

2SA2040 / 2SC5707**SANYO****High Current Switching Applications****Applications**

- DC-DC converter, relay drivers, lamp drivers, motor drivers, strobes.

Features

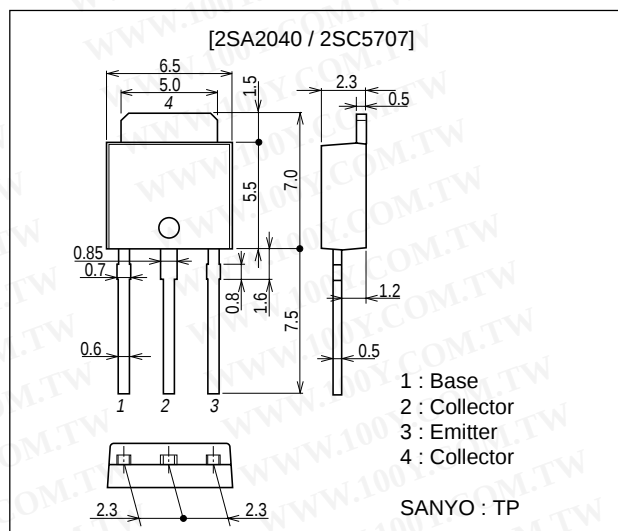
- Adoption of FBET, MBIT process.
- Large current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- High allowable power dissipation.

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Package Dimensions

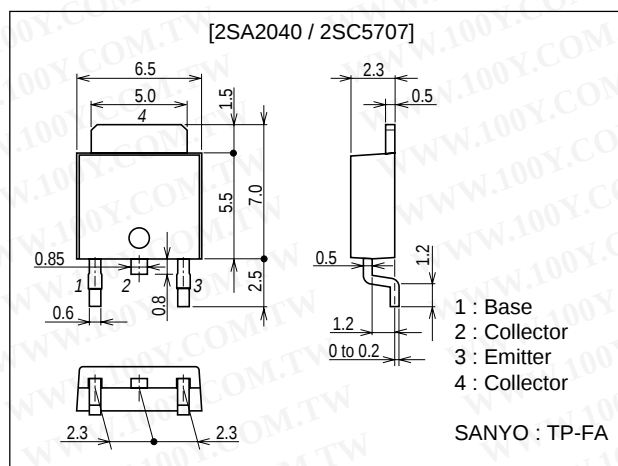
unit : mm

2045B

**Package Dimensions**

unit : mm

2044B



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SANYO Electric Co.,Ltd. Semiconductor Company

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Specifications

Note*() : 2SA2040

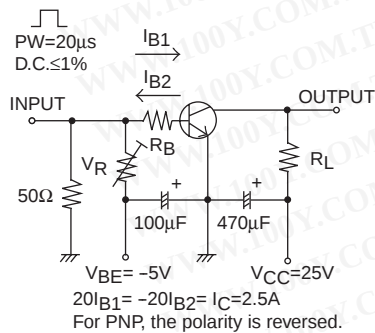
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		$(-50)80$	V
Collector-to-Emitter Voltage	V_{CES}		$(-50)80$	V
Collector-to-Emitter Voltage	V_{CEO}		$(-)50$	V
Emitter-to-Base Voltage	V_{EB0}		$(-)6$	V
Collector Current	I_C		$(-)8$	A
Collector Current (Pulse)	I_{CP}		$(-)11$	A
Base Current	I_B		$(-)2$	A
Collector Dissipation	P_C		1.0	W
		$T_c=25^\circ\text{C}$	15	W
Junction Temperature	T_J		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to $+150$	$^\circ\text{C}$

Electrical Characteristics at $T_a=25^\circ\text{C}$

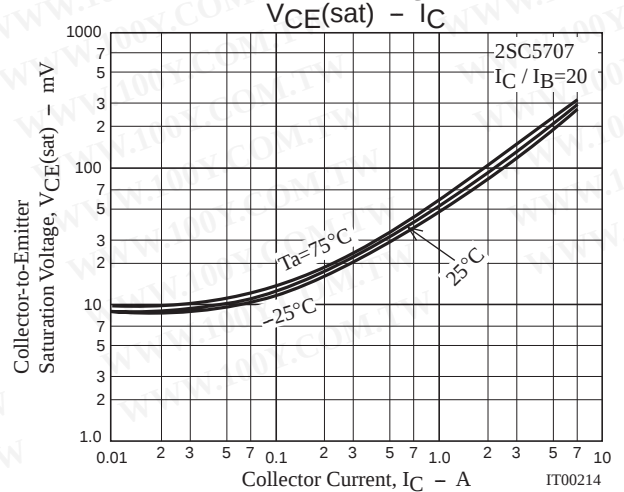
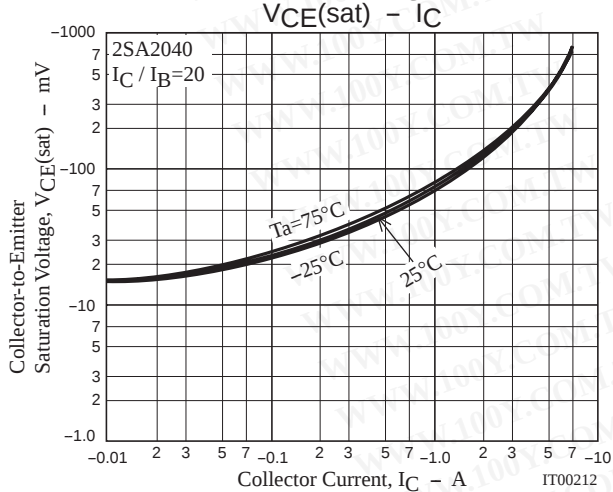
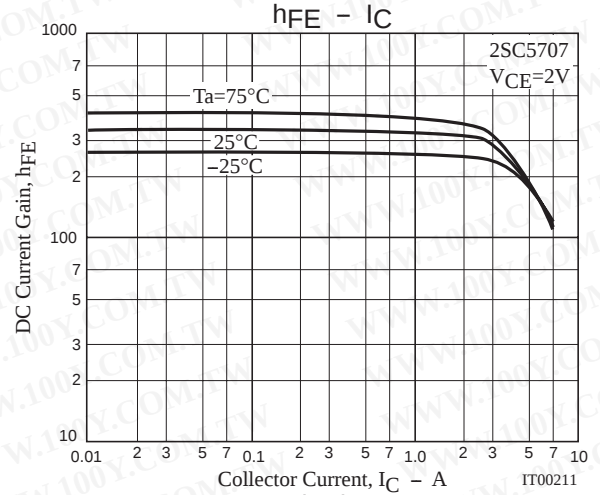
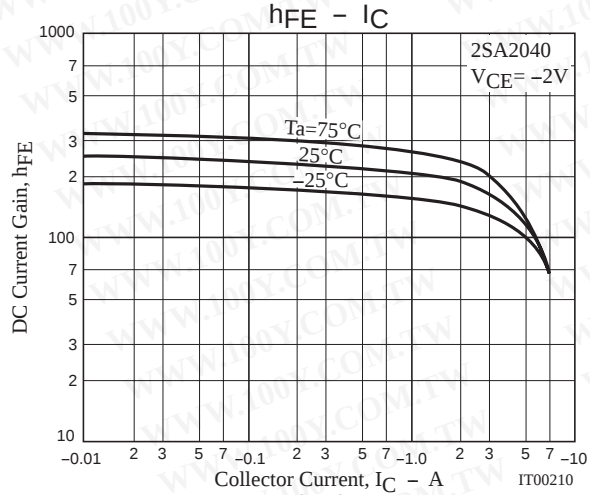
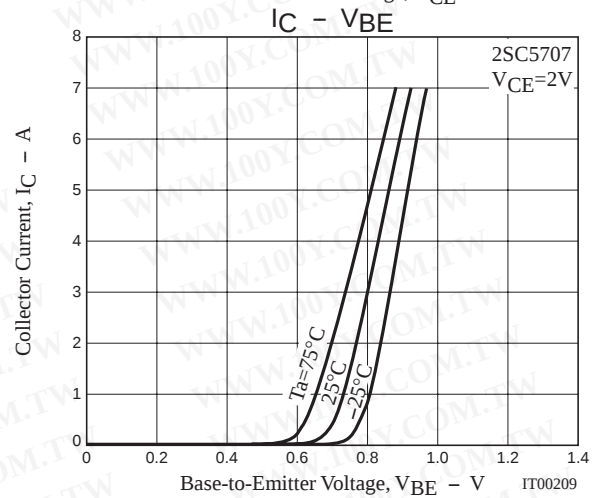
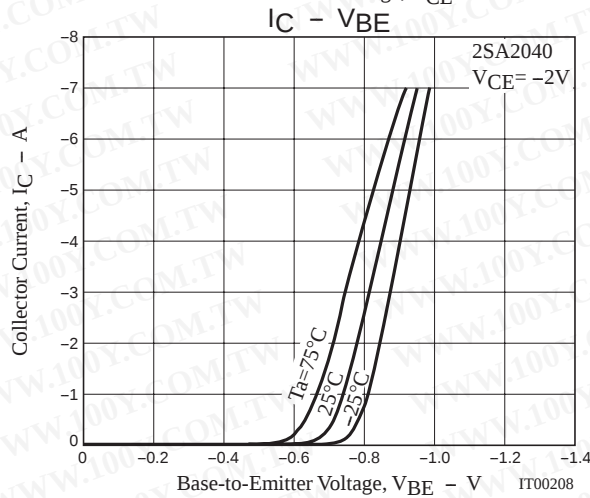
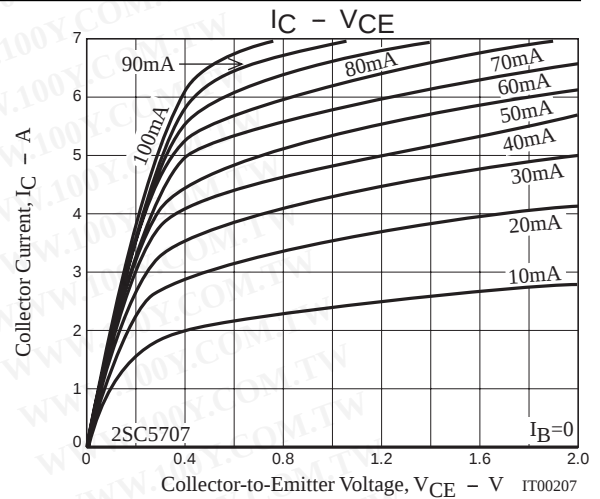
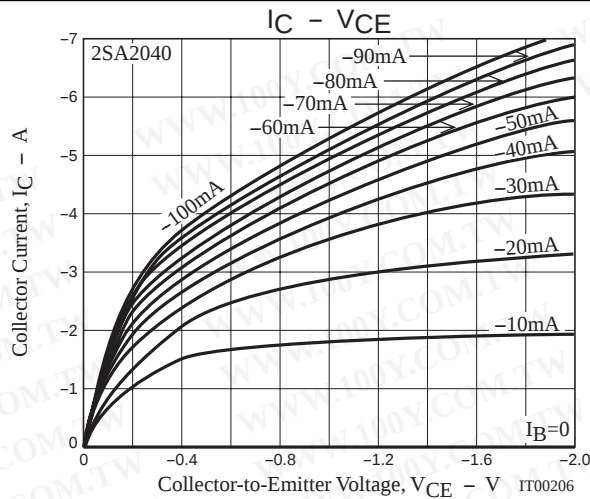
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)40\text{V}, I_E = 0$			$(-)0.1$	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4\text{V}, I_C = 0$			$(-)0.1$	μA
DC Current Gain	h_{FE}	$V_{CE} = (-)2\text{V}, I_C = (-)500\text{mA}$	200		560	
Gain-Bandwidth Product	f_T	$V_{CE} = (-)10\text{V}, I_C = (-)500\text{mA}$		(290)330		MHz
Output Capacitance	C_{ob}	$V_{CB} = (-)10\text{V}, f = 1\text{MHz}$		(50)28		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)3.5\text{A}, I_B = (-)175\text{mA}$		$(-230)160$	$(-390)240$	mV
		$I_C = (-)2\text{A}, I_B = (-)40\text{mA}$		$(-240)110$	$(-400)170$	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)2\text{A}, I_B = (-)40\text{mA}$		$(-)0.83$	$(-)1.2$	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu\text{A}, I_E = 0$	$(-50)80$			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = (-)100\mu\text{A}, R_{BE} = \infty$	80			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1\text{mA}, R_{BE} = \infty$	$(-)50$			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu\text{A}, I_C = 0$	$(-)6$			V
Turn-On Time	t_{on}	See specified test circuit.		(40)30		ns
Storage Time	t_{stg}	See specified test circuit.		(225)420		ns
Fall Time	t_f	See specified test circuit.		25		ns

Swicthing Time Test Circuit

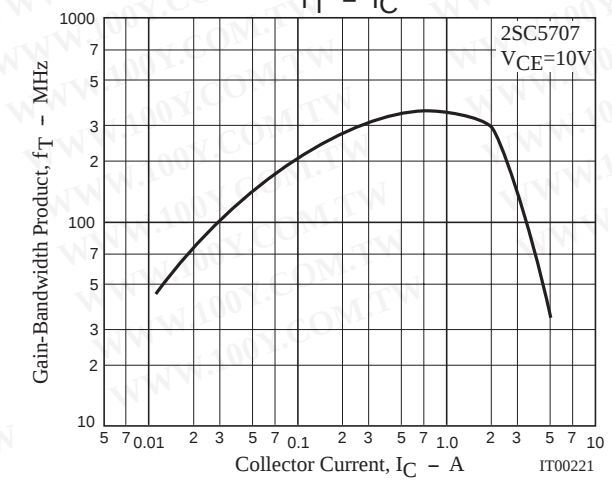
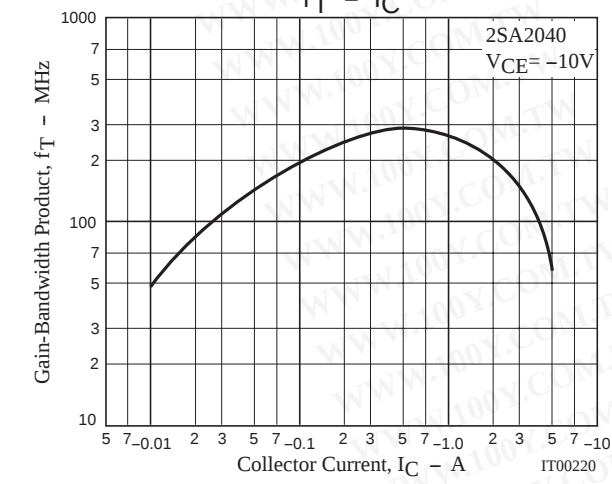
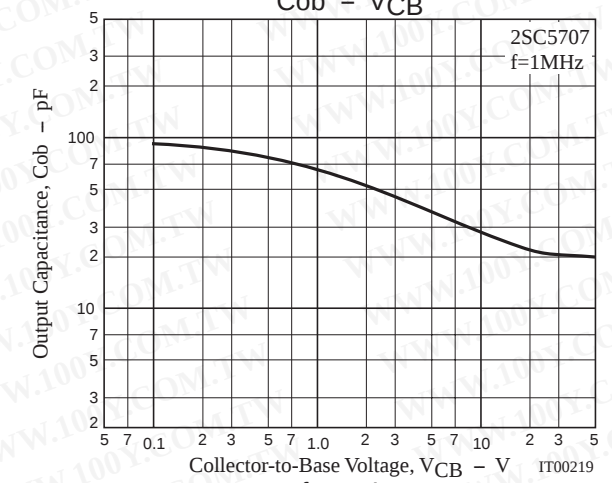
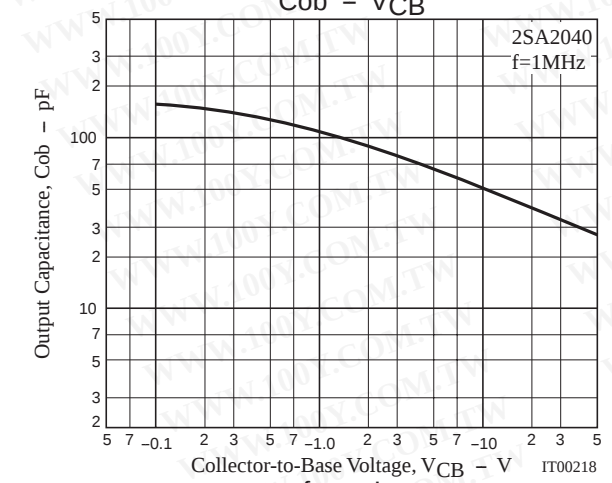
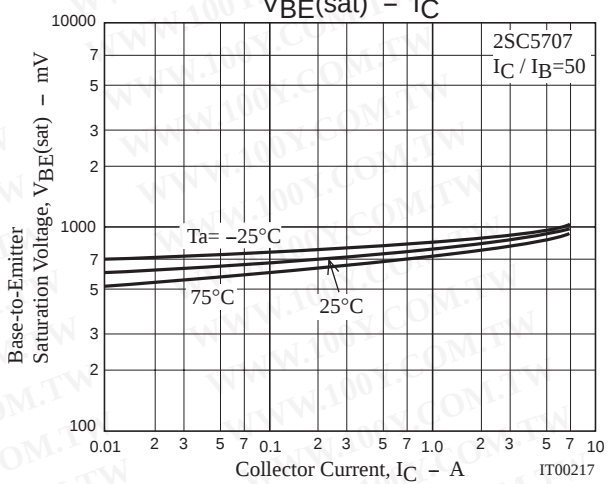
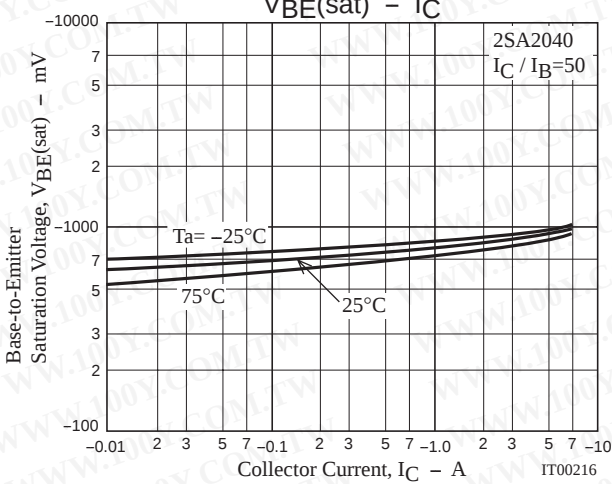
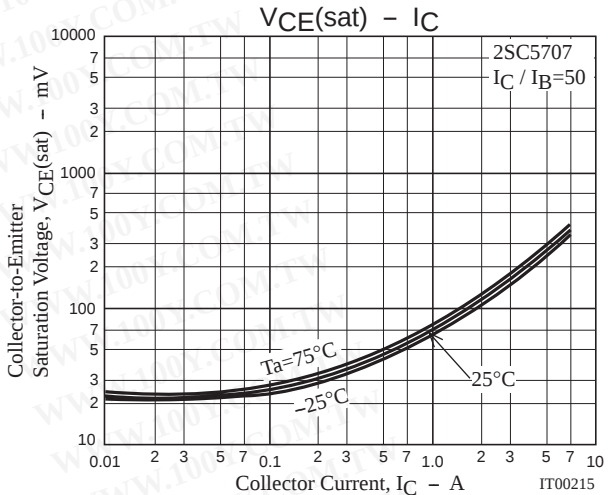
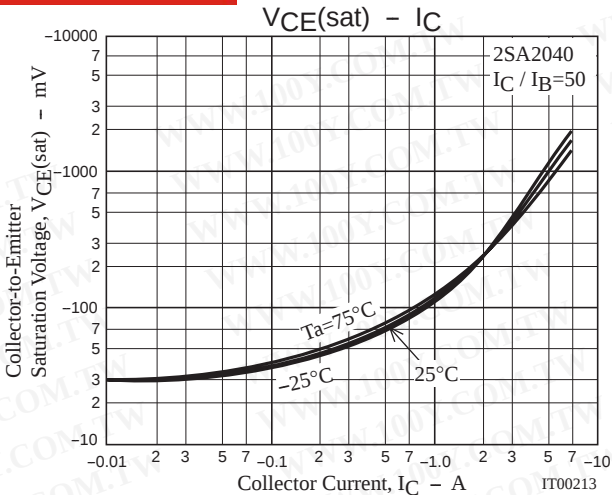


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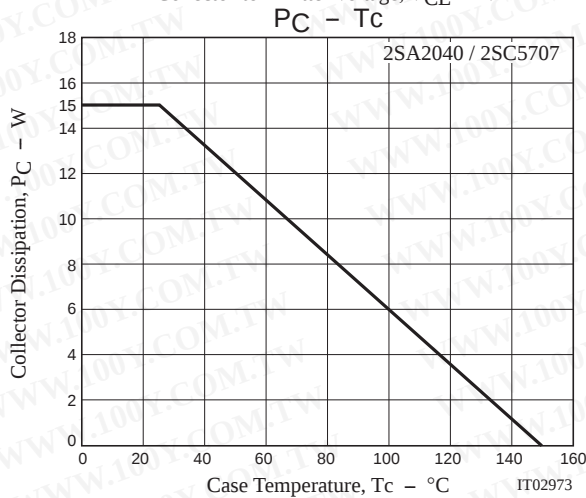
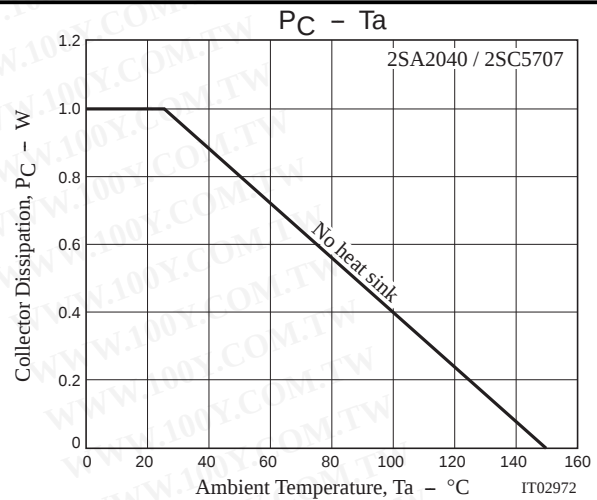
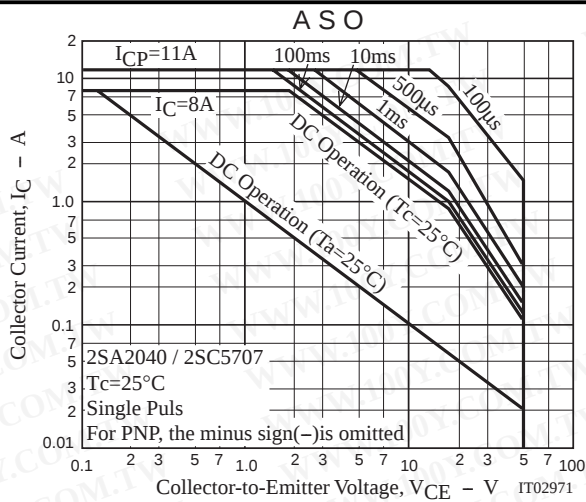
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