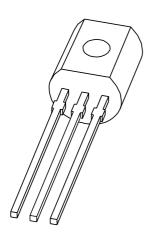
## **DISCRETE SEMICONDUCTORS**

# 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			

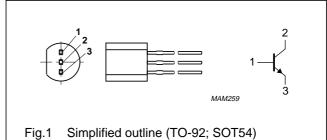


Fig.1 Simplified outline (TO-92; SOT54) and symbol.

#### **ORDERING INFORMATION**

TYPE NUMBER		PACKAGE			
ITPE NOWIBER	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	PARAMETER CONDITIONS			
V <sub>CBO</sub>	collector-base voltage	open emitter	_	60	V
V <sub>CEO</sub>	collector-emitter voltage	open base	_	50	V
V <sub>EBO</sub>	emitter-base voltage	open collector	_	5	V
I <sub>C</sub>	collector current (DC)		_	150	mA
I <sub>CM</sub>	peak collector current		_	200	mA
I <sub>BM</sub>	peak base current		_	200	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C; note 1	_	500	mW
T <sub>stg</sub>	storage temperature		-65	+150	°C
T <sub>j</sub>	junction temperature		_	150	°C
T <sub>amb</sub>	ambient temperature		-65	+150	°C

#### Note

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

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#### THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th(j-a)</sub>	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 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I <sub>CBO</sub>	collector-base cut-off current $V_{CB} = 60 \text{ V}; I_E = 0 \text{ A}$		_	_	100	nA
I <sub>EBO</sub>	emitter-base cut-off current	V <sub>EB</sub> = 5 V; I <sub>C</sub> = 0 A	_	_	100	nA
h <sub>FE</sub>	DC current gain	V <sub>CE</sub> = 6 V; I <sub>C</sub> = 150 mA	25	_	-	
h <sub>FE</sub>	DC current gain	V <sub>CE</sub> = 6 V; I <sub>C</sub> = 2 mA				
	2PC1815		120	-	700	
	2PC1815Y		120	-	240	
	2PC1815GR		200	-	400	
	2PC1815BL		350	_	700	
V <sub>CEsat</sub>	collector-emitter saturation voltage	I <sub>C</sub> = 100 mA; I <sub>B</sub> = 10 mA	_	_	300	mV
V <sub>BEsat</sub>	base-emitter saturation voltage	I <sub>C</sub> = 100 mA; I <sub>B</sub> = 10 mA	_	_	1.1	V
C <sub>c</sub>	collector capacitance	$V_{CB} = 10 \text{ V}; I_E = i_e = 0 \text{ A};$ f = 1 MHz	_	2.5	3.5	pF
f <sub>T</sub>	transition frequency	V <sub>CE</sub> = 6 V; I <sub>C</sub> = 1 mA; f = 100 MHz	80	_	_	MHz
F	noise figure	$V_{CE} = 5 \text{ V; } I_{C} = 200 \mu\text{A;}$ $R_{S} = 2 k\Omega; f = 1 k\text{Hz}$	_	_	10	dB

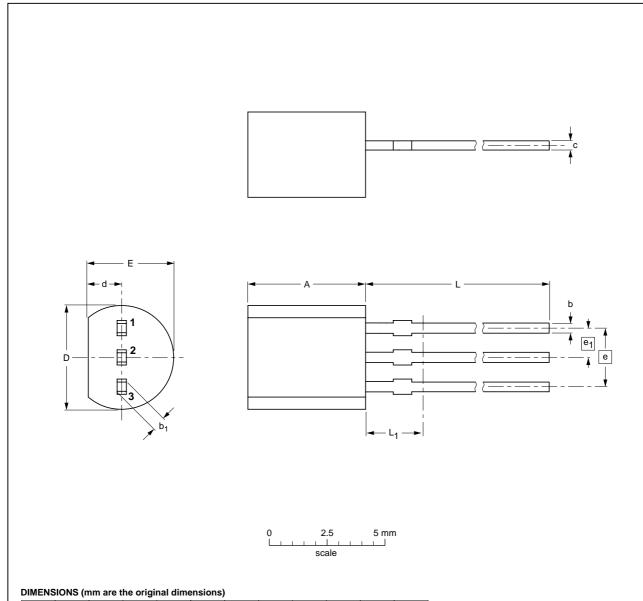
## NPN general purpose transistor

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#### **PACKAGE OUTLINE**

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

SOT54



UNIT	A	b	b <sub>1</sub>	С	D	d	E	е	e <sub>1</sub>	L	L <sub>1</sub> <sup>(1)</sup> 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		REFER	EUROPEAN	ISSUE DATE		
VERSION	IEC	JEDEC	JEITA		PROJECTION	1330E DATE
SOT54		TO-92	SC-43A			<del>97-02-28</del> 04-06-28

### NPN general purpose transistor

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#### **DATA SHEET STATUS**

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	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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#### **Contact information**

For additional information please visit http://www.semiconductors.philips.com. Fax: +31 40 27 24825 For sales offices addresses send e-mail to: sales.addresses@www.semiconductors.philips.com.

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