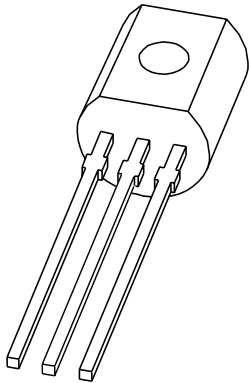


DATA SHEET



PBSS4350S

50 V low V_{CEsat} NPN transistor

Product specification

2001 Nov 19

50 V low V_{CEsat} NPN transistor

PBSS4350S

FEATURES

- High power dissipation (830 mW)
- Ultra low collector-emitter saturation voltage
- 3 A continuous current
- High current switching
- Improved device reliability due to reduced heat generation

APPLICATIONS

- Medium power switching and muting
- Linear regulators
- DC/DC convertor
- Supply line switching circuits
- Battery management applications
- Strobe flash units
- Heavy duty battery powered equipment (motor and lamp drivers).

DESCRIPTION

NPN low V_{CEsat} transistor in a SOT54 plastic package.
PNP complement: PBSS5350S.

MARKING

TYPE NUMBER	MARKING CODE
PBSS4350S	S4350S

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
V_{CEO}	collector-emitter voltage	50	V
I_C	collector current (DC)	3	A
I_{CM}	peak collector current	5	A
R_{CEsat}	equivalent on-resistance	<145	m Ω

PINNING

PIN	DESCRIPTION
1	base
2	collector
3	emitter

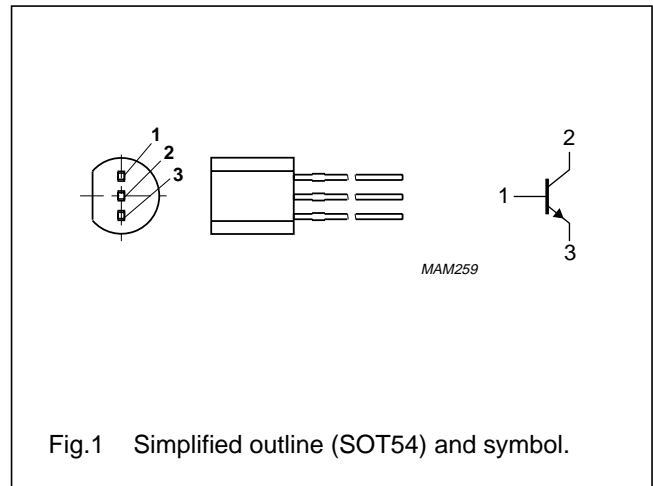


Fig.1 Simplified outline (SOT54) and symbol.

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	–	6	V
I_C	collector current (DC)		–	3	A
I_{CM}	peak collector current		–	5	A
I_{BM}	peak base current		–	1	A
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^\circ\text{C}$; note 1	–	830	mW
T_{stg}	storage temperature		–65	+150	$^\circ\text{C}$
T_j	junction temperature		–	150	$^\circ\text{C}$
T_{amb}	operating ambient temperature		–65	+150	$^\circ\text{C}$

Note

1. Device mounted on a printed-circuit board, single sided copper, tinplated and standard footprint.

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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	in free air; note 1	150	K/W

Note

1. Device mounted on a printed-circuit board, single sided copper, tinplated and standard footprint.

CHARACTERISTICS

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

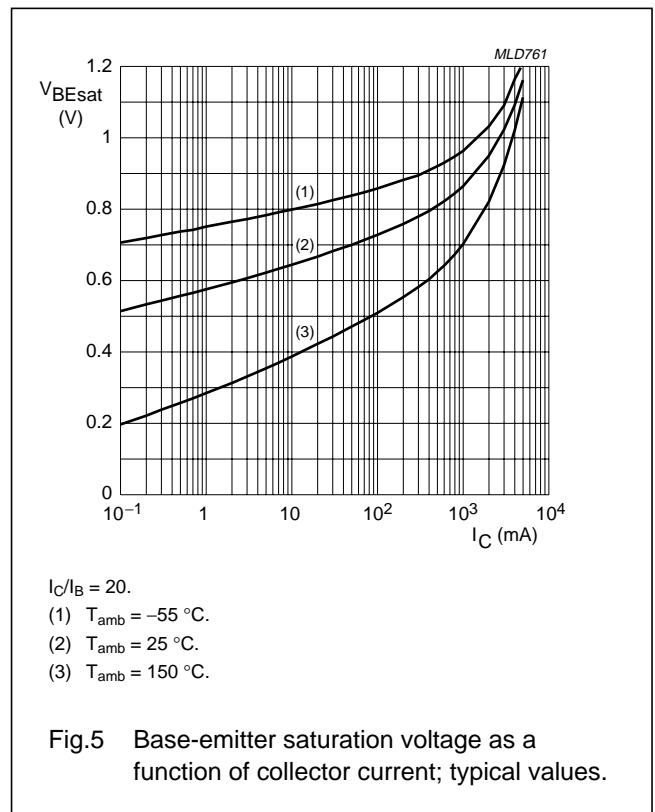
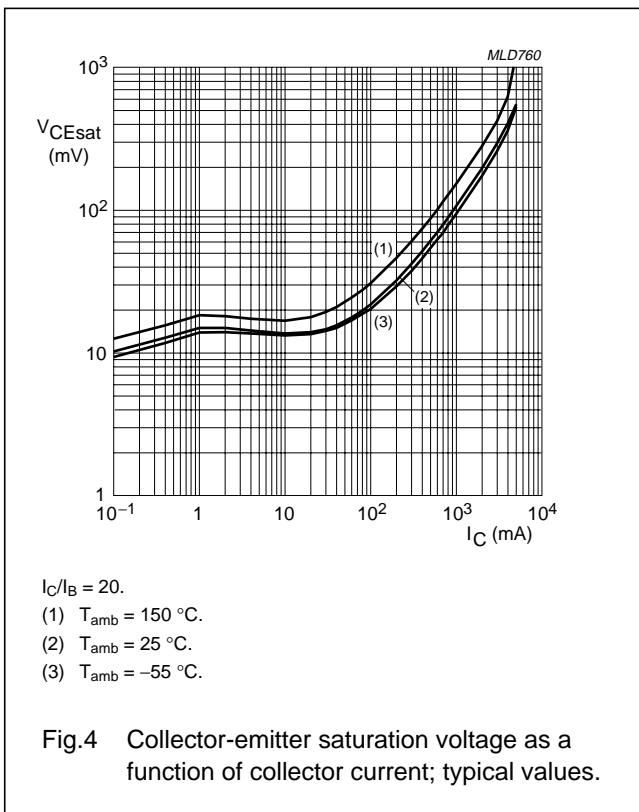
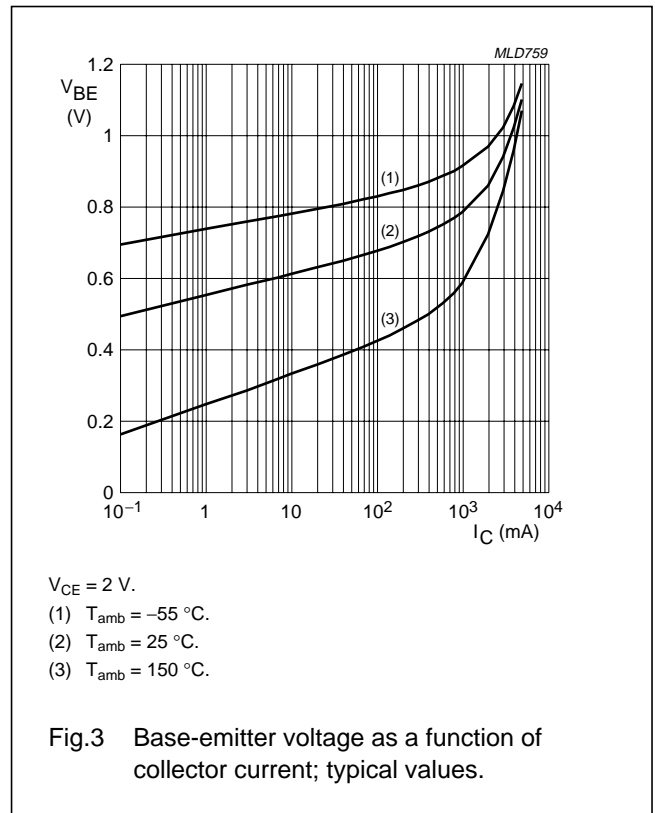
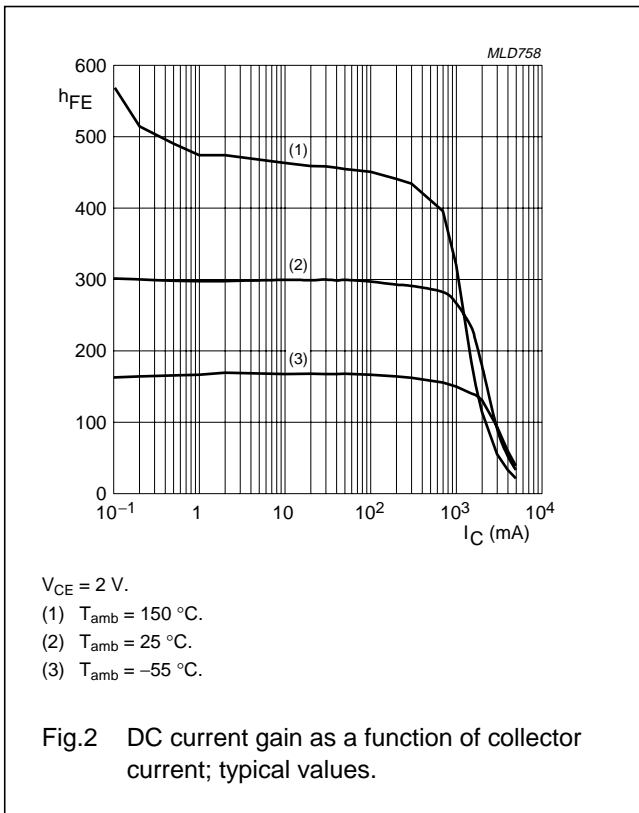
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector-base cut-off current	$V_{CB} = 50\text{ V}; I_E = 0$	–	–	100	nA
		$V_{CB} = 50\text{ V}; I_E = 0; T_j = 150\text{ °C}$	–	–	50	μA
I_{EBO}	emitter-base cut-off current	$V_{EB} = 5\text{ V}; I_C = 0$	–	–	100	nA
h_{FE}	DC current gain	$V_{CE} = 2\text{ V}; I_C = 500\text{ mA}$	200	–	–	
		$V_{CE} = 2\text{ V}; I_C = 1\text{ A}; \text{note 1}$	200	–	–	
		$V_{CE} = 2\text{ V}; I_C = 2\text{ A}; \text{note 1}$	100	–	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 500\text{ mA}; I_B = 50\text{ mA}$	–	–	90	mV
		$I_C = 1\text{ A}; I_B = 50\text{ mA}$	–	–	170	mV
		$I_C = 2\text{ A}; I_B = 200\text{ mA}; \text{note 1}$	–	–	290	mV
R_{CEsat}	equivalent on-resistance	$I_C = 2\text{ A}; I_B = 200\text{ mA}; \text{note 1}$	–	110	<145	$\text{m}\Omega$
V_{BEsat}	base-emitter saturation voltage	$I_C = 2\text{ A}; I_B = 200\text{ mA}; \text{note 1}$	–	–	1.2	V
V_{BEon}	base-emitter turn-on voltage	$V_{CE} = 2\text{ V}; I_C = 1\text{ A}; \text{note 1}$	–	–	1.1	V
f_T	transition frequency	$I_C = 100\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	100	–	–	MHz
C_c	collector capacitance	$V_{CB} = 10\text{ V}; I_E = I_e = 0; f = 1\text{ MHz}$	–	–	30	pF

Note

1. Pulse test: $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$.

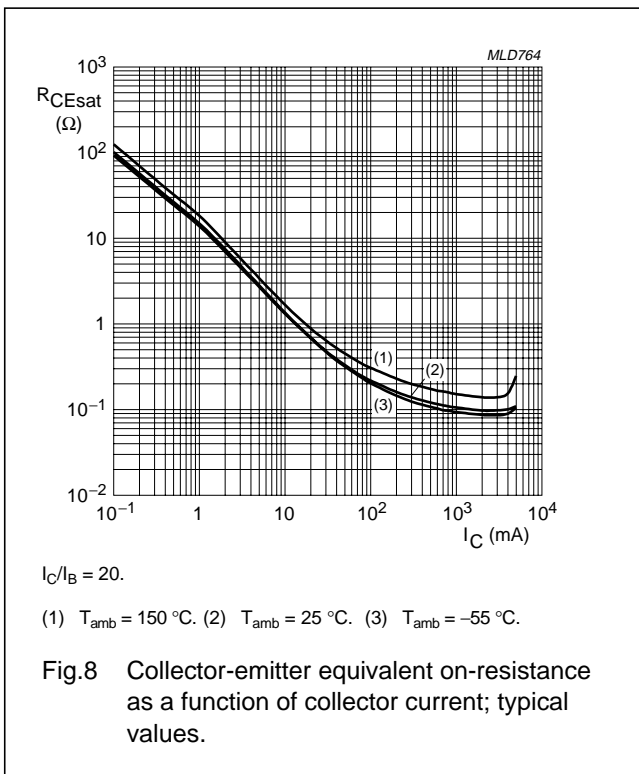
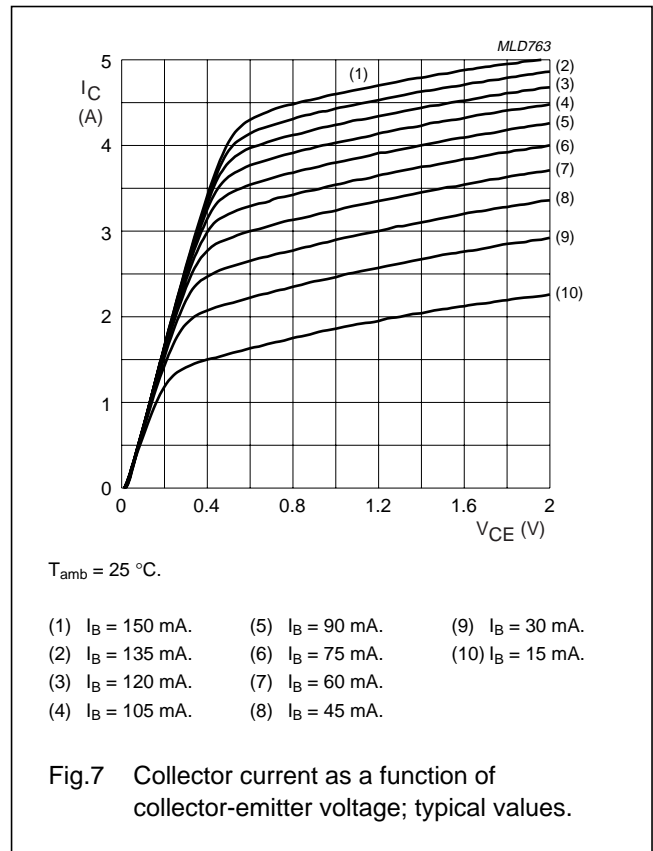
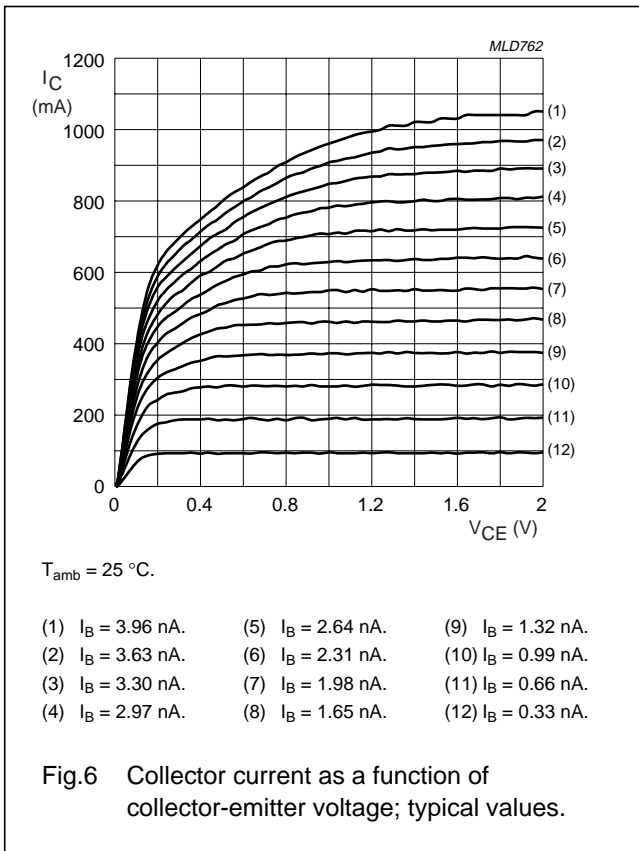
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PACKAGE OUTLINE

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

SOT54

0 2.5 5 mm
scale

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

50 V low V_{CEsat} NPN transistor

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