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

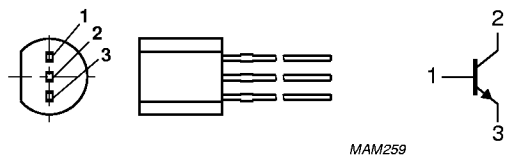


Fig.1 Simplified outline (TO-92; SOT54) and symbol.

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	–	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	$T_{amb} \leq 25$ °C; note 1	–	500	mW
T_{stg}	storage temperature		−65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		−65	+150	°C

Note

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

THERMAL CHARACTERISTICS

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

Note

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

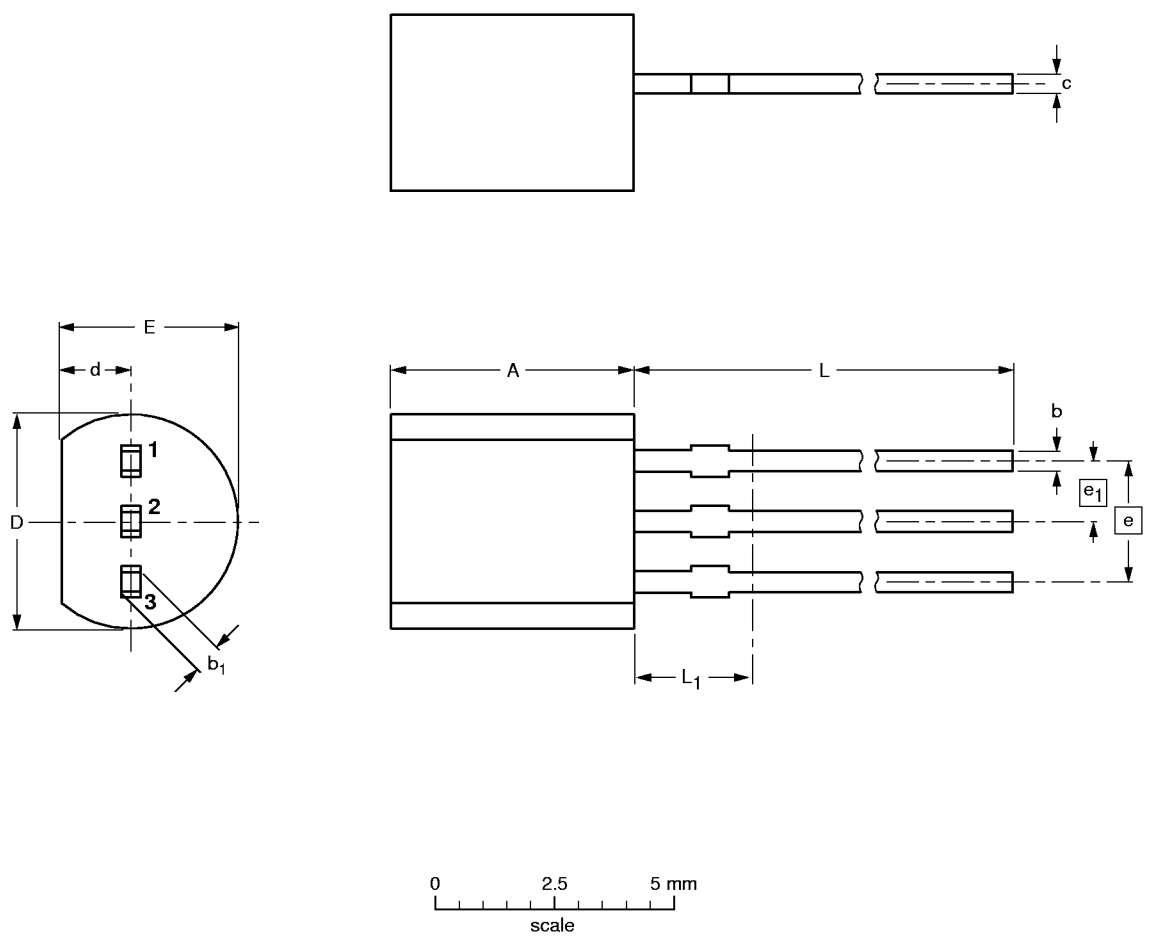
CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

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

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)
mm	5.2 5.0	0.48 0.40	0.66 0.56	0.45 0.40	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	EIAJ			
SOT54		TO-92	SC-43			97-02-28