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®

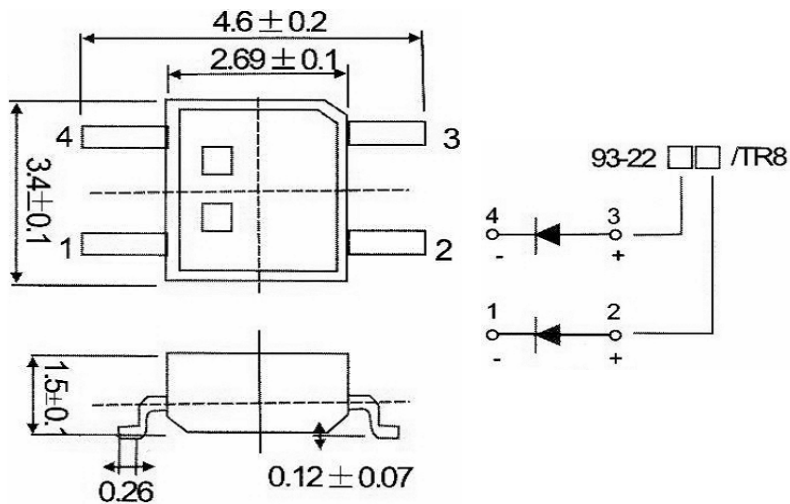## Applications

- Interior automotive lighting
- Optical indicators
- Communication Products
- Backlighting
- Toys

Technical Drawing

4.6 ± 0.2
2.69 ± 0.1
3.4 ± 0.1
1.5 ± 0.1
0.26
0.12 ± 0.07

93-22 ☐☐ /TR8

4 —▷|— 3
-          +

1 —▷|— 2
-          +

Recommended Soldering Pattern

Notes :

All dimensions in mm tolerance is
± 0.1mm unless otherwise noted.

				Reflector SMT LED			
				Green		*Red*	
				Part No.:		**M11H4001**	
				Customer:			
DRW:	Dong	CHKD	Chang	MATL:	Chui	DATE	06.12.2009
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Absolute Maximum Ratings   Ta=25°C

Item	Symbol	GaP	AlGaInP	Unit
Power Dissipation	P_D	---		mW
DC Forward Current	I_F	20		mA
Plused Forward Current	$I_{FP}*$	---		mA
Reverse Voltage	V_R	---		V
Operating Temperature	T_{OP}	---		°C
Storage Temperature	T_{ST}	-55 to 100		°C

* 0.1 msec pulse, 10% duty cycle

Electrcal / Optical Characteristics I_F=20mA   Ta=25°C

Ermitting Color		Green	Red	
Material		GaP	AlGaInP	
Forward Voltage	typ.	2.1	2.0	V_F
	max.	2.4	2.4	V_F
Wavelength typ.	λD	571	639	nm
	λP	---	---	nm
	Δλ	---	---	nm
Color Temperature	min.	---	---	K
	max.	---	---	K
Luminous Intensity *	min.	24	24	mcd
	typ.	40	40	mcd
Reverse Current	max.	---		µA
Viewing Angle	2Θ1/2	130		

* Per NIST standards

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Curve
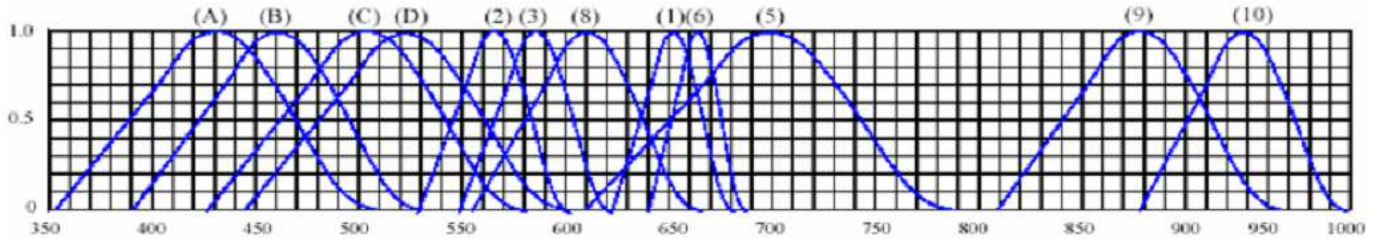
Wavelength (nm)

Relative Intensity vs Wavelength

(1)	GaAsP / GaAs 655nm Red	(9)	GaAlAs 880nm
(2)	GaP 568nm Yellow Green	(10)	GaAs & GaAlAs 940nm
(3)	GaAsP / GaP 585nm Yellow	(A)	GaN 430nm Blue
(4)	GaAsP / GaP 635nm Orange & Red	(B)	InGaN 470nm Blue
(5)	GaP 700nm Red	(C)	InGaN 502nm Green
(6)	GaAlAs / GaAs 660nm Red	(D)	InGaN 523nm Green
(8)	GaAsP / GaP 610nm Red		

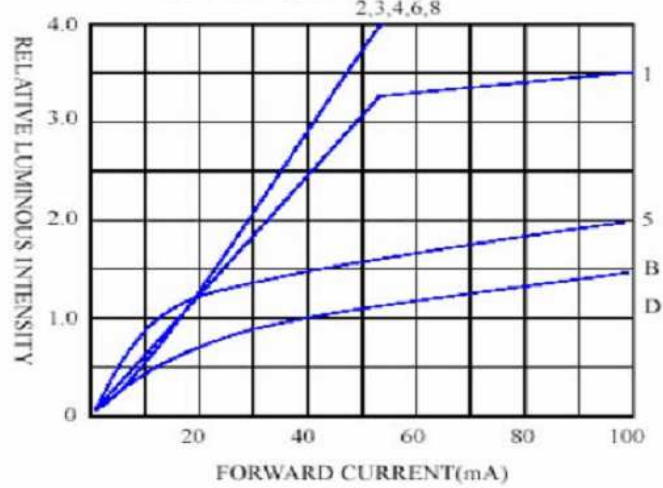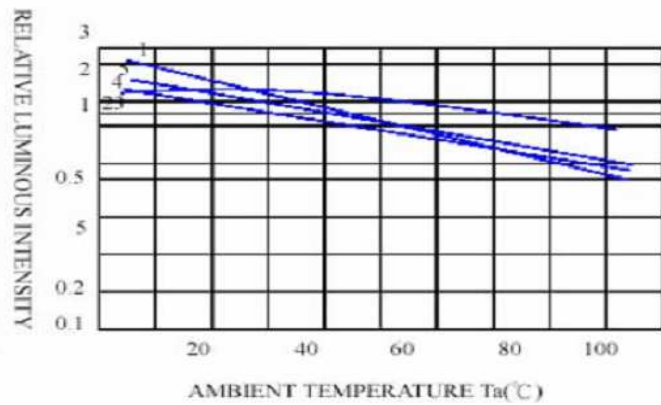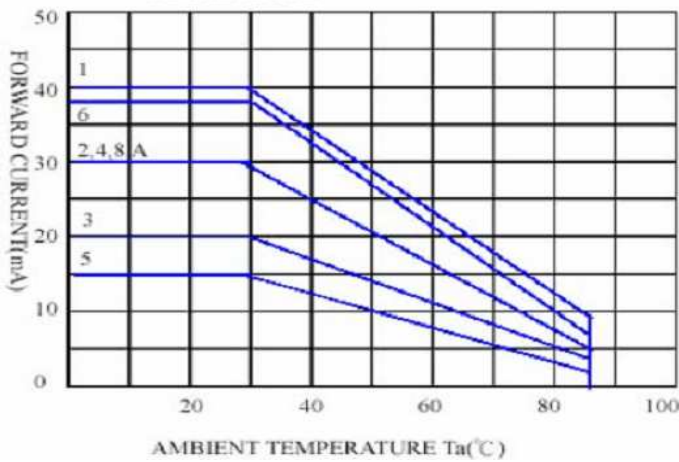|								
	Reflector SMT LED							
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FORWARD CURRENT VS. FORWARD VOLTAGE
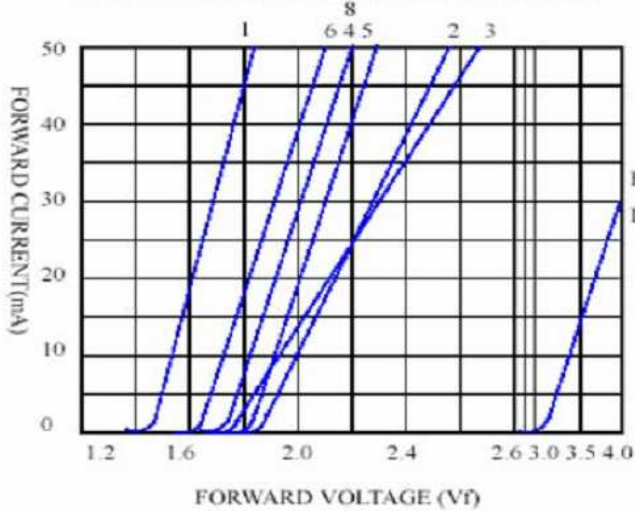
RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

FORWARD CURRENT VS. AMBIENT TEMPERATURE

Reflector SMT LED
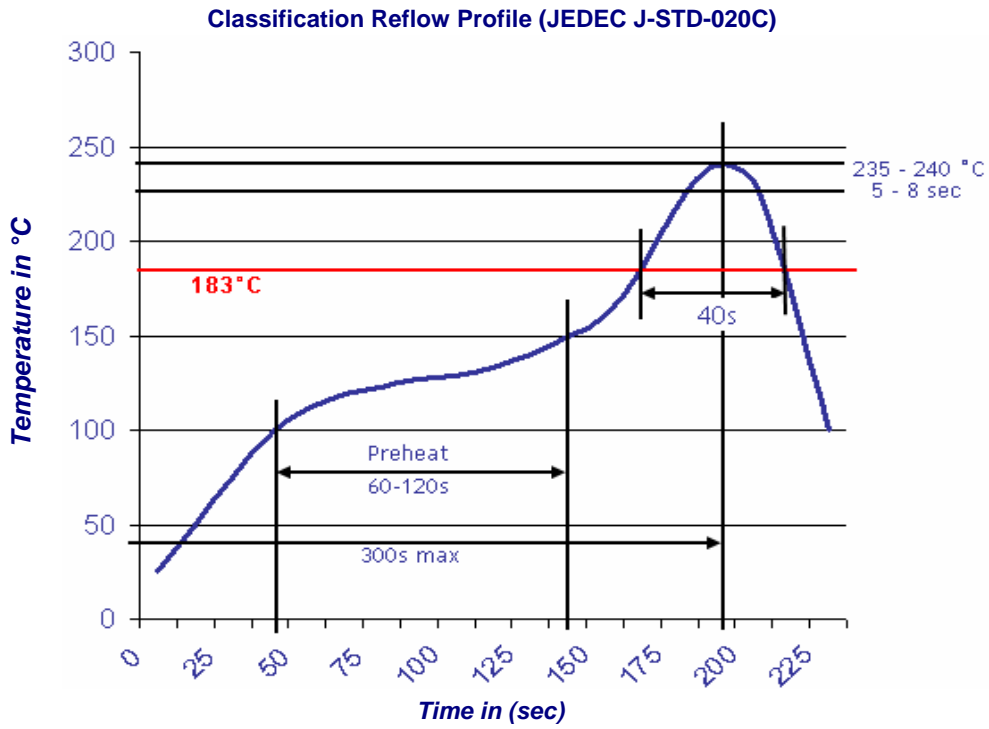
Green   *Red*

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Solder Condition

Lead Free Solder

Classification Reflow Profile (JEDEC J-STD-020C)

Temperature in °C

300

250

235 - 240 °C
5 - 8 sec

200

183°C

150

40s

100

Preheat
60-120s

50

300s max

0

0 25 50 75 100 125 150 175 200 225

Time in (sec)

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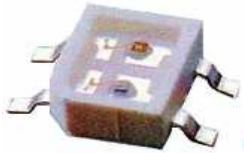
Packing Specifications
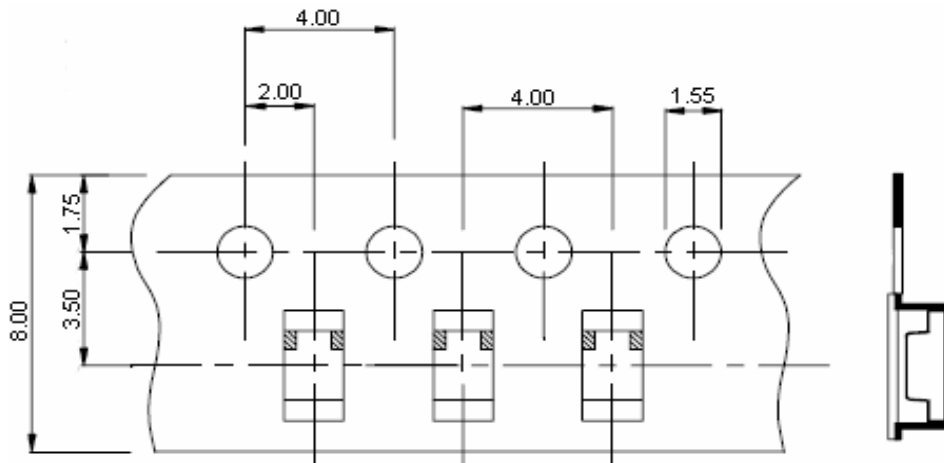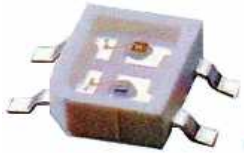
Reel Specifications
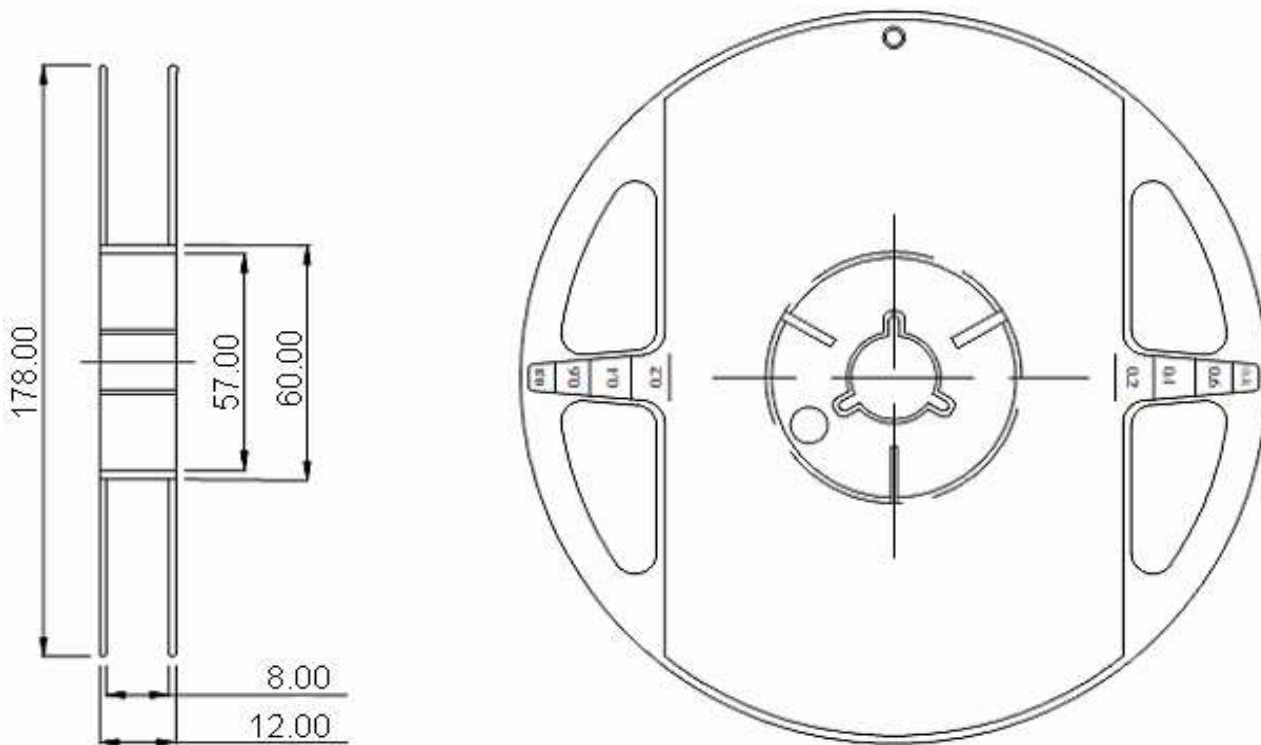
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Handling Precautions

Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although ist characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force. As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might leads to damage and premature failure of th LED.

1. Handle the component along the side surfaces by using forceps or appropriate tools
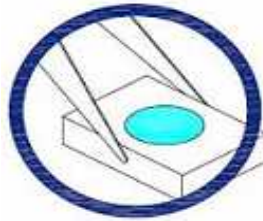
2. Do not directly touch or handle the silicone lens surfance. It may damage the internal circuitry.

3. Do not stack together assembled PCBs containing exposed LEDs. Outside impact may scratch the silicone lens or damage the internal circuitry.
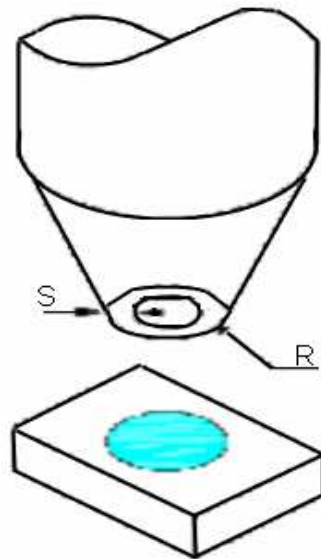

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4. The outer diameter of the TOP LED pickup nozzle should not exceed the size of the
   LED to prevent air leaks. The inner diameter of the nozzle should be as large
   as possible.

5. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the
   LED surface during pickup.

6. The dimensions of the component must be accurately programmed in the
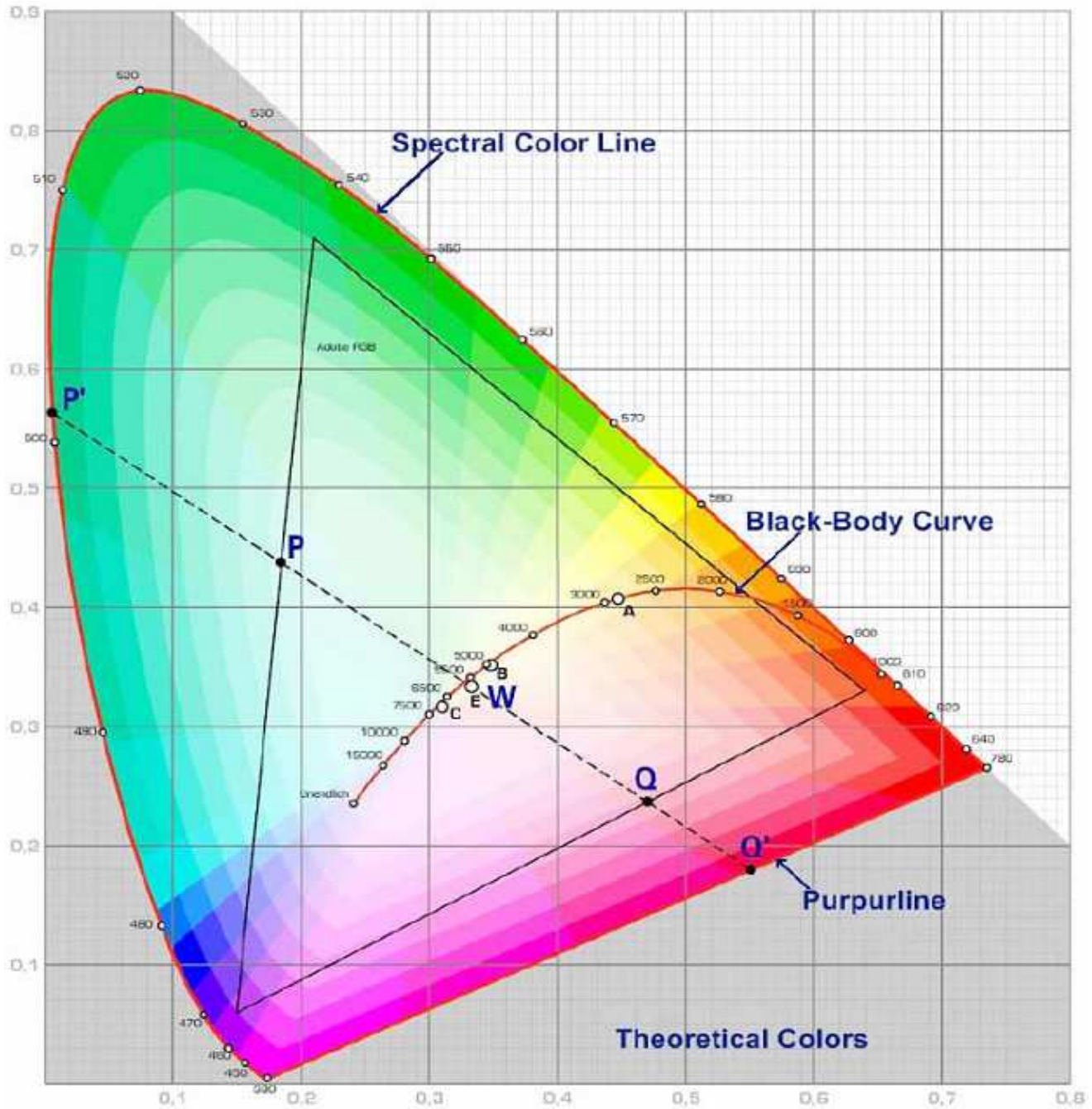   pick-and-place machine to insure precise pickup and avoid damage during production.

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Color table curve

Reflector SMT LED
Green   *Red*

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