



**TITLE: SPECIFICATION CONTROL DRAWING**

**PART IDENTIFIER:** SMT2010ALNF

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

**ASSEMBLY DWG:** 1101984

**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%.

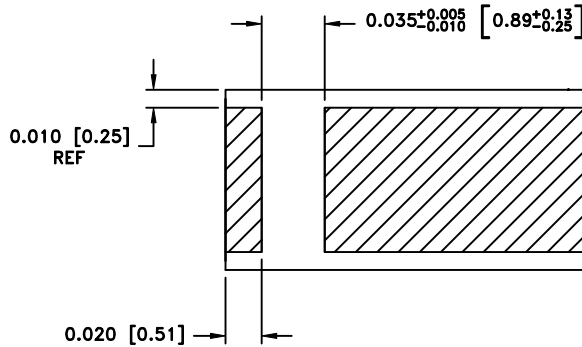
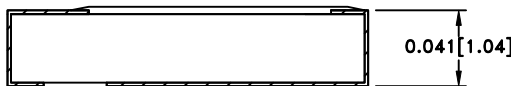
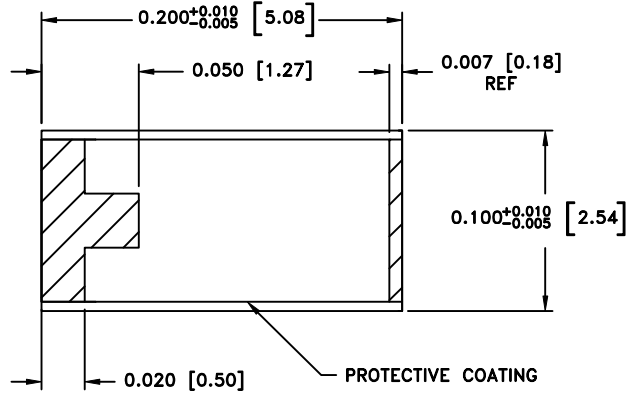
3.2 DATA REQUIREMENTS:

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>	1010605000
	<b>CHANGE NOTICE</b>	EN 10-1295	<b>REV LVL</b>	D
			<b>SHEET</b>	1 <u>OF</u> 2

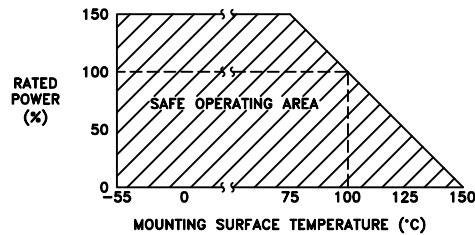


**MECHANICAL SPECIFICATIONS:**

- SUBSTRATE: MATERIAL - ALUMINUM NITRIDE, MIL-I-10.
- TERMINALS: MATERIAL - THICK FILM, LEAD FREE PLATING. ROHS COMPLIANT.
- RESIST: MATERIAL - THICK FILM.

METRIC EQUIVALENTS GIVEN IN [mm]  
FOR REFERENCE INFORMATION ONLY

**POWER RATING AND DERATING**



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 ---

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CAGE CODE	SCALE	DRAWN BY	CHECKED BY	APPROVED BY
24602	15:1	JG 11/15/10		
REV	CHANGE NOTICE	DRAWING NO	SHEET	
D	EN 10-1295	1010605000	2 OF 2	