

# TITLE: SPECIFICATION CONTROL DRAWING

PART IDENTIFIER: HR03XX  
(XX) DB VALUE

DESCRIPTION: CHIP ATTENUATOR

ASSEMBLY DWG: 1900494

**1.0 SPECIFICATIONS:**

- 1.1 ELECTRICAL:
- 1.1.1 IMPEDANCE: 50 OHMS NOMINAL.
  - 1.1.2 FREQUENCY RANGE: DC-12.4 GHZ.
  - 1.1.3 ATTENUATION VALUES AVAILABLE: 1-20DB IN 1DB INCREMENTS.
  - 1.1.4 ATTENUATION ACCURACY: SEE TABLE.

ATTENUATION ACCURACY			
DB	DC - 4 GHZ	4 - 8 GHZ	8 - 12.4 GHZ
1 - 3	±0.3	±0.5	±0.5
4 - 6	±0.4	±0.5	±0.5
7 - 10	±0.5	±0.5	±0.75
11 - 15	±0.75	+0.5,-3.0	+0.5,-3.5
16 - 20	±1.0	+0.5,-4.0	+1.0,-6.0

- 1.1.5 VSWR: DC - 4 GHZ - 1.25          8 - 12.4 GHZ - 1.50  
  4 - 8 GHZ - 1.35
- 1.1.6 INPUT POWER: 2 WATTS CW.
  - 1.1.6.1 FULL RATED POWER TO 125°C, DERATED LINEARLY TO 0 WATTS AT 150°C.
  - 1.1.6.2 PEAK POWER, 50 WATTS FOR 10US PULSE WIDTH @ 1% DUTY CYCLE.

1.2 MECHANICAL:

- 1.2.1 OUTLINE DWG: SEE SHEET 3.
- 1.2.2 WORKMANSHIP: PER MIL-R-55342.

1.3 ENVIRONMENTAL:

- 1.3.1 ALTITUDE:
  - 1.3.1.1 NON-OPERATING: SEA LEVEL TO 50,000 FEET.
  - 1.3.1.2 OPERATING: SEA LEVEL TO 50,000 FEET.
- 1.3.2 TEMPERATURE RANGE:
  - 1.3.2.1 NON-OPERATING: -55°C TO +150°C.
  - 1.3.2.2 OPERATING: -55°C TO +150°C.
- 1.3.3 VIBRATION: PER MIL-STD-202, METHOD 204, COND. D
- 1.3.4 SHOCK: PER MIL-STD-202, METHOD 213, COND. I.
- 1.3.5 MOISTURE RESISTANCE: PER MIL-STD-202, METHOD 106 EXCEPT SUBCYCLE STEPS 7A AND 7B AND POLARIZATION AND LOAD ARE NOT APPLICABLE.

- 1.4 ELECTROSTATIC DISCHARGE CONTROL: PER MIL-STD-1686.

**2.0 UNIT MARKING:** "DB VALUE"  
LEGIBILITY AND PERMANENCY PER MIL-STD-130.

**3.0 QUALITY ASSURANCE:**

- 3.1 100% INSPECT.
  - 3.1.1 VISUAL AND MECHANICAL EXAMINATION FOR CONFORMANCE TO OUTLINE DRAWING REQUIREMENTS.
  - 3.1.2 MEASURE AND RECORD VSWR AND ATTENUATION AT FREQUENCY AS FOLLOWS:
    - 1.0 TO 10.0 DB - @ 4.0 GHZ
    - 11.0 TO 20.0 DB - @ 1.0 GHZ
  - 3.1.3 ACCEPTANCE LIMITS:
    - 3.1.3.1 VSWR: SEE ELECTRICAL 1.1.5.
    - 3.1.3.2 ATTENUATION: SEE ELECTRICAL 1.1.4.
  - 3.1.4 10 CYCLE THERMAL SHOCK @-55° TO +125°C.

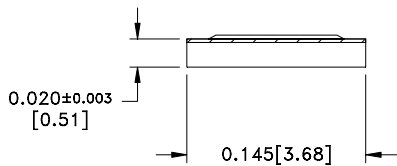
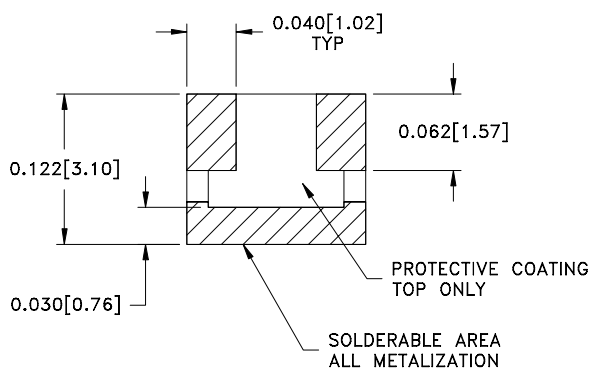
ENG	PUR	MFG	PLAN	SM
CC		QA		
EMC TECHNOLOGY, INC 1971 OLD CUTHBERT ROAD CHERRY HILL, NJ 08034		CAGE CODE # 24602		DWG # 1001275000
		CHANGE NOTICE	EN 01-137	REV LVL B
				SHEET 1 OF 3

- 3.1.5 MEASURE AND RECORD VSWR AND ATTENUATION AT FREQUENCY AS FOLLOWS:
  - 1.0 TO 10.0 DB - @ 4.0 GHZ
  - 11.0 TO 20.0 DB - @ 1.0 GHZ
- 3.1.6 ACCEPTANCE LIMITS: SAME AS 3.1.3.
- 3.1.7 168 HR. BURN-IN @ 2.0W @ 25°C.
- 3.1.8 MEASURE AND RECORD VSWR AND ATTENUATION AT FREQUENCY AS FOLLOWS:
  - 1.0 TO 10.0 DB - @ 4.0 GHZ
  - 11.0 TO 20.0 DB - @ 1.0 GHZ
- 3.1.9 ACCEPTANCE LIMITS: SAME AS 3.1.3.
- 3.2 TEST DATA REQUIREMENTS:
  - 3.2.1 TEST DATA REQUIRED.
  - 3.2.2 DATA RETENTION PERIOD: 24 MONTHS.

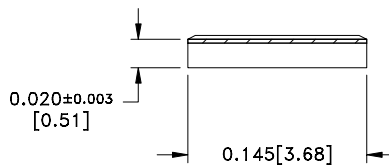
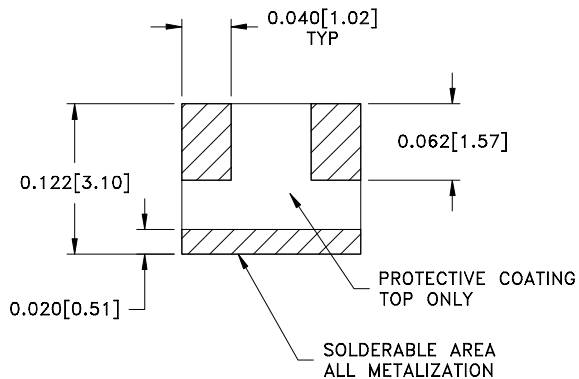
**4.0 PACKAGING:** STANDARD PACK PER MC0023.

EMC TECHNOLOGY, INC 1971 OLD CUTHBERT ROAD CHERRY HILL, NJ 08034	<b>CAGE CODE # 24602</b>		<b>DWG #</b>	1001275000
	<b>CHANGE NOTICE</b>	EN 01-137	<b>REV LVL</b>	B
			<b>SHEET</b>	2 OF 3

PART ID REF
HR03XX



**1-10dB**



**11-20dB**

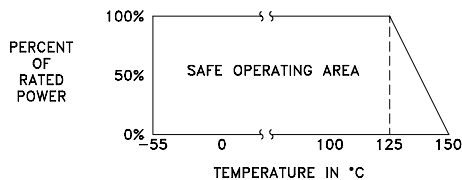
**MECHANICAL SPECIFICATIONS:**

SUBSTRATE:  
MATERIAL - ALUMINA 96%, MIL-I-10.  
TERMINAL:  
MATERIAL - PLATINUM GOLD, NICKEL BARRIER,  
SOLDER PLATE Sn90 Pb10.  
RESISTIVE ELEMENT:  
MATERIAL - TANTALUM NITRIDE.



METRIC EQUIVALENTS GIVEN IN [mm]  
FOR REFERENCE INFORMATION ONLY

**POWER RATING AND DERATING**



**EMC TECHNOLOGY INC**  
1971 OLD CUTHBERT RD  
CHERRY HILL NJ 08034  
PHONE NO. (856) 429-7800  
FAX NO. (856) 429-1807

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES  
FRACT ---  
ANG ---  
XX ---  
XXX ±0.005  
XXXX ---

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CAGE CODE <b>24602</b>	SCALE <b>10:1</b>	DRAWN BY <b>CME 04/09/2001</b>	CHECKED BY	APPROVED BY <b>DAR 4/10/01</b>
REV <b>B</b>	CHANGE NOTICE <b>EN 01-137</b>	DRAWING NO <b>1001275000</b>	SHEET <b>3 OF 3</b>	