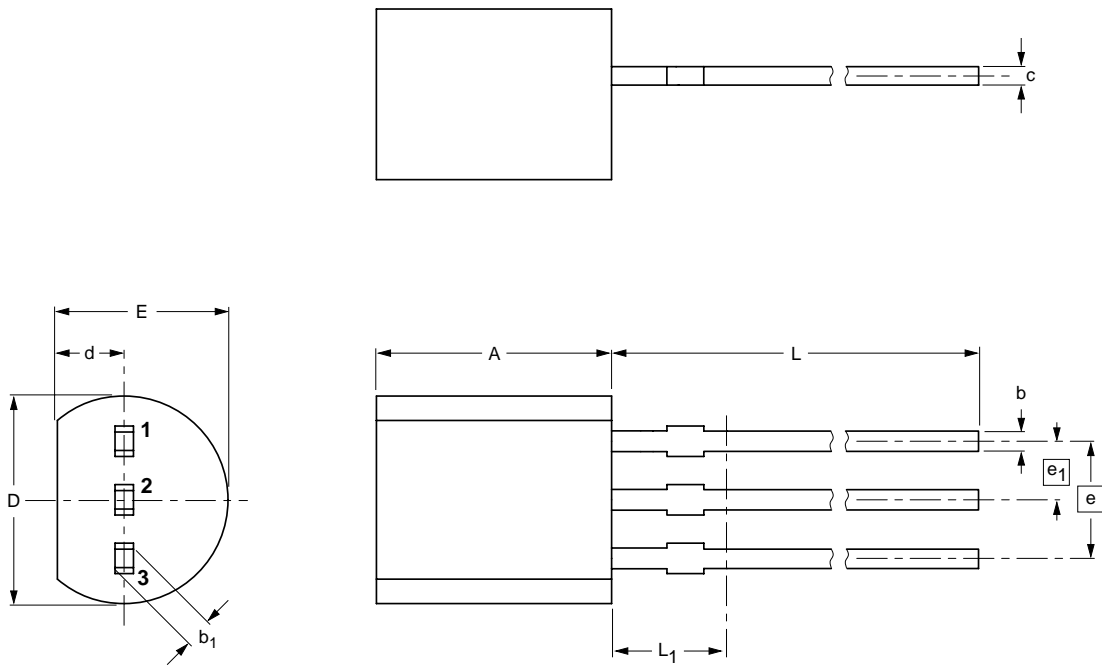
NPN general purpose transistor

2PC1815

PACKAGE OUTLINE

Plastic single-ended leaded (through hole) package; 3 leads

SOT54



DIMENSIONS (mm are the original dimensions)

UNIT	A	b	b ₁	c	D	d	E	e	e ₁	L	L ₁ ⁽¹⁾ max.
mm	5.2 5.0	0.48 0.40	0.66 0.55	0.45 0.38	4.8 4.4	1.7 1.4	4.2 3.6	2.54	1.27	14.5 12.7	2.5

Note

1. Terminal dimensions within this zone are uncontrolled to allow for flow of plastic and terminal irregularities.

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA		
SOT54		TO-92	SC-43A		97-02-28 04-06-28

NPN general purpose transistor

2PC1815

DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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SCA76

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