

NPN general purpose transistors

JC337; JC337A; JC338

FEATURES

- Low current (max. 500 mA)
- Low voltage (max. 60 V).

APPLICATIONS

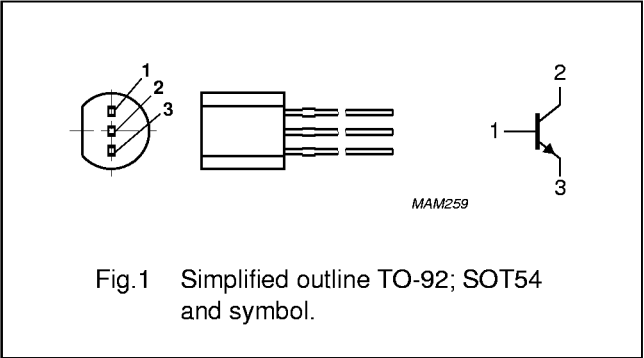
- General purpose switching and amplification, e.g. driver and output stages of audio amplifiers.

DESCRIPTION

NPN transistor in a TO-92; SOT54 plastic package.
PNP complements: JC327, JC327A and JC328.

PINNING

PIN	DESCRIPTION
1	base
2	collector
3	emitter



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter			
	JC337		—	50	V
	JC337A		—	60	V
	JC338		—	30	V
V_{CEO}	collector-emitter voltage	open base			
	JC337		—	45	V
	JC337A		—	60	V
	JC338		—	25	V
I_{CM}	peak collector current		—	1	A
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^{\circ}\text{C}$	—	625	mW
h_{FE}	DC current gain	$I_C = 100\text{ mA}; V_{CE} = 1\text{ V}$	100	600	
f_T	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	100	—	MHz

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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			
	JC337		–	50	V
	JC337A		–	60	V
	JC338		–	30	V
V_{CEO}	collector-emitter voltage	open base			
	JC337		–	45	V
	JC337A		–	60	V
	JC338		–	25	V
V_{EBO}	emitter-base voltage	open collector	–	5	V
I_C	collector current (DC)		–	500	mA
I_{CM}	peak collector current		–	1	A
I_{BM}	peak base current		–	200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$; note 1	–	625	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
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	0.2	K/mW

Note

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

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CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = 20\text{ V}$	—	—	100	nA
		$I_E = 0; V_{CB} = 20\text{ V}; T_j = 150\text{ }^{\circ}\text{C}$	—	—	5	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = 5\text{ V}$	—	—	100	nA
h_{FE}	DC current gain	$I_C = 100\text{ mA}; V_{CE} = 1\text{ V}$				
	JC337; JC338					
	JC337A					
	JC337-16; JC338-16					
	JC337-25; JC338-25					
	JC337-40; JC338-40					
h_{FE}	DC current gain	$I_C = 500\text{ mA}; V_{CE} = 1\text{ V}$	40	—	—	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 500\text{ mA}; I_B = 50\text{ mA}$	—	—	700	mV
V_{BE}	base-emitter voltage	$I_C = 500\text{ mA}; V_{CE} = 1\text{ V}; \text{note 1}$	—	—	1.2	V
C_c	collector capacitance	$I_E = I_e = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$	—	5	—	pF
f_T	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	100	—	—	MHz

Note

1. V_{BE} decreases by about 2 mV/K with increasing temperature.

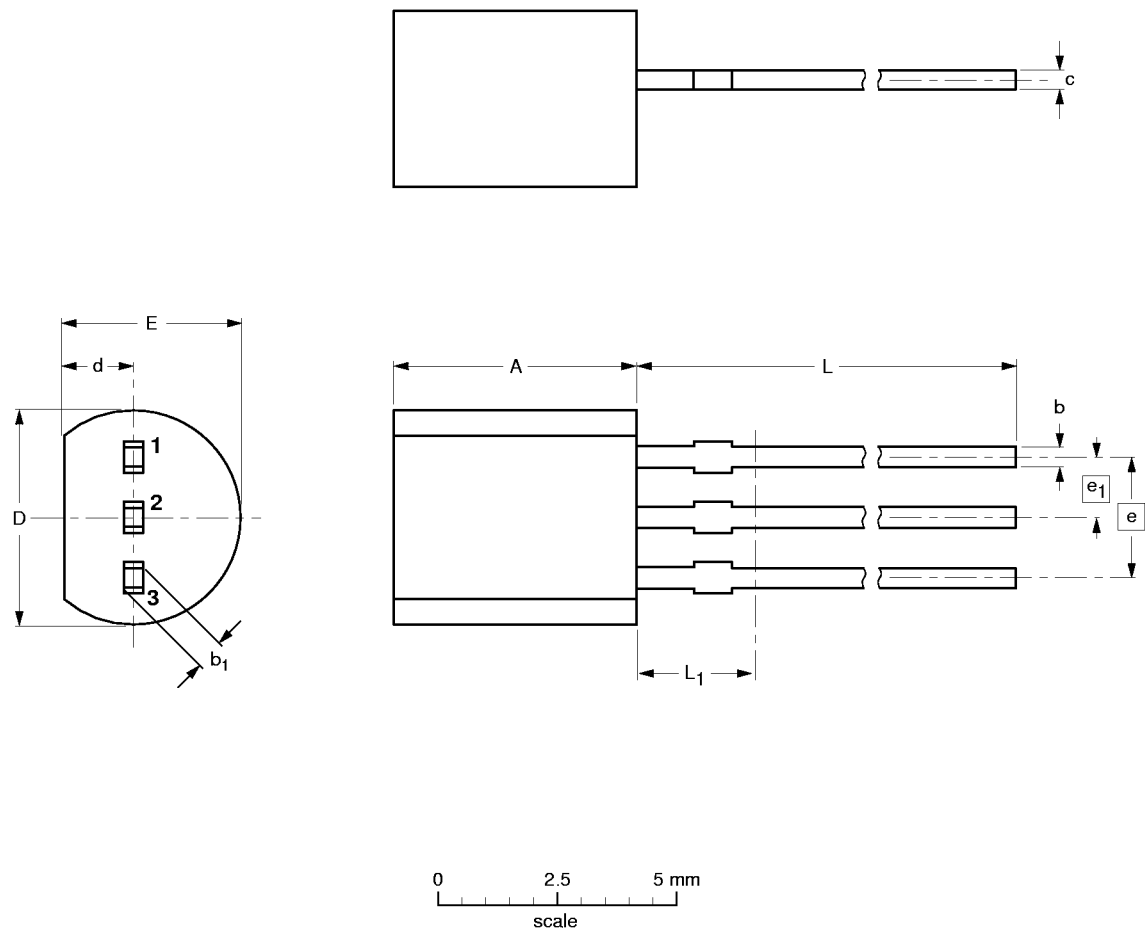
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PACKAGE OUTLINE

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