



PBSS3540M

40 V, 0.5 A PNP low V_{CEsat} transistor

31 March 2026

Product data sheet

1. General description

Low V_{CEsat} PNP transistor in a SOT883 leadless ultra small plastic package.

NPN complement: PBSS2540M.

2. Features and benefits

- Low collector-emitter saturation voltage V_{CEsat}
- High collector current capability I_C and I_{CM}
- High efficiency leading to reduced heat generation
- Reduced printed-circuit board requirements
- AEC-Q101 qualified

3. Applications

- Power management:
 - DC-DC converter
 - Supply line switching
 - Battery charger
 - LCD backlighting
- Peripheral driver:
 - Driver in low supply voltage applications (e.g. lamps and LEDs)
 - Inductive load drivers (e.g. relays, buzzers and motors)

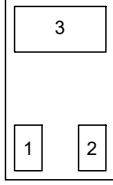
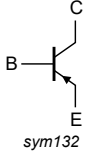
4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V _{CEO}	collector-emitter voltage	open base	-	-	-40	V
I _C	collector current		-	-	-500	mA
I _{CM}	peak collector current	single pulse; t _p ≤ 1 ms	-	-	-1	A
R _{CEsat}	collector-emitter saturation resistance	I _C = -500 mA; I _B = -50 mA; pulsed; t _p ≤ 300 μs; δ ≤ 0.02; T _{amb} = 25 °C	-	440	700	mΩ

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	B	base	 <p>Transparent top view DFN1006-3 (SOT883)</p>	 <p>sym132</p>
2	E	emitter		
3	C	collector		

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
PBSS3540M	DFN1006-3	plastic, leadless ultra small package; 3 terminals; 0.35 mm pitch; 1 mm x 0.6 mm x 0.48 mm body	SOT883

7. Marking

Table 4. Marking codes

Type number	Marking code
PBSS3540M	DA

8. Limiting values

Table 5. 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	-	-40	V	
V_{CEO}	collector-emitter voltage	open base	-	-40	V	
V_{EBO}	emitter-base voltage	open collector	-	-6	V	
I_C	collector current		-	-500	mA	
I_{CM}	peak collector current	single pulse; $t_p \leq 1$ ms	-	-1	A	
I_{BM}	peak base current		-	-100	mA	
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C	[1]	-	250	mW
			[2]	-	430	mW
T_j	junction temperature		-	150	°C	
T_{amb}	ambient temperature		-65	150	°C	
T_{stg}	storage temperature		-65	150	°C	

[1] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint, with 60 µm copper strip line.

[2] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 1 cm².

9. Thermal characteristics

Table 6. Thermal characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	-	500	K/W
			[2] [3]	-	-	290	K/W

[1] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint, with 60 μm copper strip line.

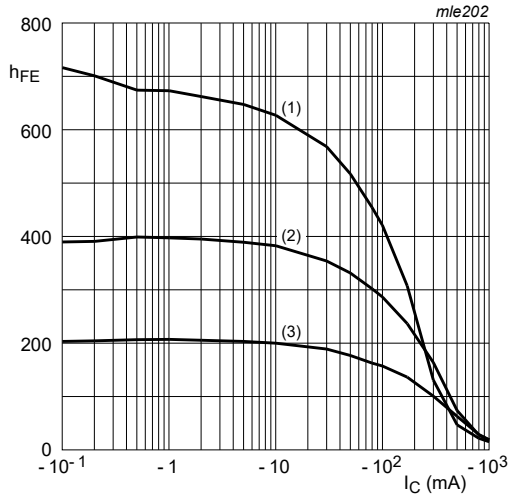
[2] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 1 cm^2 .

[3] Operated under pulsed conditions: duty cycle $\delta \leq 20\%$, pulse width $t_p \leq 30$ ms.

10. Characteristics

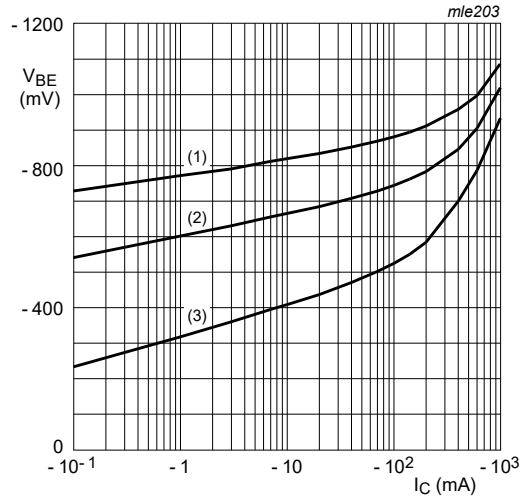
Table 7. Characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
I_{CBO}	collector-base cut-off current	$V_{CB} = -30$ V; $I_E = 0$ A; $T_{amb} = 25$ °C		-	-	-100	nA
		$V_{CB} = -30$ V; $I_E = 0$ A; $T_j = 150$ °C		-	-	-50	μA
I_{EBO}	emitter-base cut-off current	$V_{EB} = -5$ V; $I_C = 0$ A; $T_{amb} = 25$ °C		-	-	-100	nA
h_{FE}	DC current gain	$V_{CE} = -2$ V; $I_C = -10$ mA; $T_{amb} = 25$ °C		200	-	-	
		$V_{CE} = -2$ V; $I_C = -100$ mA; pulsed; $t_p \leq 300$ μs ; $\delta \leq 0.02$; $T_{amb} = 25$ °C		150	-	-	
		$V_{CE} = -2$ V; $I_C = -500$ mA; pulsed; $t_p \leq 300$ μs ; $\delta \leq 0.02$; $T_{amb} = 25$ °C		40	-	-	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -10$ mA; $I_B = -0.5$ mA; $T_{amb} = 25$ °C		-	-	-50	mV
		$I_C = -100$ mA; $I_B = -5$ mA; $T_{amb} = 25$ °C		-	-	-130	mV
		$I_C = -200$ mA; $I_B = -10$ mA; $T_{amb} = 25$ °C		-	-	-200	mV
		$I_C = -500$ mA; $I_B = -50$ mA; pulsed; $t_p \leq 300$ μs ; $\delta \leq 0.02$; $T_{amb} = 25$ °C		-	-	-350	mV
R_{CEsat}	collector-emitter saturation resistance			-	440	700	$\text{m}\Omega$
V_{BEsat}	base-emitter saturation voltage			-	-	-1.2	V
V_{BEon}	base-emitter turn-on voltage	$V_{CE} = -2$ V; $I_C = -100$ mA; pulsed; $t_p \leq 300$ μs ; $\delta \leq 0.02$; $T_{amb} = 25$ °C		-	-	-1.1	V
f_T	transition frequency	$V_{CE} = -5$ V; $I_C = -100$ mA; $f = 100$ MHz; $T_{amb} = 25$ °C		100	300	-	MHz
C_c	collector capacitance	$V_{CB} = -10$ V; $I_E = 0$ A; $i_e = 0$ A; $f = 1$ MHz; $T_{amb} = 25$ °C		-	-	10	pF



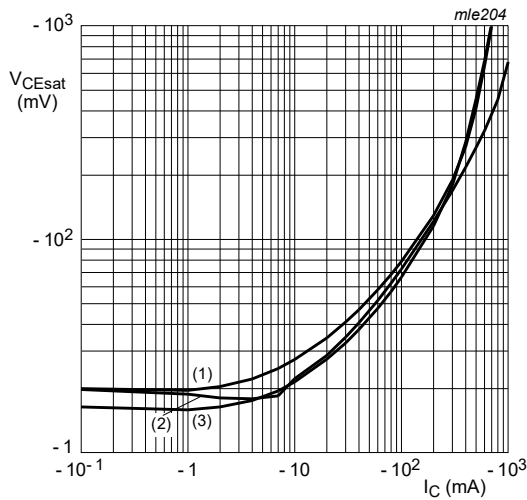
$V_{CE} = -2\text{ V}$
 (1) $T_{amb} = 150\text{ °C}$
 (2) $T_{amb} = 25\text{ °C}$
 (3) $T_{amb} = -55\text{ °C}$

Fig. 1. DC current gain as a function of collector current; typical values



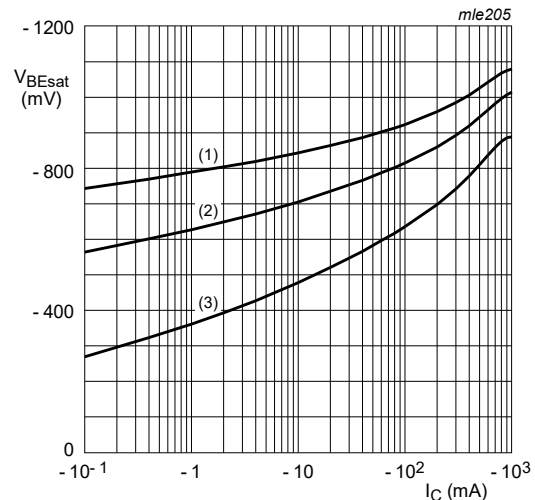
$V_{CE} = -2\text{ V}$
 (1) $T_{amb} = -55\text{ °C}$
 (2) $T_{amb} = 25\text{ °C}$
 (3) $T_{amb} = 150\text{ °C}$

Fig. 2. Base-emitter voltage as a function of collector current; typical values



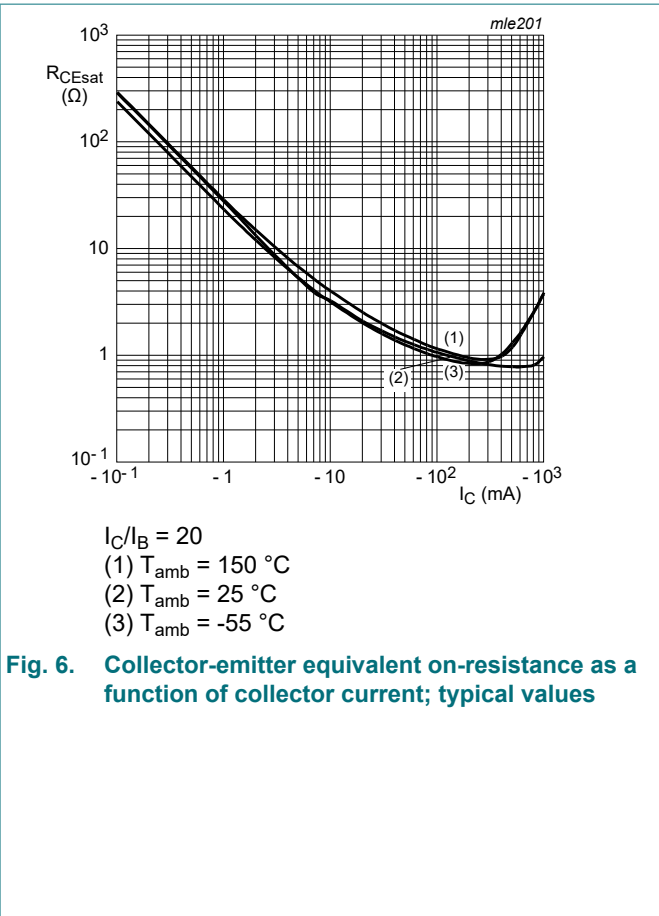
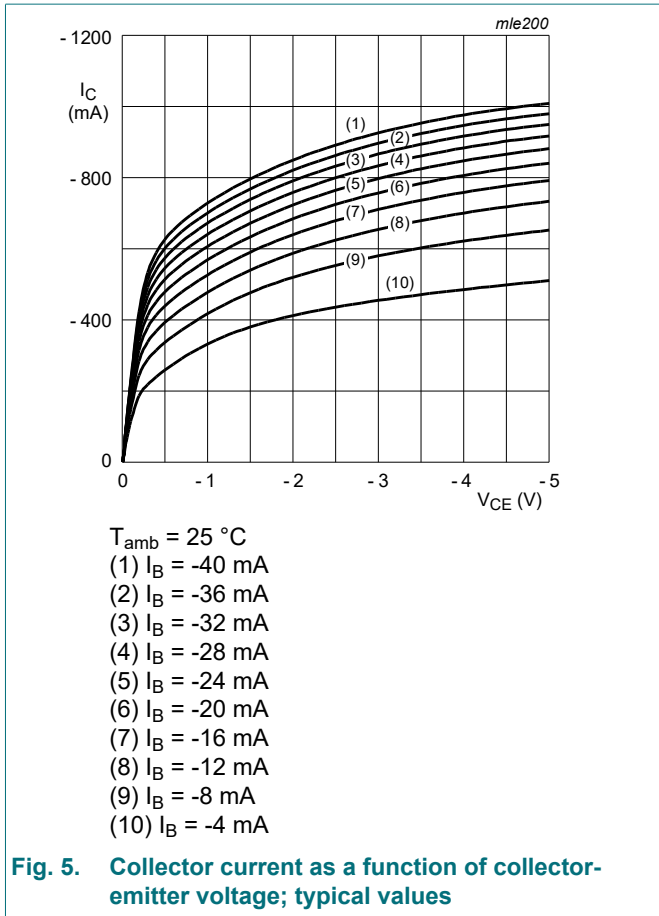
$I_C/I_B = 20$
 (1) $T_{amb} = 150\text{ °C}$
 (2) $T_{amb} = 25\text{ °C}$
 (3) $T_{amb} = -55\text{ °C}$

Fig. 3. Collector-emitter saturation voltage as a function of collector current; typical values



$I_C/I_B = 20$
 (1) $T_{amb} = 150\text{ °C}$
 (2) $T_{amb} = 25\text{ °C}$
 (3) $T_{amb} = -55\text{ °C}$

Fig. 4. Base-emitter saturation voltage as a function of collector current; typical values

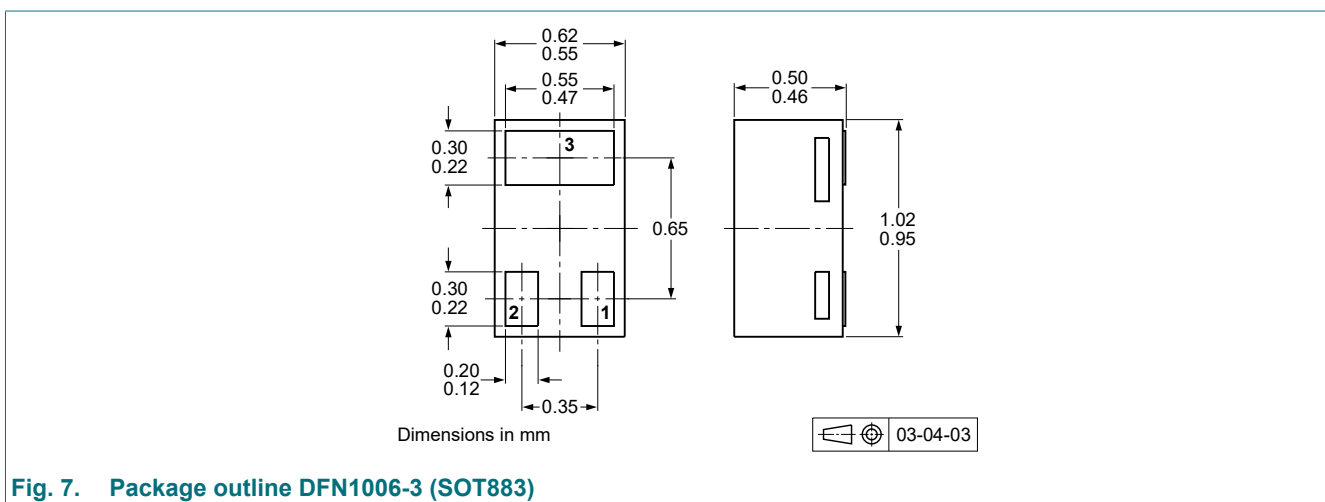


11. Test information

Quality information

This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard *Q101 - Stress test qualification for discrete semiconductors*, and is suitable for use in automotive applications.

12. Package outline



13. Soldering

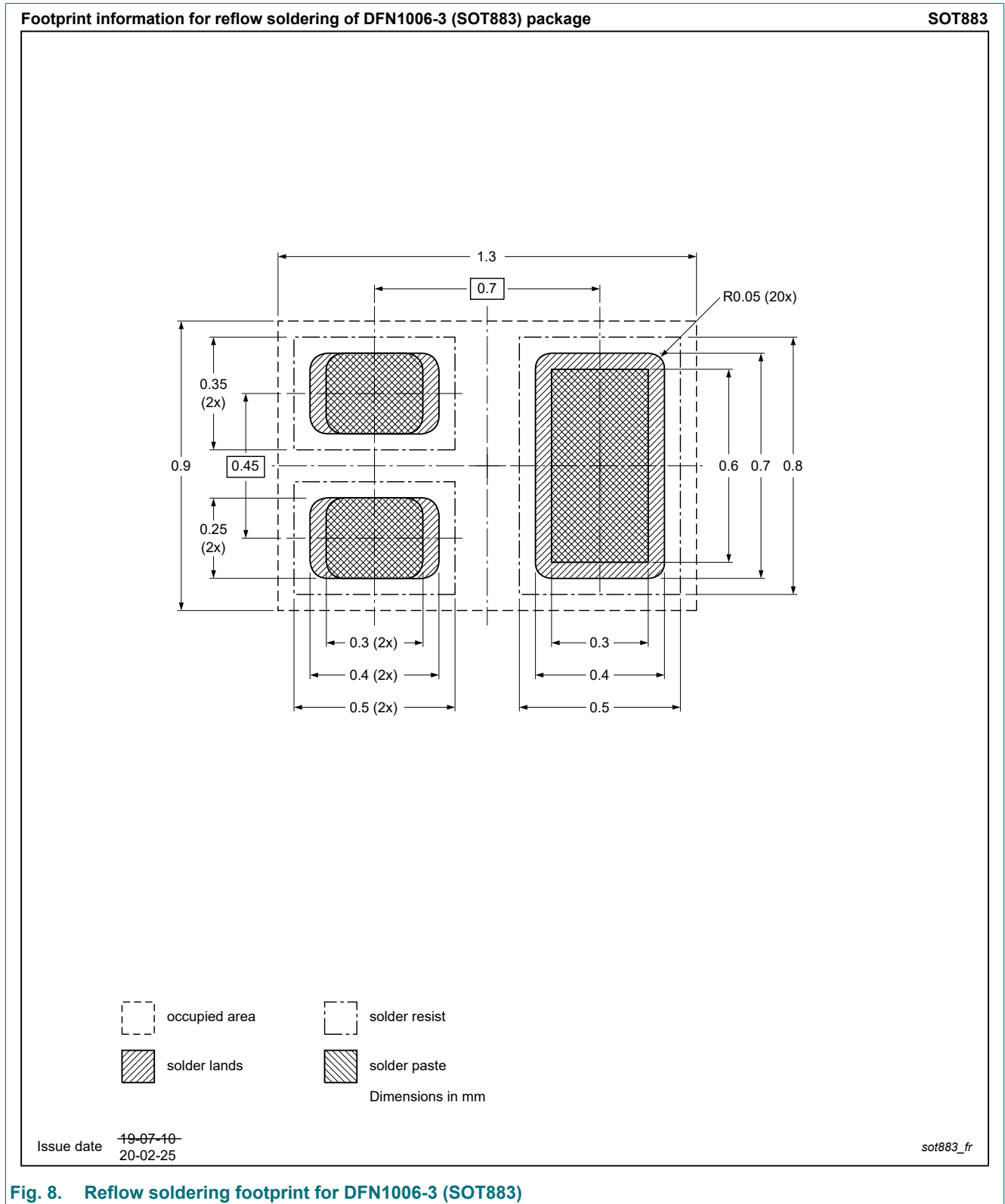


Fig. 8. Reflow soldering footprint for DFN1006-3 (SOT883)

14. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
PBSS3540M v.2	20260331	Product data sheet	-	PBSS3540M v.1
Modifications:	<ul style="list-style-type: none">The format of this data sheet has been redesigned to comply with the identity guidelines of Nexperia.Legal texts have been adapted to the new company name where appropriate.			
PBSS3540M v.1	20030812	Product data sheet	-	-

15. Legal information

Data sheet status

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

- [1] Please consult the most recently issued document before initiating or completing a design.
- [2] The term 'short data sheet' is explained in section "Definitions".
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For sales office addresses, please send an email to: salesaddresses@nexperia.com
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