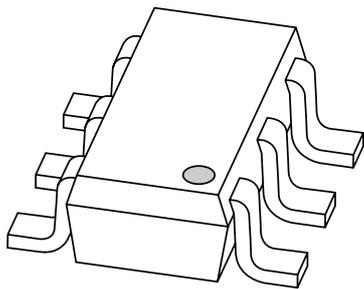


DATA SHEET



PBSS5140D 40 V low V_{CEsat} PNP transistor

Product specification

2001 Nov 15

40 V low V_{CEsat} PNP transistor

PBSS5140D

FEATURES

- Low collector-emitter saturation voltage
- High current capability
- Improved device reliability due to reduced heat generation.

APPLICATIONS

- General purpose switching and muting
- LCD back-lighting
- Supply line switching circuits
- Battery driven equipment (mobile phones, video cameras and hand-held devices).

DESCRIPTION

PNP low V_{CEsat} transistor in an SC-74 (SOT457) plastic package.

MARKING

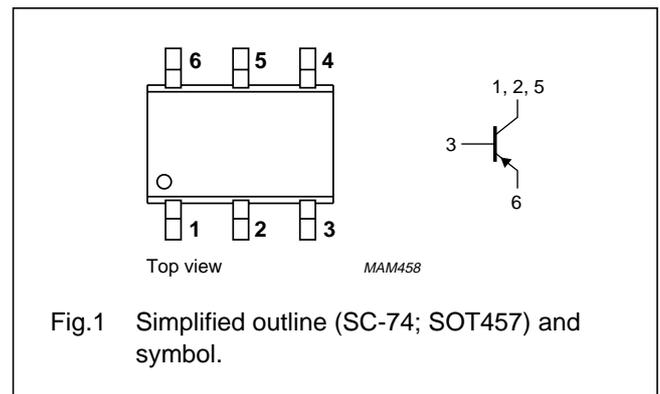
TYPE NUMBER	MARKING CODE
PBSS5140D	51

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
V_{CEO}	collector-emitter voltage	-40	V
I_C	collector current (DC)	-1	A
I_{CM}	peak collector current	-2	A
R_{CEsat}	equivalent on-resistance	<500	m Ω

PINNING

PIN	DESCRIPTION
1	collector
2	collector
3	base
4	n.c.
5	collector
6	emitter



LIMITING VALUES

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	-	-40	V
V_{CEO}	collector-emitter voltage	open base	-	-40	V
V_{EBO}	emitter-base voltage	open collector	-	-5	V
I_C	collector current (DC)		-	-1	A
I_{CM}	peak collector current		-	-2	A
I_{BM}	peak base current		-	-1	A
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^\circ\text{C}$; note 1	-	460	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 mounting pad for collector 1 cm².

40 V low V_{CEsat} PNP transistor

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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	272	K/W

Note

1. Device mounted on a printed-circuit board, single-sided copper, tinplated and mounting pad for collector 1 cm².

CHARACTERISTICS

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

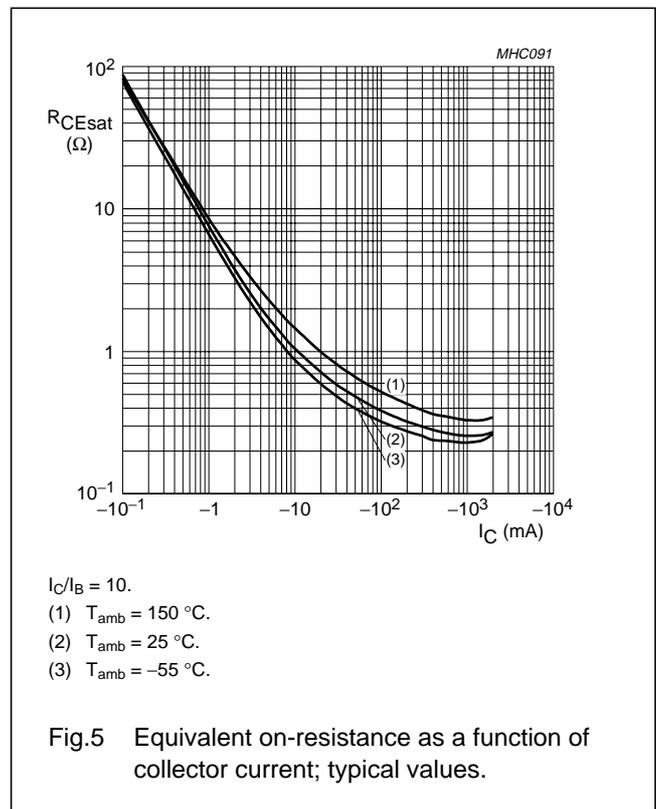
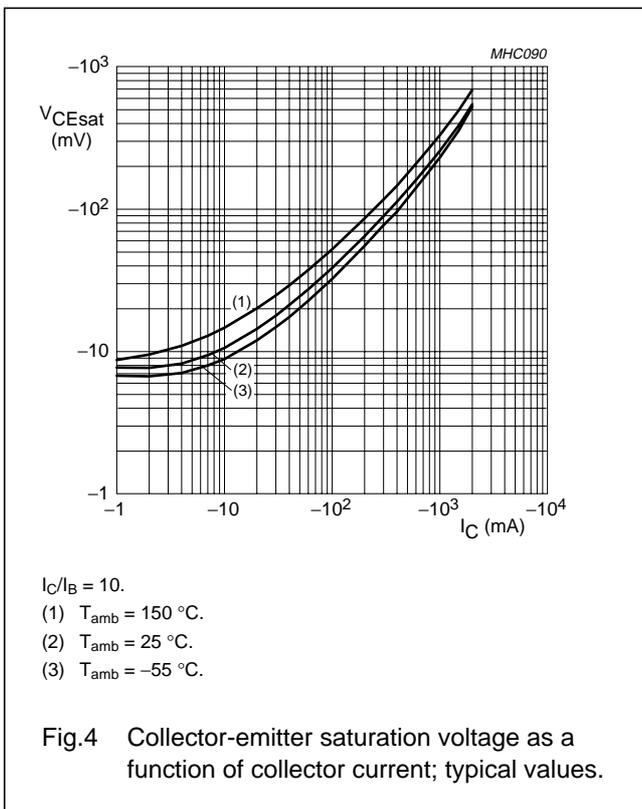
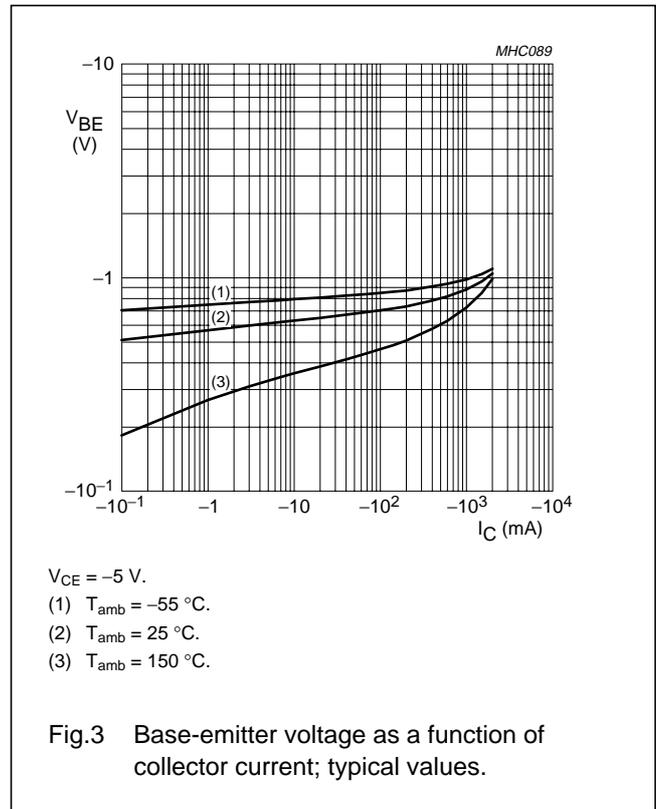
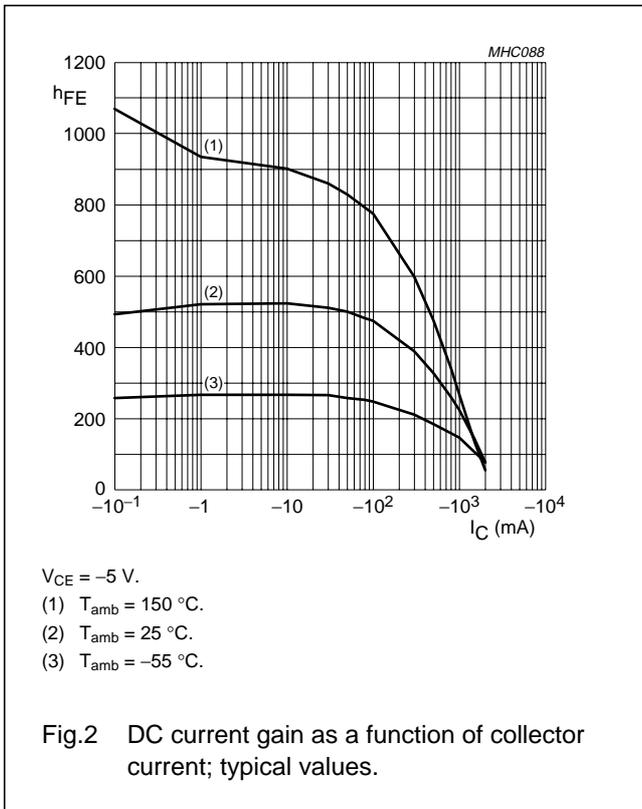
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector-base cut-off current	$V_{CB} = -40\text{ V}; I_C = 0$	–	–	–100	nA
		$V_{CB} = -40\text{ V}; I_C = 0; T_J = 150\text{ °C}$	–	–	–50	μA
I_{CEO}	collector-emitter cut-off current	$V_{CE} = -30\text{ V}; I_B = 0$	–	–	–100	nA
I_{EBO}	emitter-base cut-off current	$V_{EB} = -5\text{ V}; I_C = 0$	–	–	–100	nA
h_{FE}	DC current gain	$V_{CE} = -5\text{ V}$				
		$I_C = -1\text{ mA}$	300	–	–	
		$I_C = -100\text{ mA}$	300	–	800	
		$I_C = -500\text{ mA}$	250	–	–	
		$I_C = -1\text{ A}$	160	–	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -100\text{ mA}; I_B = -1\text{ mA}$	–	–	–200	mV
		$I_C = -500\text{ mA}; I_B = -50\text{ mA}$	–	–	–250	mV
		$I_C = -1\text{ A}; I_B = -100\text{ mA}$	–	–	–500	mV
R_{CEsat}	equivalent on-resistance	$I_C = -500\text{ mA}; I_B = -50\text{ mA};$ note 1	–	300	<500	m Ω
V_{BEsat}	base-emitter saturation voltage	$I_C = -1\text{ A}; I_B = -50\text{ mA}$	–	–	–1.1	V
V_{BEon}	base-emitter turn on voltage	$V_{CE} = -5\text{ V}; I_C = -1\text{ A}$	–	–	–1	V
f_T	transition frequency	$I_C = -50\text{ mA}; V_{CE} = -10\text{ V};$ $f = 100\text{ MHz}$	150	–	–	MHz
C_C	collector capacitance	$V_{CB} = -10\text{ V}; I_E = I_e = 0; f = 1\text{ MHz}$	–	–	–12	pF

Note

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

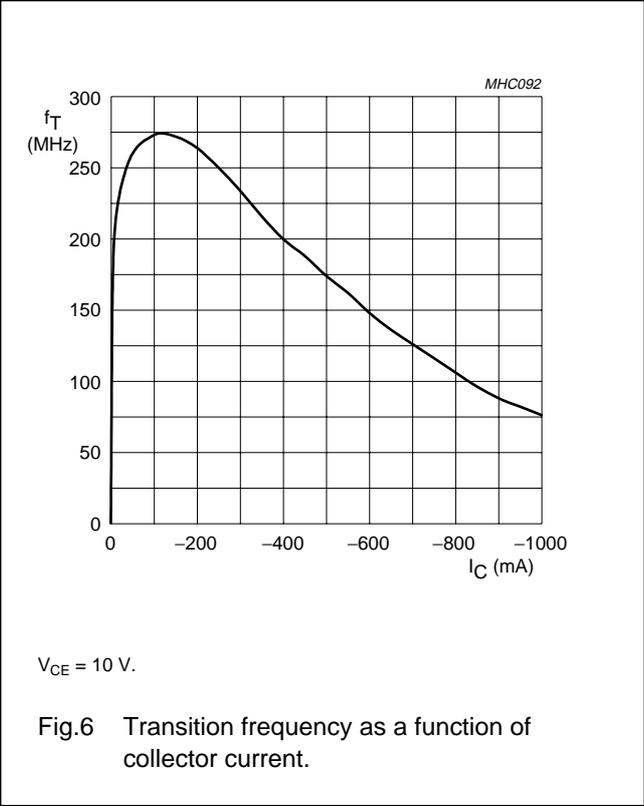
40 V low V_{CEsat} PNP transistor

PBSS5140D



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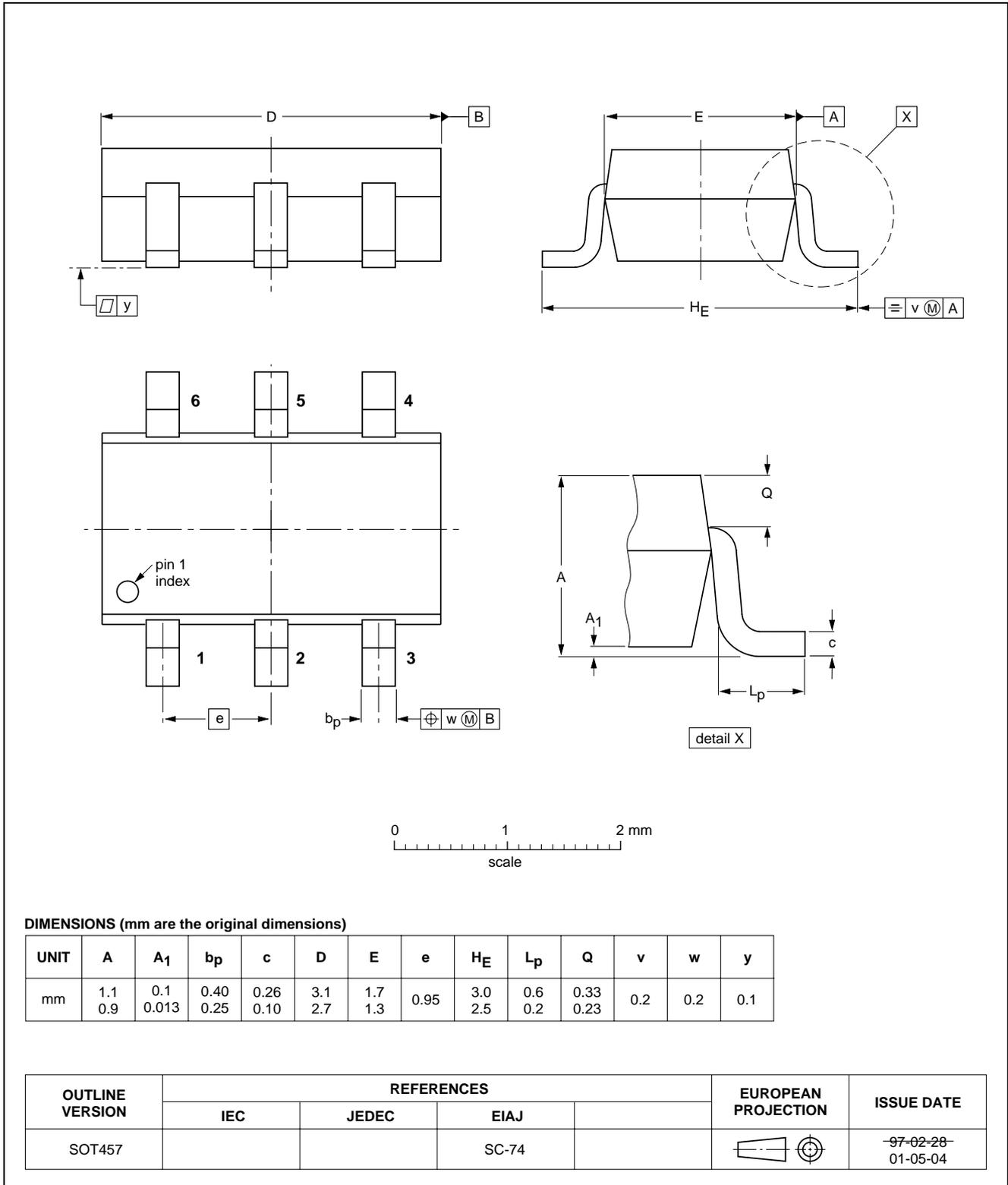
40 V low V_{CEsat} PNP transistor

PBSS5140D

PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT457



40 V low V_{CEsat} PNP transistor

PBSS5140D

DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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