

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 -- MINI SQUARE WAVE MODEL

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

Specification		----Value----		Remark
Input voltage	(V_{dc})	24	48	24 V unit operate: 18-36 V (<24 V with reduced power output) 48 V unit operate: 38-57 V (<48 V with reduced power output) Custom voltages 12-60 available on special order
Idle current	(mA)	<20	<20	
Output voltage	(V_{rms})	-----86-----		Custom voltages available on special order
Output power	(W)	10	14	Intermittent duty
Output frequency	(Hz)	---20±0.5---		Custom frequencies available on special order
Load regulation	(%)	-----±7-----		
Efficiency	(%)	--60 to 80--		Depending on V_{in} and R_{load}
Operating temp.	(° C)	-10-->+70		Wider temperature range available on special order
Storage temp.	(° C)	-10-->+85		
Hi-pot test	(600 V_{ac})	Input --> output Input --> heatsink Output--> heatsink		

=====NOTES=====

- (1) Part numbering system: MNvvVVFF where vv is input voltage; VV is rms output voltage; FF is output frequency.
- (2) Output protected against short circuits by internal current limit and against transient overvoltages by internal zener clamp. May require conditioning for highly inductive loads.
- (3) D.c. input NOT PROTECTED AGAINST REVERSE POLARITY. To achieve rated power output may require conditioning of d.c. input; consult CEL.
- (4) Output will pass d.c. ring trip bias only when unit is powered.
- (5) Pi-form output filters may be employed to shape square wave with any desired cut-off frequency. Refer to CEL's publication *Telecom Design Tricks* and Datasheet "Appropriate Wave-Shaping Filters for Micro and Mini Black Magic Telephone Ringing Generators".

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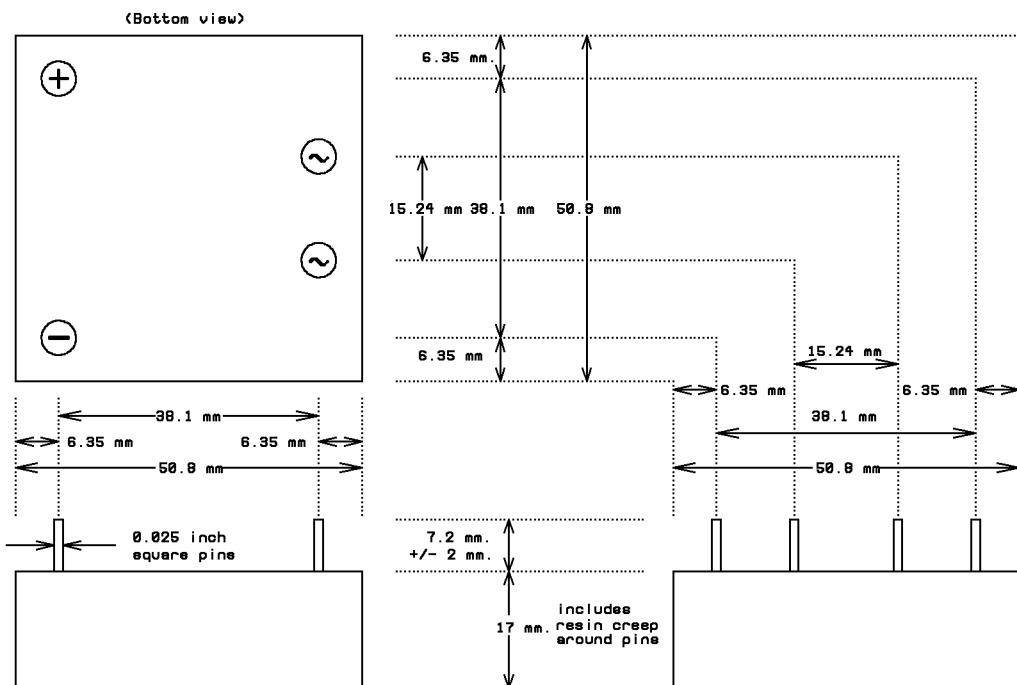
BLACK MAGIC TELEPHONE RINGING GENERATOR -- MINI SQUARE WAVE MODEL
 PHYSICAL CHARACTERISTICS AND MECHANICAL SPECIFICATIONS

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

Dimensions mm (in)

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Dimensions			Terminal spacing		
Height	17.0	(0.67)	Output	15.24	(0.6)
Width	50.8	(2.00)	Input	38.10	(1.5)
Length	50.8	(2.00)	=====		
=====			Weight: 110 grams (3.9 oz)		

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



DI-MINI.PIX

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

Black Magic Mini square-wave ringing generators are silicone-encapsulated in a five-sided mild-steel heatsink with terminals as 0.025 inch square pins. All materials are UL-rated 94V-0. 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.