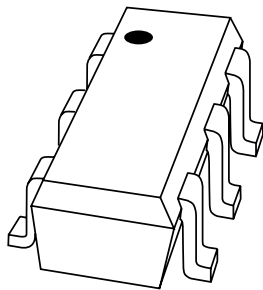


DATA SHEET



PBSS2515YPN 15 V low $V_{CE(sat)}$ NPN/PNP transistor

Product specification
Supersedes data of 2002 May 08

2005 Jan 11

15 V low $V_{CE(sat)}$ NPN/PNP transistor

PBSS2515YPN

FEATURES

- Low collector-emitter saturation voltage
- High current capability
- Replaces two SC-70 packaged low V_{CEsat} transistors on same PCB area
- Reduces required PCB area
- Reduced pick and place costs.

APPLICATION

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

DESCRIPTION

NPN/PNP low V_{CEsat} transistor pair in a SC-88 plastic package.

MARKING

TYPE NUMBER	MARKING CODE
PBSS2515YPN	N8*

Note

1. * = -: made in Hong Kong
 * = t: made in Malaysia
 * = W: made in China.

ORDERING INFORMATION

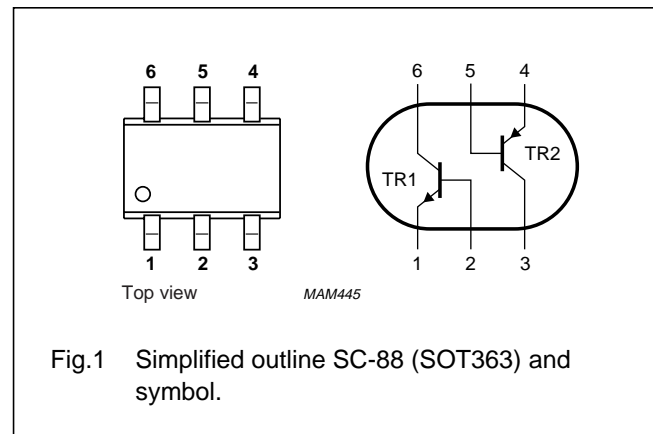
TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
PBSS2515YPN	SC-88	plastic surface mounted package; 6 leads	SOT363

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
V_{CEO}	collector-emitter voltage	15	V
I_{CM}	peak collector current	1	A
R_{CEsat}	equivalent on-resistance	<500	m Ω

PINNING

PIN	DESCRIPTION
1, 4	emitter TR1; TR2
2, 5	base TR1; TR2
6, 3	collector TR1; TR2



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LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per transistor; for the PNP transistor with negative polarity					
V_{CBO}	collector-base voltage	open emitter	–	15	V
V_{CEO}	collector-emitter voltage	open base	–	15	V
V_{EBO}	emitter-base voltage	open collector	–	6	V
I_C	collector current (DC)		–	500	mA
I_{CM}	peak collector current		–	1	A
I_{BM}	peak base current		–	100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$	–	200	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C
Per device					
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$; note 1	–	300	mW

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	416	K/W

Note

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

15 V low $V_{CE(sat)}$ NPN/PNP transistor

PBSS2515YPN

CHARACTERISTICS

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

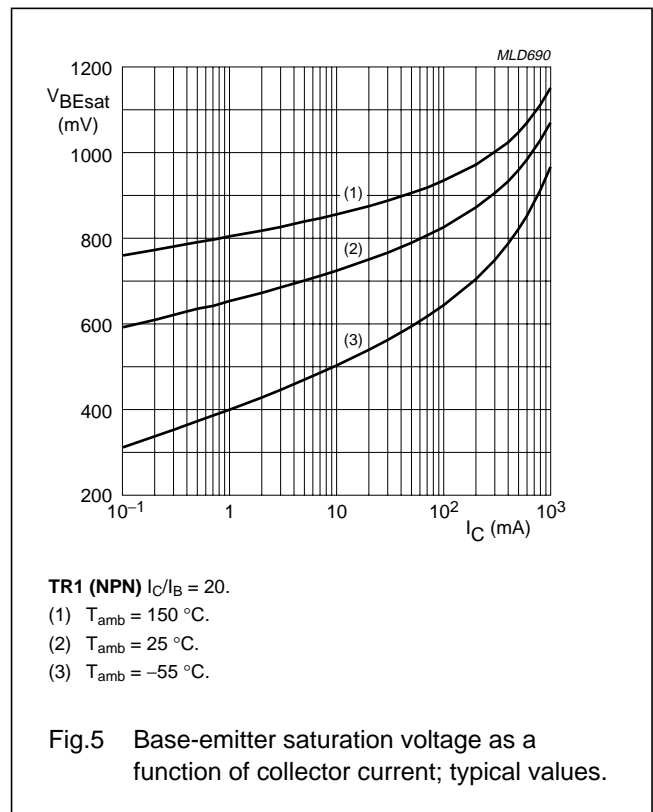
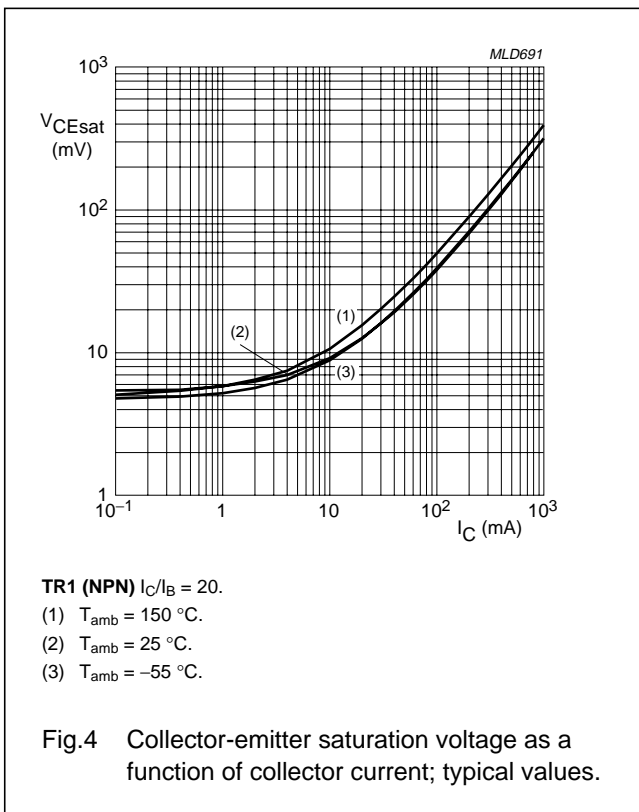
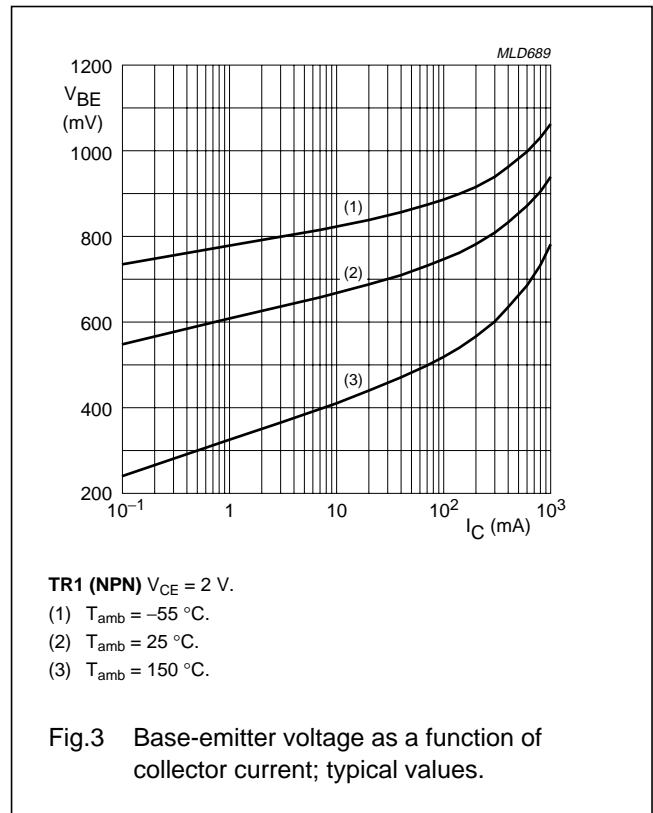
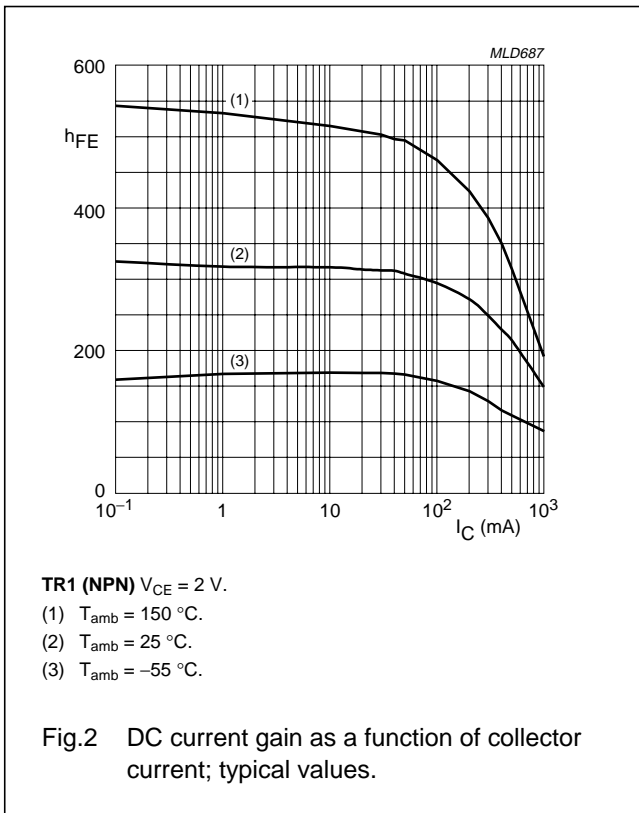
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Per transistor; for the PNP transistor with negative polarity						
I_{CBO}	collector-base cut-off current	$V_{CB} = 15\text{ V}; I_E = 0\text{ A}$	–	–	100	nA
		$V_{CB} = 15\text{ V}; I_E = 0\text{ A}; T_j = 150\text{ °C}$	–	–	50	μA
I_{EBO}	emitter-base cut-off current	$V_{EB} = 5\text{ V}; I_C = 0\text{ A}$	–	–	100	nA
h_{FE}	DC current gain	$V_{CE} = 2\text{ V}; I_C = 10\text{ mA}$	200	–	–	
		$V_{CE} = 2\text{ V}; I_C = 100\text{ mA}; \text{note 1}$	150	–	–	
		$V_{CE} = 2\text{ V}; I_C = 500\text{ mA}; \text{note 1}$	90	–	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 10\text{ mA}; I_B = 0.5\text{ mA}$	–	–	25	mV
		$I_C = 200\text{ mA}; I_B = 10\text{ mA}$	–	–	150	mV
		$I_C = 500\text{ mA}; I_B = 50\text{ mA}; \text{note 1}$	–	–	250	mV
R_{CEsat}	equivalent on-resistance	$I_C = 500\text{ mA}; I_B = 50\text{ mA}; \text{note 1}$	–	300	<500	$\text{m}\Omega$
V_{BEsat}	base-emitter saturation voltage	$I_C = 500\text{ mA}; I_B = 50\text{ mA}; \text{note 1}$	–	–	1.1	V
V_{BEon}	base-emitter turn-on voltage	$V_{CE} = 2\text{ V}; I_C = 100\text{ mA}; \text{note 1}$	–	–	0.9	V
NPN transistor						
f_T	transition frequency	$I_C = 100\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	250	420	–	MHz
C_c	collector capacitance	$V_{CB} = 10\text{ V}; I_E = I_e = 0\text{ A}; f = 1\text{ MHz}$	–	4.4	6	pF
PNP transistor						
f_T	transition frequency	$I_C = -100\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$	100	280	–	MHz
C_c	collector capacitance	$V_{CB} = -10\text{ V}; I_E = I_e = 0\text{ A}; f = 1\text{ MHz}$	–	–	10	pF

Note

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

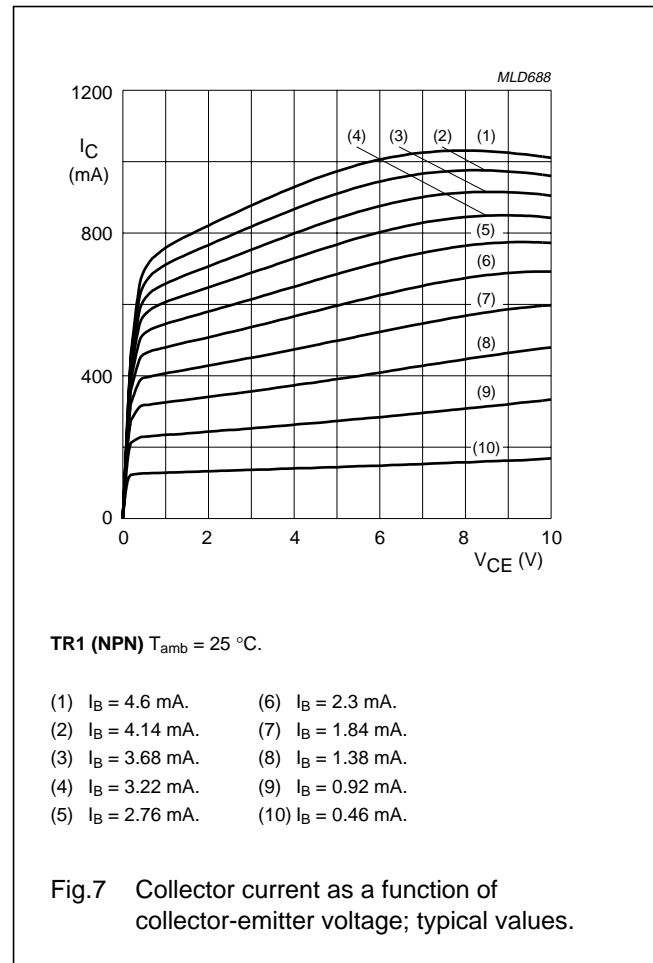
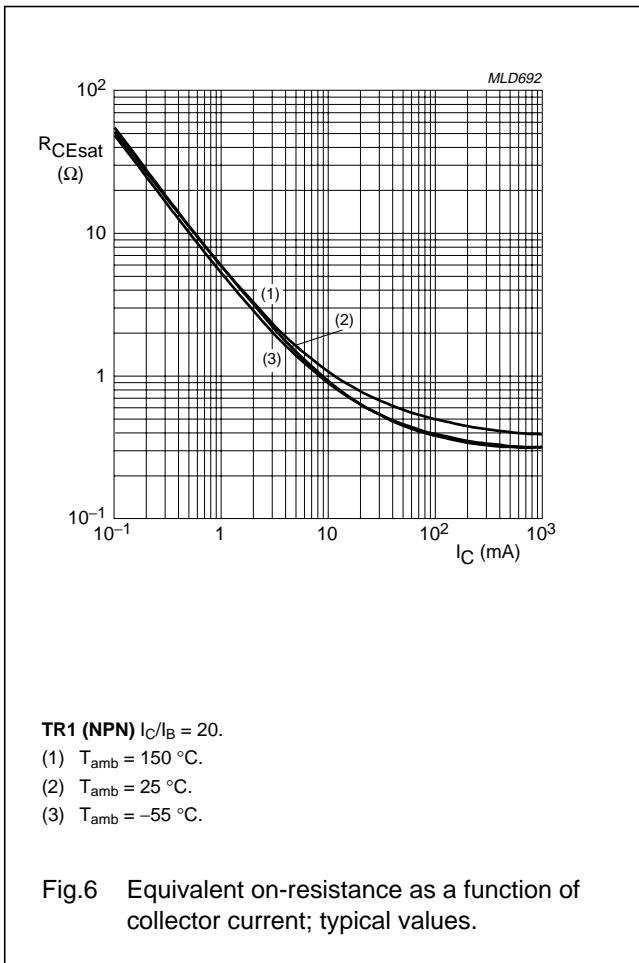
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PBSS2515YPN



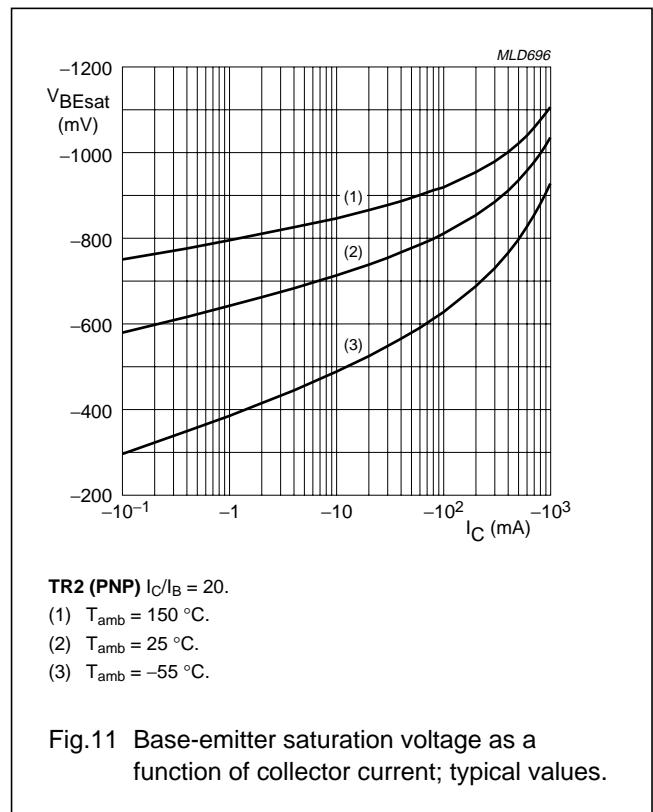
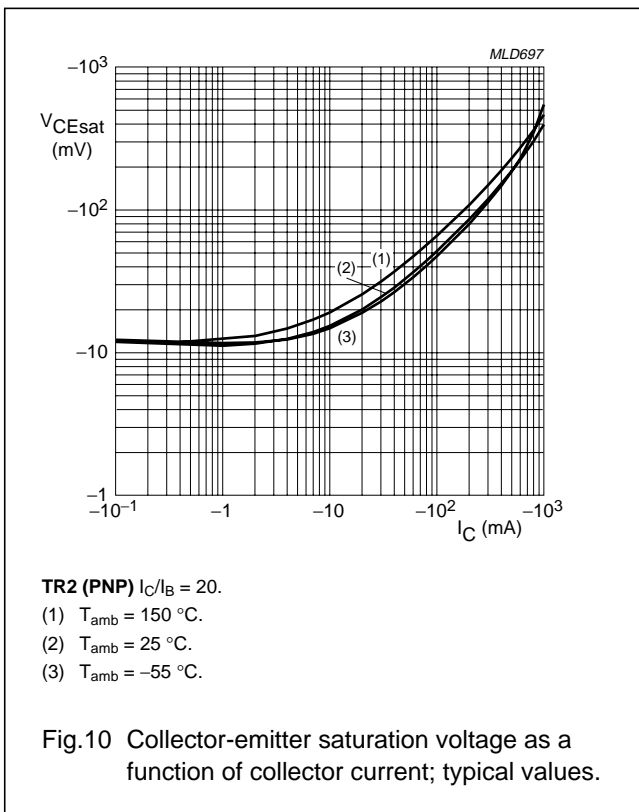
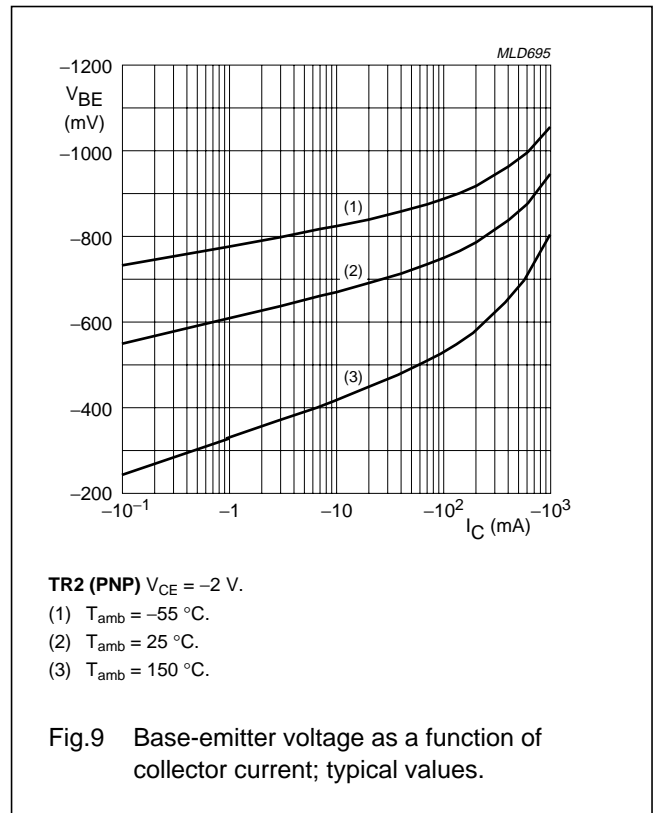
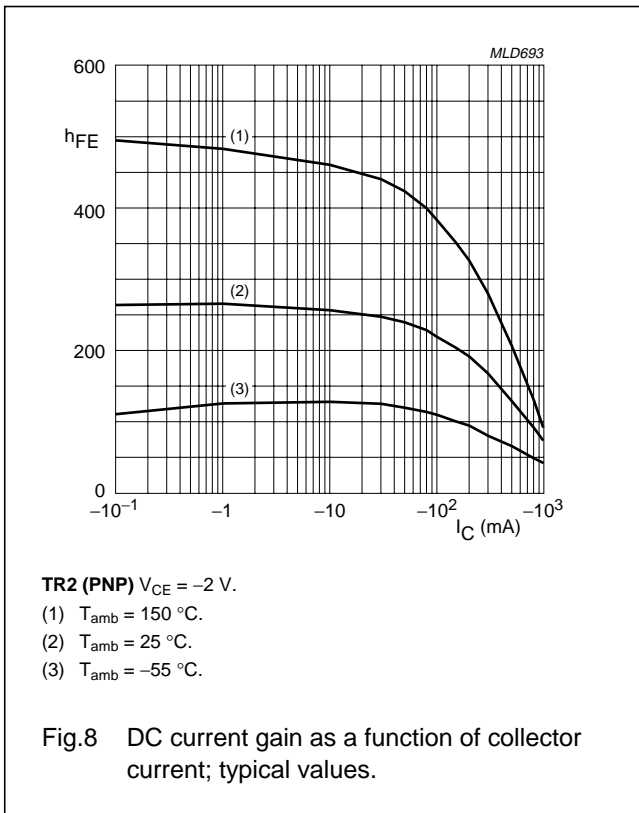
15 V low $V_{CE(sat)}$ NPN/PNP transistor

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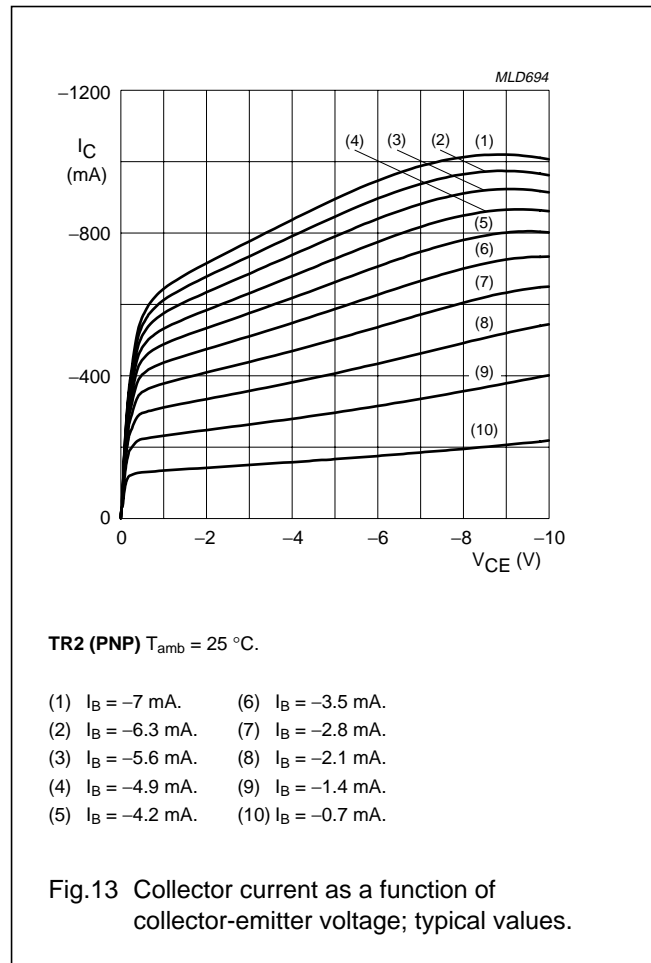
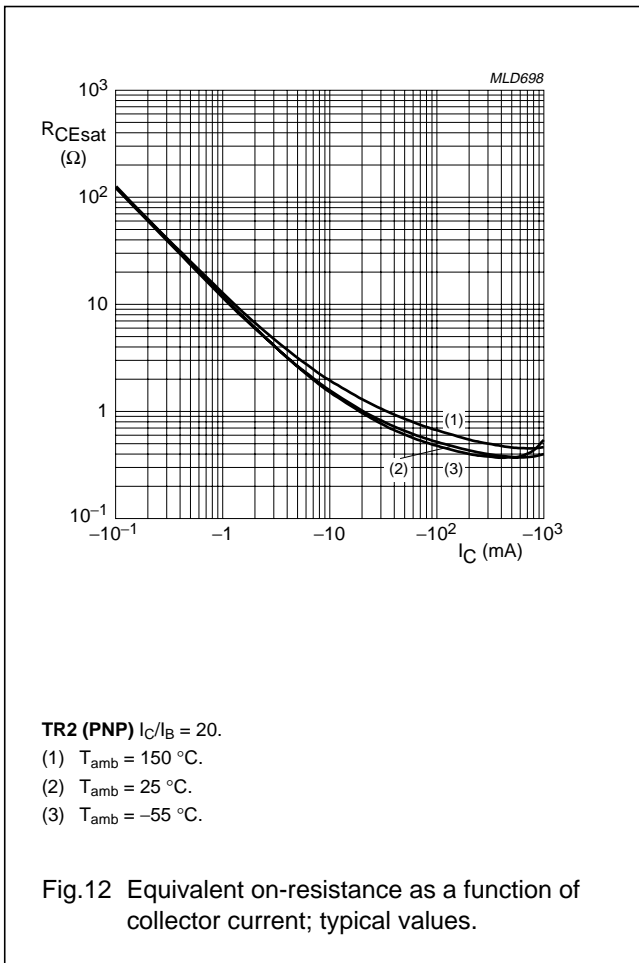
15 V low $V_{CE(sat)}$ NPN/PNP transistor

PBSS2515YPN



15 V low $V_{CE(sat)}$ NPN/PNP transistor

PBSS2515YPN



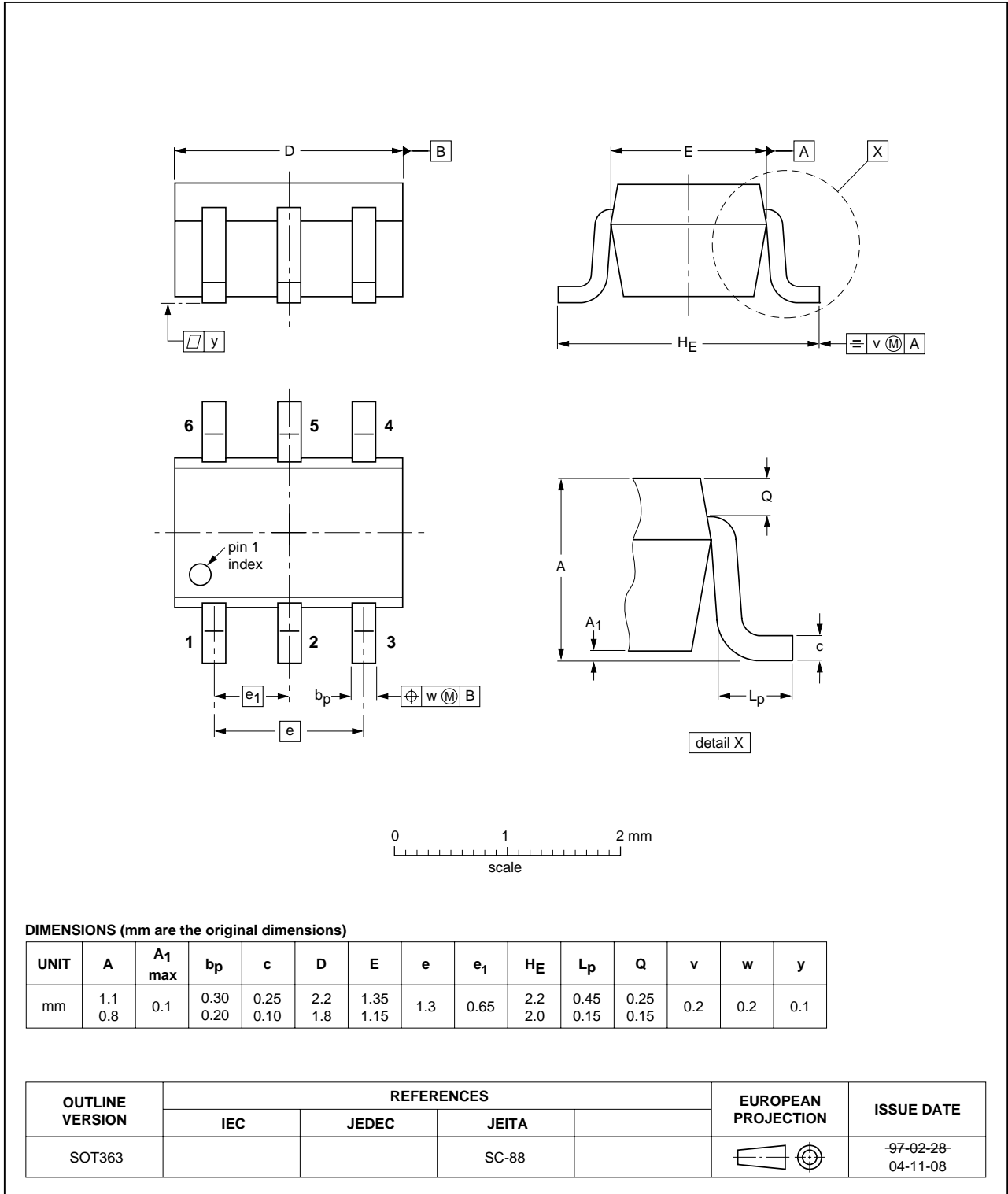
15 V low $V_{CE(sat)}$ NPN/PNP transistor

PBSS2515YPN

PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT363



15 V low $V_{CE(sat)}$ NPN/PNP transistor

PBSS2515YPN

DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	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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Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

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