

DATA SHEET



PBSS3515VS

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

Product data sheet
Supersedes data of 2001 Nov 07

2004 Dec 23

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

PBSS3515VS

FEATURES

- 300 mW total power dissipation
- Very small 1.6×1.2 mm ultra thin package
- Self alignment during soldering due to straight leads
- Low collector-emitter saturation voltage
- High current capability
- Improved thermal behaviour due to flat leads
- Replaces two SC75/SC89 packaged low V_{CEsat} transistors on same PCB area
- Reduces required PCB area
- Reduced pick and place costs.

APPLICATIONS

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

DESCRIPTION

PNP low V_{CEsat} double transistor in a SOT666 plastic package.
 NPN complement: PBSS2515VS.

MARKING

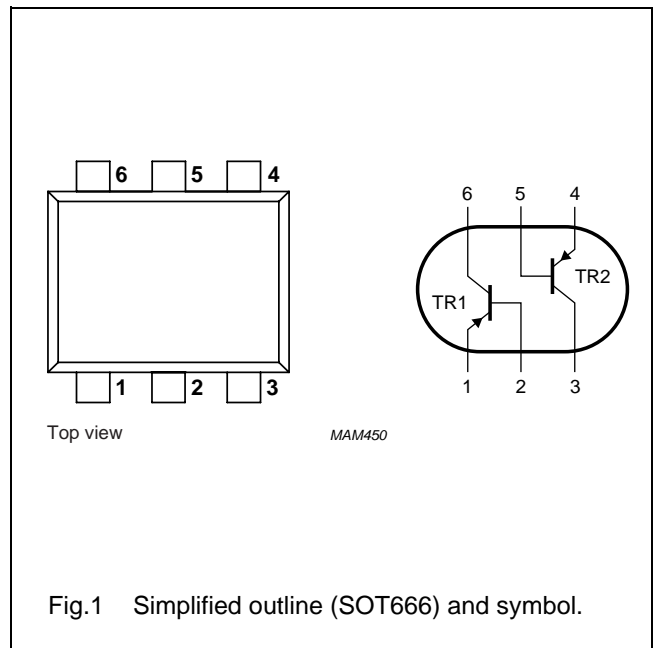
TYPE NUMBER	MARKING CODE
PBSS3515VS	35

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	$m\Omega$

PINNING

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



ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
PBSS3515VS	-	plastic surface mounted package; 6 leads	SOT666

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LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per transistor unless otherwise specified					
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	$T_{amb} \leq 25\text{ °C}$; note 1	–	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	notes 1 and 2	416	K/W

Notes

1. Transistor mounted on an FR4 printed-circuit board.
2. The only recommended soldering method is reflow soldering.

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CHARACTERISTICS

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

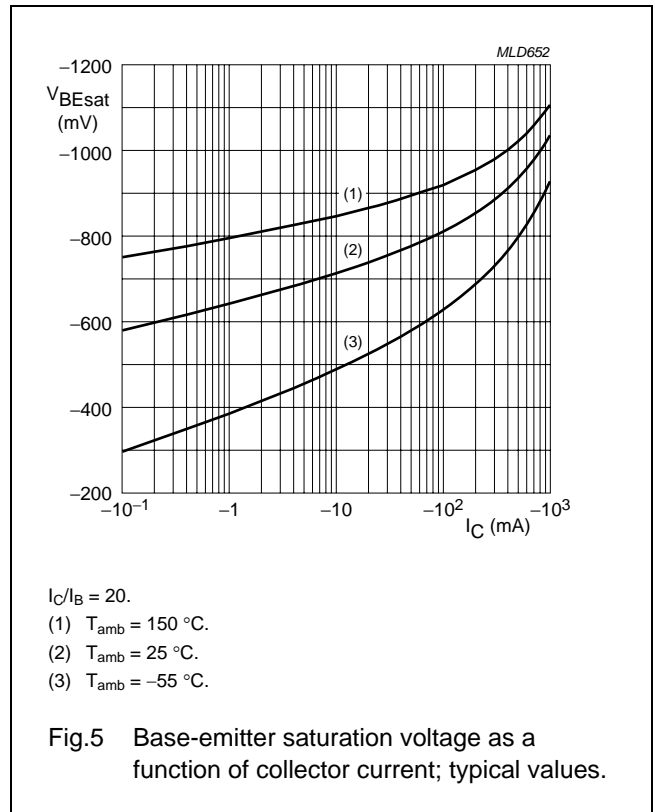
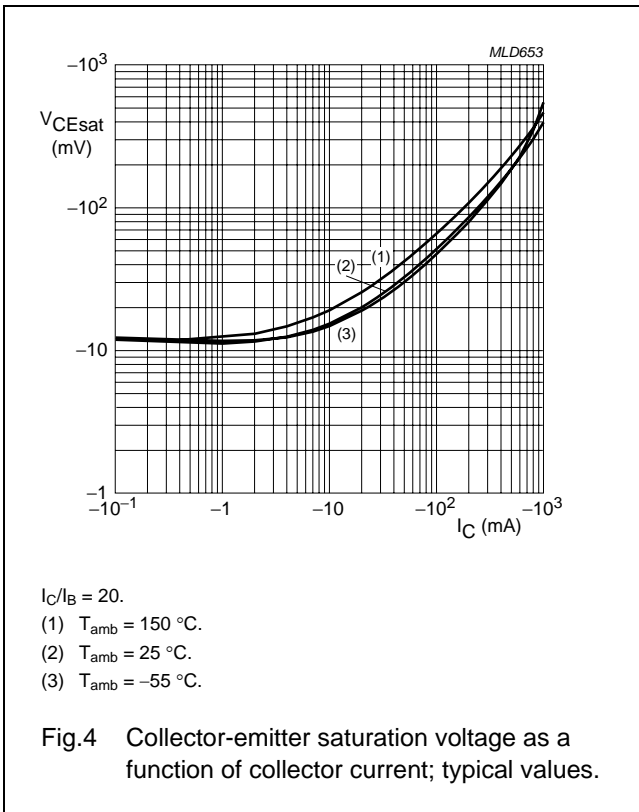
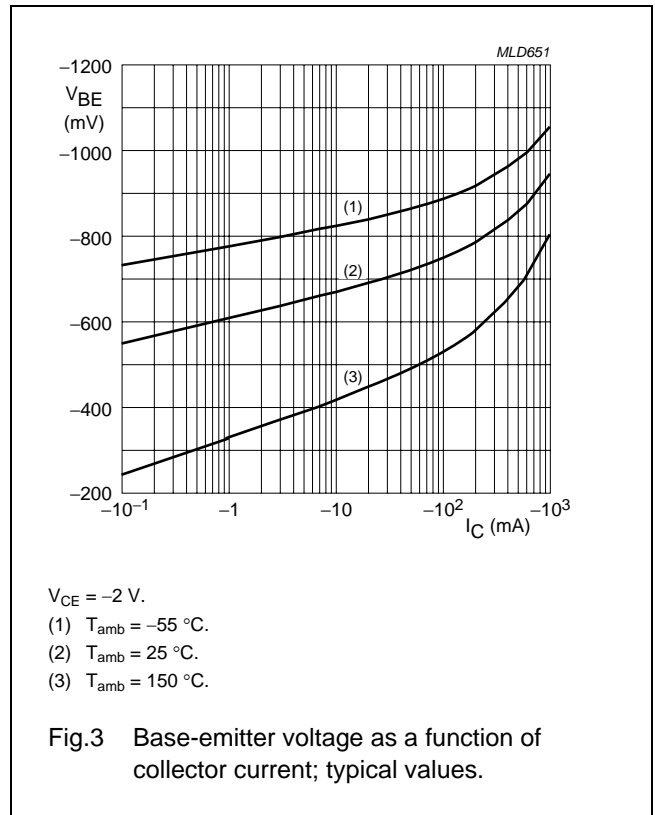
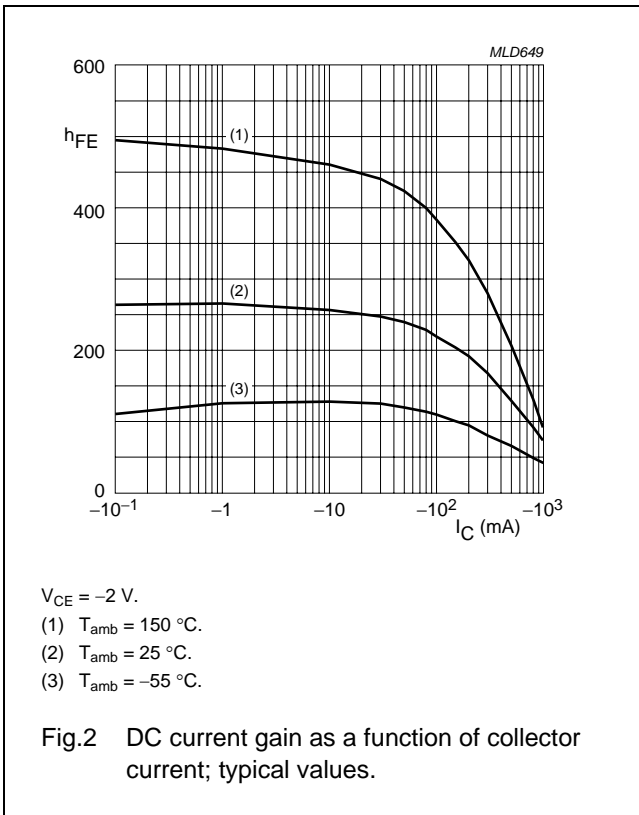
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Per transistor unless otherwise specified						
I_{CBO}	collector-base cut-off current	$V_{CB} = -15\text{ V}; I_E = 0\text{ A}$	–	–	–100	nA
		$V_{CB} = -15\text{ V}; I_E = 0\text{ A}; T_J = 150\text{ °C}$	–	–	–50	μA
I_{EBO}	emitter-base cut-off current	$V_{EB} = -5\text{ V}; I_C = 0\text{ A}$	–	–	–100	nA
h_{FE}	DC current gain	$V_{CE} = -2\text{ V}; I_C = -10\text{ mA}$	200	–	–	
		$V_{CE} = -2\text{ V}; I_C = -100\text{ mA};$ note 1	150	–	–	
		$V_{CE} = -2\text{ V}; I_C = -500\text{ mA};$ 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
		$I_C = -500\text{ mA}; I_B = -50\text{ mA};$ note 1	–	–	–250	mV
R_{CEsat}	equivalent on-resistance	$I_C = -500\text{ mA}; I_B = -50\text{ mA};$ note 1	–	300	<500	$\text{m}\Omega$
V_{BEsat}	base-emitter saturation voltage	$I_C = -500\text{ mA}; I_B = -50\text{ mA};$ note 1	–	–	–1.1	V
V_{BE}	base-emitter turn-on voltage	$V_{CE} = -2\text{ V}; I_C = -100\text{ mA};$ note 1	–	–	–0.9	V
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: $t_p \leq 300\text{ }\mu\text{s}; \delta \leq 0.02$.

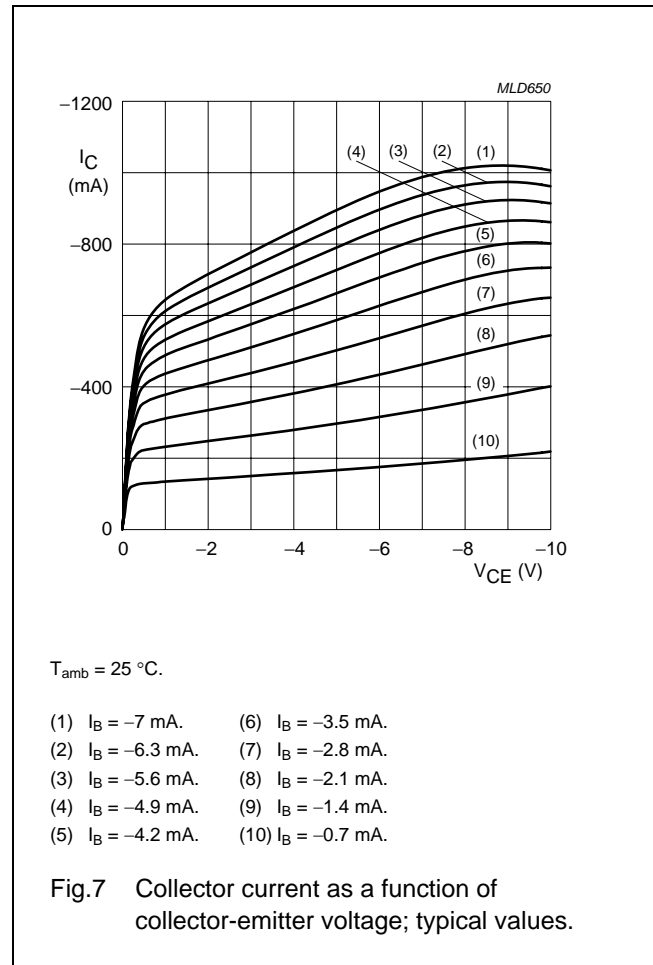
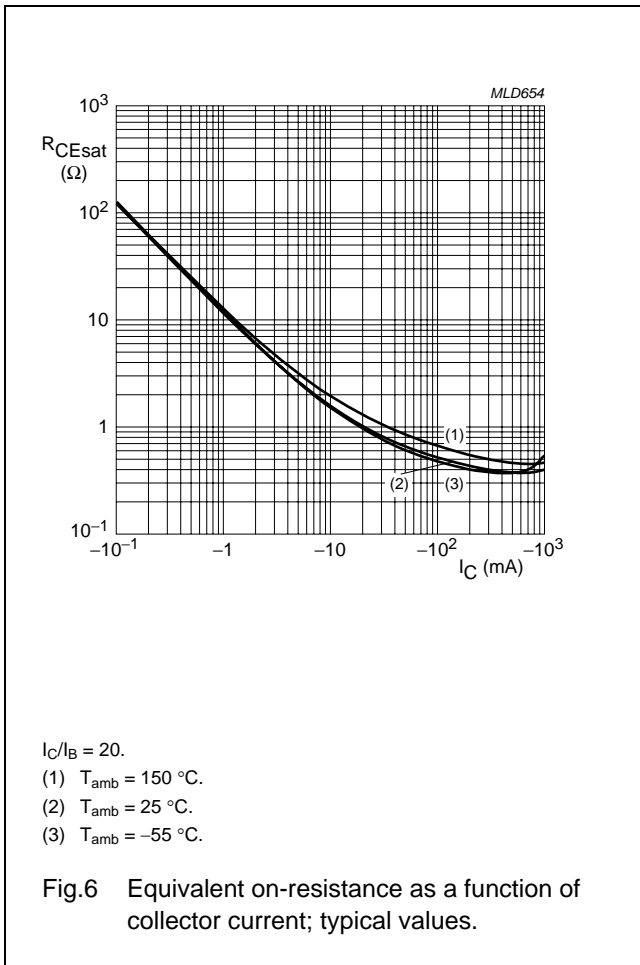
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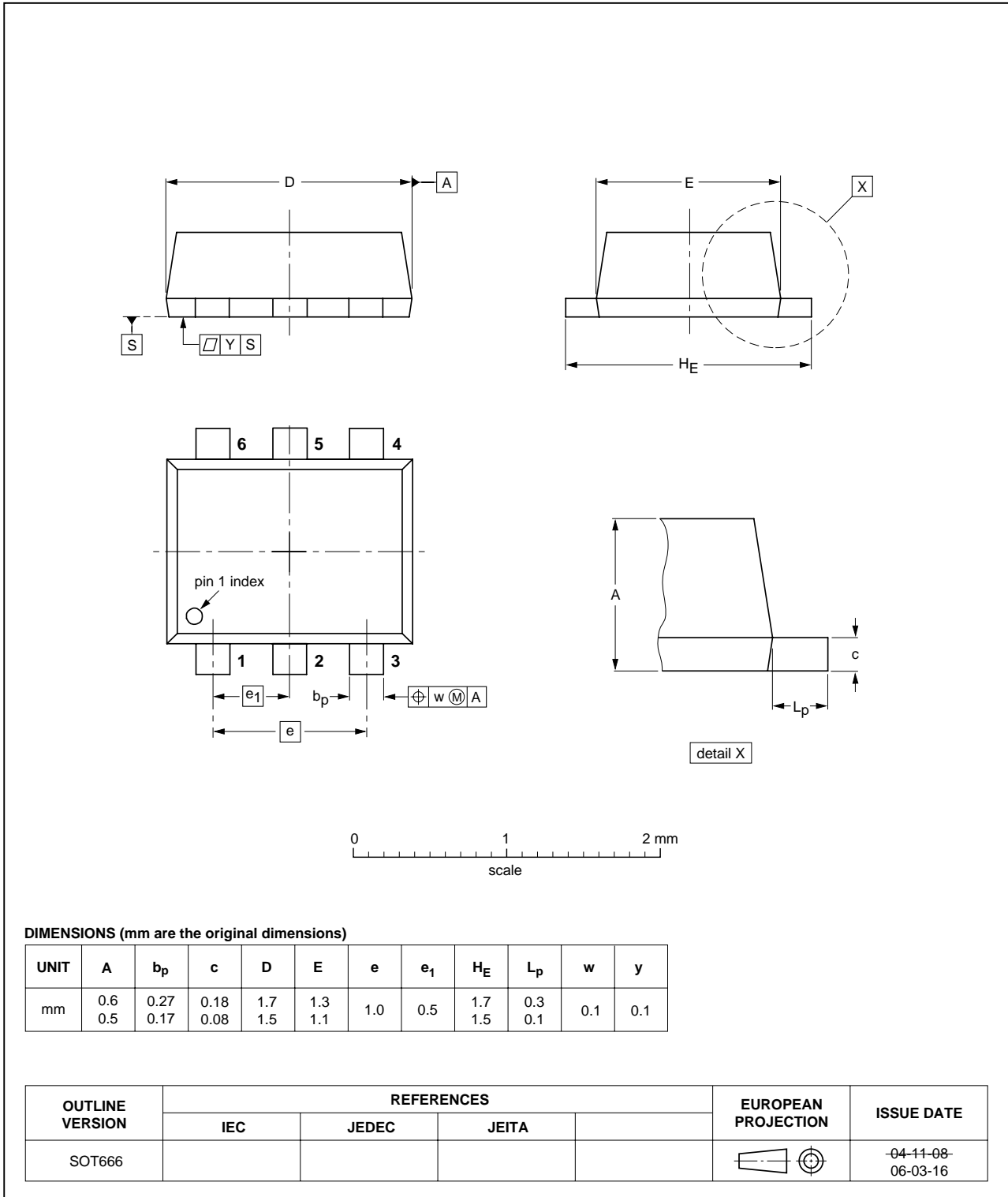
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PACKAGE OUTLINE

Plastic surface-mounted package; 6 leads

SOT666



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DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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NXP Semiconductors

Customer notification

This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content, except for package outline drawings which were updated to the latest version.

Contact information

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