

CAMBRIDGE ELECTRONICS LABORATORIES
 20 Chester Street Telephone +1 617 629-2805
 Somerville MA 02144-3005 USA Telefax +1 617 623-1882

<www.camblab.com>

<camblab@attglobal.net>

BLACK MAGIC TELEPHONE RINGING GENERATOR--MICRO SQUARE WAVE MODEL LNU-BMR

=====OPERATING CHARACTERISTICS=====

Specification		----Value----		Remark
Input voltage	(V _{dc})	5	12	5 V unit operate: 4.5-5.5 V 12 V unit operate: 11-13 V Custom voltages 3-15 available on special order
>INPUT NOT PROTECTED AGAINST REVERSE POLARITY<				
Idle current	(mA)	~135	~85	
Output voltage	(V _{rms})	-----86-----		Custom voltages available on special order
Output power	(W)	5	5	Intermittent duty
Output frequency	(Hz)	---20± 0.5---		Custom frequencies available on special order
Load regulation	(%)	-----± 15----		
Efficiency	(%)	~50/~75/~80		At loads 1 W/3 W/5 W
Operating temp.	(° C)	-10-->+70		Wider temperature range available on special order
Storage temp.	(° C)	-10-->+85		
Hi-pot test	(1500 V _{dc})	Input-->output		

=====NOTES=====

- (1) Part numbering system: LNvvVVFF where vv is input voltage; VV is rms output voltage; FF is output frequency.
- (2) Standard models are encapsulated in epoxy resin UL-rated 94V-0. Applications requiring lower temperatures or rapid rates of temperature change may be well served by Tracon 3143 which may be ordered as part number LWvvVVFF. CEL does not warrant merchantability or fitness for a particular use of any encapsulant but will be pleased to furnish "on approval" samples for customer testing against his exact requirement.
- (3) Output may be filtered to reduce potentially interfering harmonics. Standard units provide two-state (±) output. To facilitate filtering with physically small components, three-state output (+/0/-) units are available with a 10% zero-state output ("dead time"). Refer to CEL publication *Telecom Design Tricks* and to Datasheet "Appropriate Wave-Shaping Filters for Micro and Mini Black Magic Telephone Ringing Generators".
- (4) Output is *NOT PROTECTED* against shorts; circuit must have series resistance of at least 300 Ω, normally part of ring-trip circuit. If the latter's current sensing resistor is less than 300 Ω, additional resistance must be added. Output is protected against transient overvoltages by internal zener clamp. Highly inductive loads may require conditioning.
- (5) Output will pass d.c. ring-trip bias only when unit is powered.

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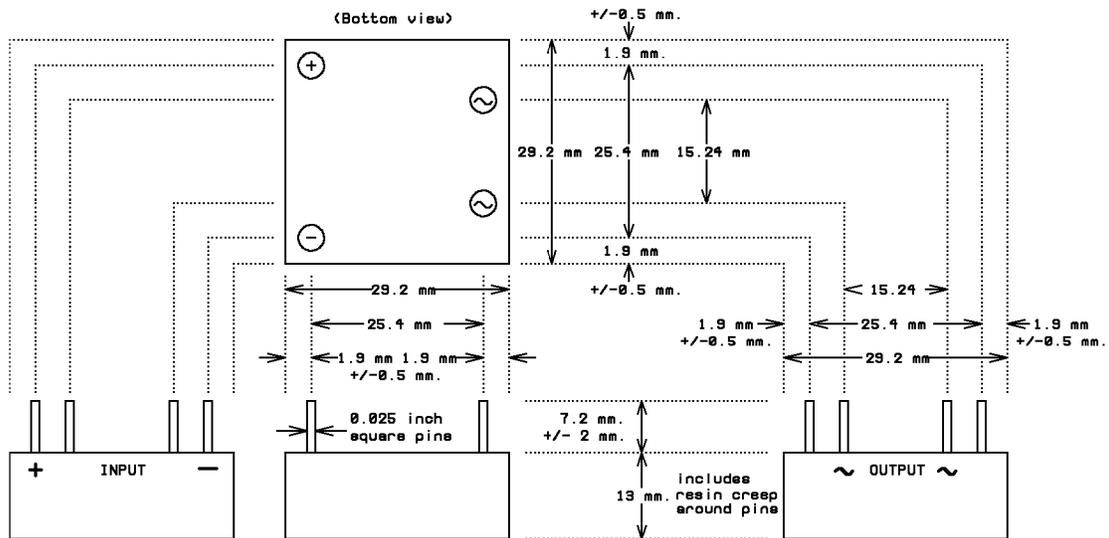
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 PHYSICAL CHARACTERISTICS AND MECHANICAL SPECIFICATIONS

=====PHYSICAL CHARACTERISTICS=====

Dimensions mm (in)

Dimensions		Terminal spacing	
Height	12.7 (0.50)	Output	15.24 (0.6)
Width	29.2 (1.15)	Input	25.40 (1.0)
Length	29.2 (1.15)		
=====		=====	
		Weight: 20 grams (0.7 oz)	

=====MECHANICAL SPECIFICATIONS=====



/NUBMR95.PIX

=====CONSTRUCTION AND MOUNTING=====

Black Magic Micro square-wave ringing generators are monolithically encapsulated in water-proof epoxy rated UL 94V-0 with terminals as 0.025 inch square pins. Units are intended for direct solder-down to pcb or they may be socketed with receptacles e.g. any receptacle using Mill-Max clips #16 or #47.

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