

**TITLE: SPECIFICATION CONTROL DRAWING**

**PART IDENTIFIER:** SMT2010ALN

**DESCRIPTION:** POWER STRIPLINE RESISTOR, ALUMINUM NITRIDE (THICK FILM)

**ASSEMBLY DWG:** 1101474

**1.0 SPECIFICATIONS:**

**1.1 ELECTRICAL:**

1.1.1 IMPEDANCE: 50Ω NOMINAL.

1.1.2 FREQUENCY: DC - 2 GHZ.

1.1.3 VSWR: 1.25:1 MAX.

1.1.4 INPUT POWER:

1.1.4.1 20 WATTS. CHIP SOLDERED TO MOUNTING SURFACE. MOUNTING SURFACE TEMPERATURE MAINTAINED AT 100 °C MAXIMUM. APPLY LINEAR DE-RATING OF INPUT POWER TO 0 WATTS AT 150 °C.

**1.2 MECHANICAL:**

1.2.1 OUTLINE DWG: SEE SHEET 2.

1.2.2 WORKMANSHIP: PER MIL-PRF-55342

1.2.3 THERMAL IMPEDANCE (R<sub>θ</sub>)

1.2.3.1 2.500 °C / WATT R<sub>θ</sub> FROM RESIST FILM TO MOUNTING SURFACE DIRECTLY UNDER CENTER OF CHIP. CHIP SOLDERED DIRECTLY TO MOUNTING SURFACE.

1.2.4 FILM TEMPERATURE (T<sub>F</sub>)

1.2.4.1 200 °C ABSOLUTE MAXIMUM FILM TEMPERATURE. DE-RATE TO 150 °C MAXIMUM FILM TEMPERATURE FOR ALL MILITARY/HIGH-RELIABILITY APPLICATIONS.

1.2.5 THERMAL

1.2.5.1 DETERMINE MAXIMUM MOUNTING SURFACE TEMPERATURE BY APPLYING THE FOLLOWING FORMULA:

$$T_s = T_f - (P_{MAX} \times R_{\theta})$$

WHERE: T<sub>S</sub> = MAXIMUM MOUNTING SURFACE TEMPERATURE

T<sub>F</sub> = MAXIMUM FILM TEMPERATURE

P<sub>MAX</sub> = MAXIMUM APPLIED INPUT POWER

R<sub>θ</sub> = CHIP THERMAL IMPEDANCE.

**1.3 ENVIRONMENTAL:**

1.3.1 TEMPERATURE RANGE:

1.3.1.1 NON-OPERATING: -55°C TO +150°C.

1.3.1.2 OPERATING: -55°C TO +150°C.

**2.0 UNIT MARKING: NONE.**

**3.0 QUALITY ASSURANCE:**

3.1 SAMPLE INSPECT PER ANSI/ASQC Z1.4 GENERAL INSPECTION, LEVEL II, AQL = 1.0.

3.1.1 VISUAL AND MECHANICAL PER 824W154.

3.1.2 DC RESISTANCE: 50Ω ± 5%.

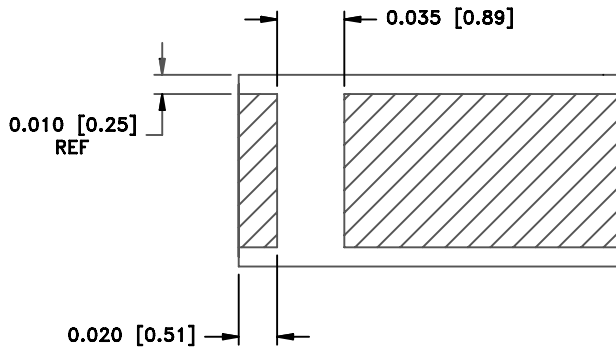
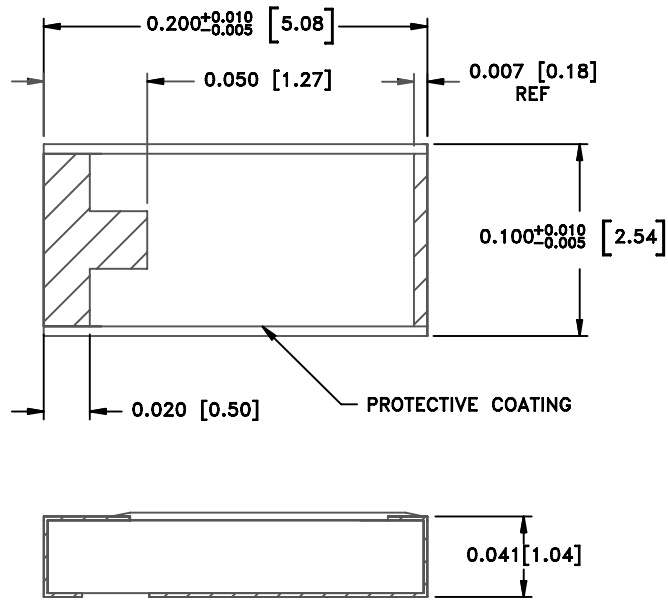
3.2 DATA REQUIREMENTS:

3.2.1 NO TEST DATA REQUIRED FOR CUSTOMER.

3.2.2 DATA RETENTION – 24 MONTHS.

**4.0 PACKAGING: STANDARD PACK PER 755W002.**

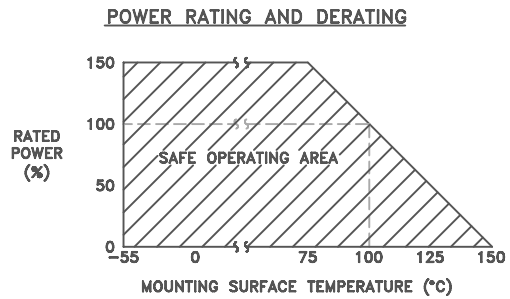
EMC TECHNOLOGY 8851 SW OLD KANSAS AVE. STUART, FL 34997	<b>CAGE CODE # 24602</b>		<b>DWG #</b>	1008625000
	<b>CHANGE NOTICE</b>	EN 10-1295	<b>REV LVL</b>	T
			<b>SHEET</b>	1 <u>OF</u> 2



**MECHANICAL SPECIFICATIONS:**

- SUBSTRATE:  
MATERIAL - ALUMINUM NITRIDE, MIL-I-10.
- TERMINALS:  
MATERIAL - THICK FILM, NICKEL BARRIER.  
SOLDER PLATED
- RESIST:  
MATERIAL - THICK FILM.

METRIC EQUIVALENTS GIVEN IN [mm]  
FOR REFERENCE INFORMATION ONLY



8851 SW OLD KANSAS AVE  
STUART, FL 34997  
PHONE NO. (772) 286-9300  
FAX NO. (772) 283-5286

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

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF EMC TECHNOLOGY INC AND SHALL NOT BE DUPLICATED OR USED AS BASIS FOR THE MANUFACTURE OR SALE OF PARTS OR DEVICES WITHOUT PERMISSION.

CAGE CODE <b>24602</b>	SCALE <b>15:1</b>	DRAWN BY <b>JG 11/15/10</b>	CHECKED BY	APPROVED BY
REV <b>T</b>	CHANGE NOTICE <b>EN 10-1295</b>	DRAWING NO <b>1008625000</b>	SHEET <b>2 OF 2</b>	