PHILIPS

Philips Consumer Electronics Company

MEASUREMENT TECHNICAL REPORT

FOR
PHILIPS LIGHTING,CO.
200 Franklin Sq. Dr.
Somerset, NJ 08875-6800

MODEL SLS/T 15W & SLS/T 18W

April 1, 1998

This report concerns: FCC Certification of an RF Lighting Device
(ref. FCC Part 18, Subpart C)
(ref. ANSI C63.4-1992)

This report was prepared by:

PHILIPS CONSUMER ELECTRONICS COMPANY
ONE PHILIPS DRIVE
P.O. BOX 14810.
KNOXVILLE, TN. 37914-1810

A Division of Philips Electronics
North America Corporation
One Philips Drive,
P.O. Box 14810
Knoxville, TN 37914-1810
Tel: (423) 521-4316

TEST PROCEDURE
(ANSI C63.4 - 1992)

ACRONYMS

(E.M.I.) Electromagnetic Interference
(E.U.T.) Equipment Under Test
(L.I.S.N.) Line Impedance Stabilizing Network

PROCEDURE-CONDUCTED LINE EMISSIONS

The EUT was placed in an RF Shield room on a wooden table 80 cm above the (2) 50 ohm/250 microhenry LISN's. The AC power leads were connected to two (2) 50 ohm/250 microhenry L.I.S.N.s. The system was energized and placed into its normal operating mode. The 50 ohm output of the L.I.S.N., was connected to the HP8568B RF Spectrum Analyzer. The spectrum was observed from 450 KHz to 30 MHz to identify the frequency of the emission that had the highest amplitude relative to the limit. For each mode of operation and for each current carring conductor, cable and/or wire manipulation was performed while observing the spectrum analyzer. For this series of tests the emission that had the highest amplitude relative to the limit was recorded.

Based on the preliminary tests, the EUT, and the cable and/or wire configuration and mode of operation which produced the highest emission relative to the limit was selected for the final AC powerline conducted emissions test. The final test on all current carrying conductors of the power cords that comprise the EUT was performed without variation of the configuration determined during the preliminary tests.

The X-Y plots of EMI generated by the E.U.T. were taken. The 6 highest readings from 450 KHz - 30 MHz for each side of the line are recorded. Unless otherwise specified, all Conducted Emissions are recorded as "PEAK" spectrum analyzer readings.

PROCEDURE-SPURIOUS RADIATION

The EUT was placed on a wooden table 80 cm above the floor of an RF screen cage. A receiving Bicon antenna was placed 1 meter away from the EUT on a wooden tri-pod 1 meter above the floor of the RF screen cage. The receiving antenna was connected to the 50 Ω input of the HP8568B spectrum analyzer. The EUT was powered by a 120 VAC supply, and was configured into it's normal operational mode.

TEST PROCEDURES CONT'D

The 30 to 40 MHZ band was observed on the spectrum analyzer while the EUT power and control leads were adjusted to maximize emissions. The peak frequencies for this band were recorded. This search for emissions continued from 40 MHZ up to the upper frequency required per FCC 15.33 (b) (1). Upon completion of the pre-scan, the EUT was placed on a wooden table 80 cm above a rotatable wooden turntable mounted level with the metal ground plane of the 3 meter test site.

The EUT was booted up into its normal operational mode. The worst case cable configuration determined by the pre-scan was duplicated and re-maximized at the worst case frequency. Based on this configuration all frequencies located during the 1 meter pre-scan were measured at the 3 meter test distance. The receiving antennas were varied in height from 1 to 4 meters and the remote turntable was rotated 360° to find the maximum emissions. This test was performed for all modes of operation.

For all measured frequencies above 999MHZ the Conical Log Spiral antenna and/or the Double Ridged Guide Antenna was placed 3-meters away from the system on a 4-meter fiberglass mast. The receiving antenna was connected to an HP8566B spectrum analyzer via 60 ft. of 50ohm Heliax (wave guide) cable.

All significant emissions are reported on the attached data report. To verify that the E.M.I. emissions measured were generated by the E.U.T., the system power was interrupted at peak reading while observing the Spectrum Analyzer. Unless otherwise specified, all Radiated Emissions are recorded as "PEAK" spectrum analyzer readings. The Radiated Field Strength was calculated as follows: Maximum Emission Received (dB) + Antenna Factor (dB) + Cable Loss (dB) = Field Strength dBuv/Meter.

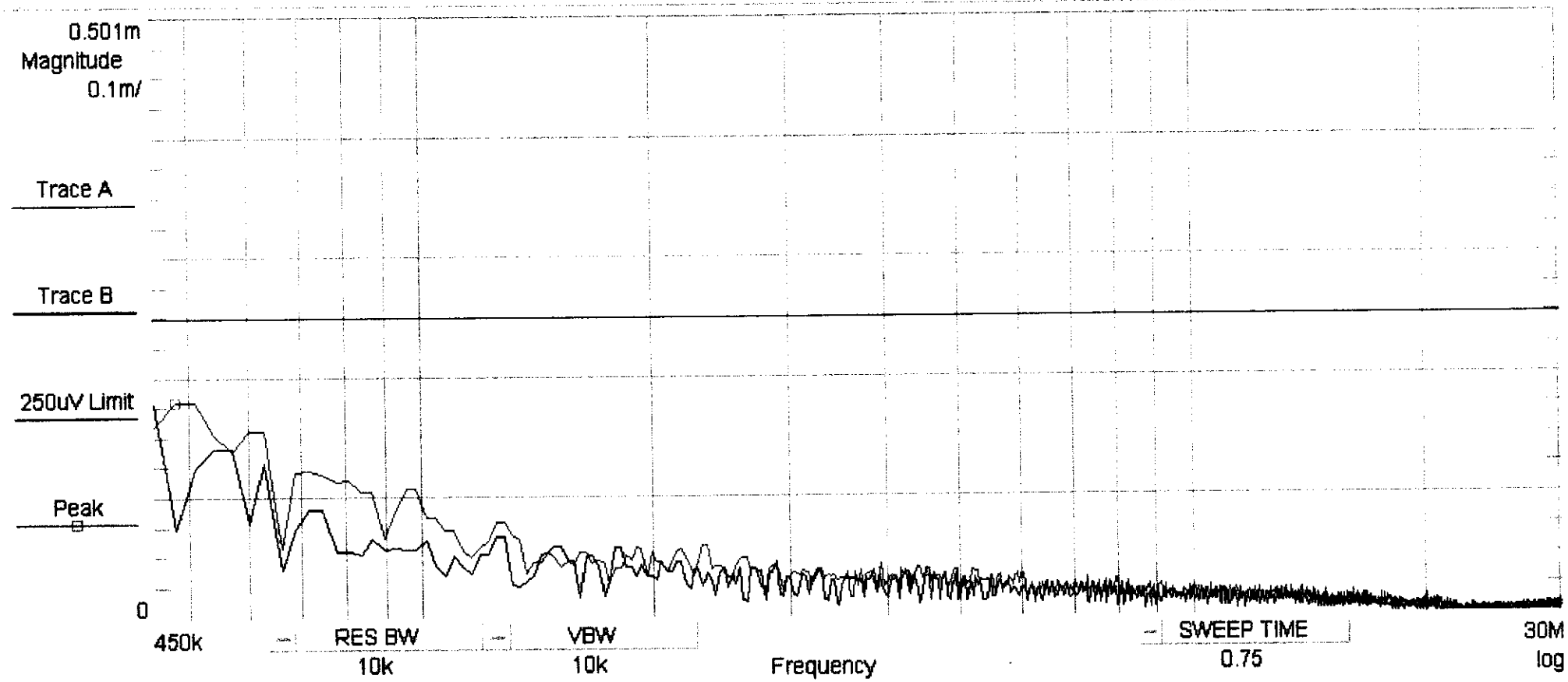
HP VEE - lineclassB

File

VERTICAL SCALE	REF LEVEL	ATTEN	MARKER FREQ.	MARKER AMPL.	LIMIT
1	0.495m	10	480k	0.18m	0.25m

Limit Delta	Model Number	Manufacture	AlphaNumeric
-70u	SLS/T 15W Bulb #9	Advance Transformer	Thu 19/Feb/1998 6:03:04 PM

Class B Line Conducted



Comments

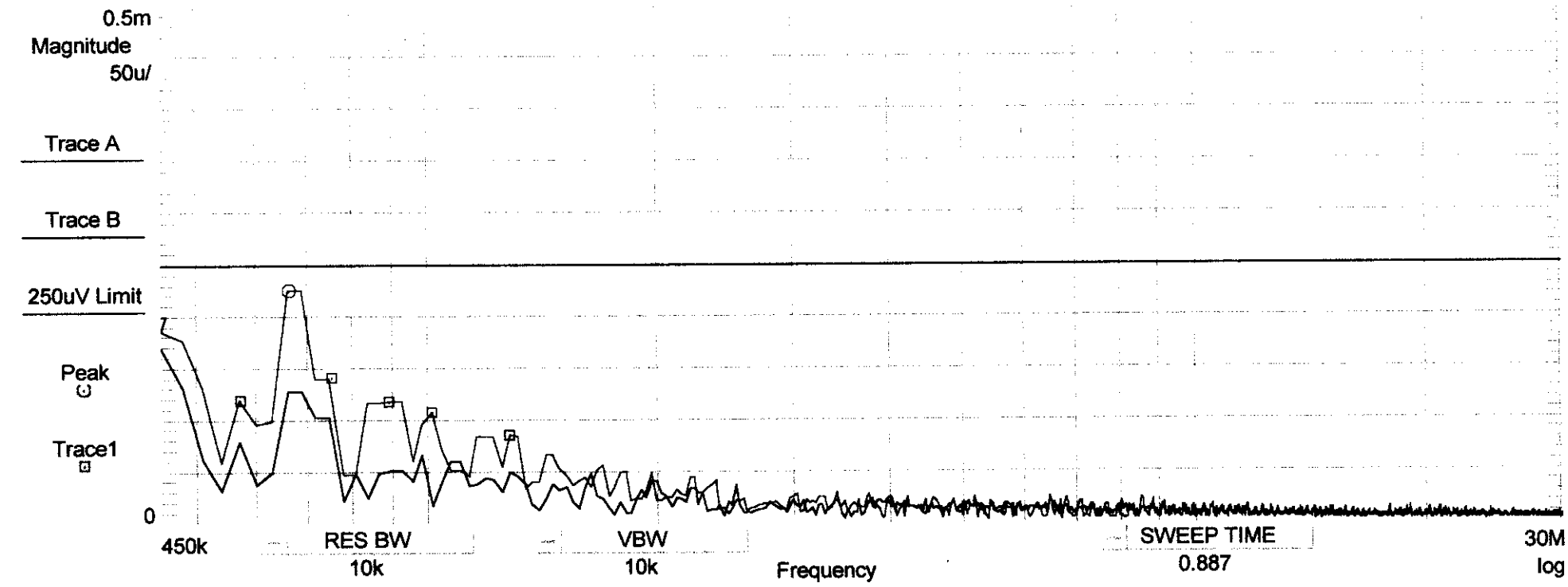
Peak Plot
15 minute warm up time

Support Equipment

SCALE	REF LEVEL	ATTEN	MARKER FREQ	MARKER AMPL	LIMIT	Limit Delta	6 Highest Points Trace A
Vertical	0.495m	10	660k	0.226m	250uV	-24.28u	(660k, 0.226m) (750k, 0.141m) (570k, 0.119m) (890k, 0.118m) (1010k, 0.107m) (1280k, 85.2u)

Model Number	Manufacture	Date Display
SLS/T 18W	ADVANCE TRANSFORMER	Mon 16/Mar/1998 9:31:02 AM

Class B Line Conducted



∇ — x: 450k y: 0.1851m

Comments

PEAK PLOT
BULB A
15min. WARM UP TIME.

Support Equipment

REPORT# 80751-1
DATE OF TEST: 3-16-98

PHILIPS CONSUMER ELECTRONICS COMPANY
EMI LAB
P.O. 14810
KNOXVILLE, TN 37914-1810

RADIATED RF LEVEL

MANUFACTURER: Philips Lighting
MODEL: SLS/T 15W
SUPPORT EQUIPMENT:

FREQUENCY (Mhz)	DbuV/M HORIZ.	DbuV/M VERT.	DbuV/M LIMIT	DbuV/M DELTA

THE SPECTRUM WAS SCANNED FROM 30 -1000 MHz AND NO SIGNIFICANT EMISSIONS WERE FOUND.

QP= QUASI PEAK READING AT THAT FREQUENCY

DELTA REFERS TO THE DB DIFFERENCE BETWEEN THE HIGHER OF THE HORIZONTAL AND THE VERTICAL READINGS AND THE DB LIMIT AT THAT FREQUENCY.

ABOVE READINGS ARE PEAK READINGS WITH CABLE AND ANTENNA FACTORS INCLUDED EXCEPT AS NOTED QUASI-PEAK READINGS.

TEST DISTANCE BETWEEN DEVICE UNDER TEST AND RECEIVING ANTENNA WAS 3 METERS.

REPORT# 80751-1
DATE OF TEST: 3-16-98

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EMI LAB
P.O. 14810
KNOXVILLE, TN 37914-1810

RADIATED RF LEVEL

MANUFACTURER: Philips Lighting
MODEL: SLS/T 18W
SUPPORT EQUIPMENT:

FREQUENCY (Mhz)	DbuV/M HORIZ.	DbuV/M VERT.	DbuV/M LIMIT	DbuV/M DELTA

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ABOVE READINGS ARE PEAK READINGS WITH CABLE AND ANTENNA FACTORS INCLUDED EXCEPT AS NOTED QUASI-PEAK READINGS.

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SUMMARY OF RESULTS
(ANSI C63.4 - 1992)

PCEC REPORT #80751-1
FCC ID: CIWELT

The measurement data (Report #80751-1) indicates the Philips Lighting model SLS/T 15W & SLS/T 18W **MEETS** the requirements as set forth by the FCC for Class B RF Lighting Devices with the following modifications.

MODIFICATIONS:

NONE

Mass production of final instrument systems utilizing the exact electrical/ mechanical components, lead dress, and RF ground paths as tested by PCEC will not likely cause harmful interference to any radio communication, radio navigation or safety services. Any deviation in design from the system tested by our facility will require further verification of FCC Compliance by PCEC.

PHILIPS CONSUMER ELECTRONICS COMPANY

Fred A. Fisher
Manager Regulatory FCC/DOC

Model : SLS/T 15W and 18 W **2/11/98**

Parts List for Printed Circuit Board

Component Designator	Description	Quantity
C2, C15	22 MFD, 200V, 20%, 85 °C Electrolytic Capacitor	2
C3,C4	0.1 MFD, 250V, 10%, Film Capacitor	2
C5	2.4 NFD, 400V, 10%, Stacked Film Capacitor	1
CS6	10 NFD, 50V, 10%, SMD Capacitor 0805	1
CS8	22 NFD, 50V, 20%, SMD Capacitor 0805	1
CS9	470 PFD, 500V, 10%, SMD Capacitor 1206	1
DI1, DI2, DI5	Diode Rectifier 1A, 1000V	3
IS1	8-Pin SMD Power IC Chip	1
IS2	8-Pin SMD Power IC Chip	1
LI1, LI3	820uH, 10% Fixed inductor	2
L2	3.1 mH, 10% Lamp Coil	1
NI1,2,5,6,7,8	#22 AWG Bare Jumper Wires	6
NI3, NI4	#22 AWG Insulated Jumper Wires	2
RI1	5.6 Ohm, 1W, 5%, Fusible Resistor	1
RS2, 3	680K Ohm, 5%, 1/4W SMD Resistor 1206	2
RS4	330K Ohm, 5%, 1/4W SMD Resistor 1206	1
RS6	220 Ohm, 5%, 1/8W SMD Resistor 1206	1
RS7,8,9	22K Ohm, 5%, 1/4W SMD Resistor 1206	3

Printed Circuit Board - 2pieces 0.062" thick

One (1) piece measures: 1.375" by 1.700"

One (1) piece measures: 0.500" by 0.775"

Parts List
MODEL SLS/T 15W and 18W

1. Printed Circuit Board - Recognized Component printed wiring board, suitable for the solder time and temperature used by the manufacturer, and having a minimum flame testing of 94V-0 and an operating temperature rating of 130°C, 0.062 in. thickness.

2. RI1 Fusible Resistor - (5.6 ohms) - This device functions as a resistor and a fuse. It's a wire wound type device wound over a ceramic core and it's conformal coated (flame retardant).

3. L2 - Main Coil - Alternate construction as follows:
   - A. Core - Ferrite "E type", two piece construction. Each piece measures 0.650 in. in length, 0.237 in. in height and 0.300 in. in width. Center leg(s) is(are) gapped.
   - B. Bobbin - UL No. E4187 (M). Molded. Dimensions: L = 0.650 in.,H = 0.475 in., W = 0.540 in. Mounting pins are attached (molded) into the bobbin.
   - C. Winding - Polyurethane insulated copper wire # 33 gauge randomly wound and soldered to mounting pins of bobbin (249 turns).
     Min. temperature rating of 130°C, UL No. E125649 (M).
   - D. Assembling - The cores are placed over the wound bobbin, (one over the top and the other over the bottom) and the two ends of the "E cores" are glued together.

   Typical L2 value: 3.1 mH, ±10%

4. Lamp (Burner): Three bended fluorescent tubes of soda lime glass, connected by two bridges to pass the discharge, manufactured by Philips Lighting, Roosendaal, The Netherlands, and/or Monterrey , Mexico. Types SLS, secured to the mounting cover with cement.

5. Mounting Cover - UL Recognized component plastic (QMFZ2) material type: polybutylene terephthalate +30% fiber content pocan B 4235, white 09-058, Bayer A.G. Provided with openings as shown for passage of fluorescent tube. Secured by snap fit to the mounting ring. Cover overall dimension is 0.093 in. thick by 2 1/8 in. square by 7/16 in. height

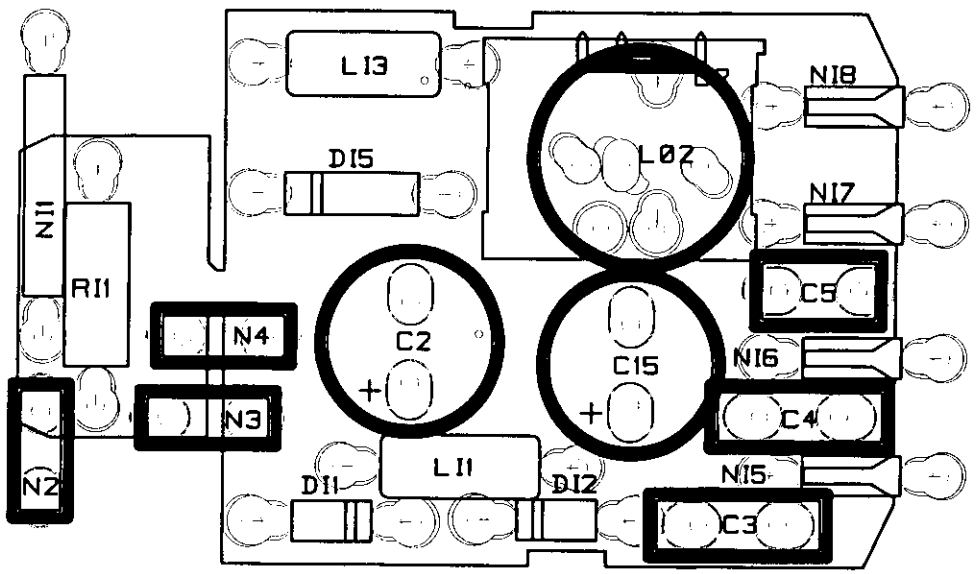
6. Intermediate Parts: UL recognized material. Arnite TO6-200, natural, AKZO Plastics BV.

7. Mounting Ring - UL Recognized component plastic (QMFZ2) material type: polybutylene terephthalate +30% fiber content pocan B 4235, white 09-058, Bayer A.G. or polybutylene terephthalate +20% fiber content, Arnite TV6-241 SN, white G2 04 83 flammability 94V-0, AKZO Plastics B. V. Secured by snap fit to the shell. Ring overall dimension is 0.078 in. thick by 2.6in. diameter by 0.200 in. height .

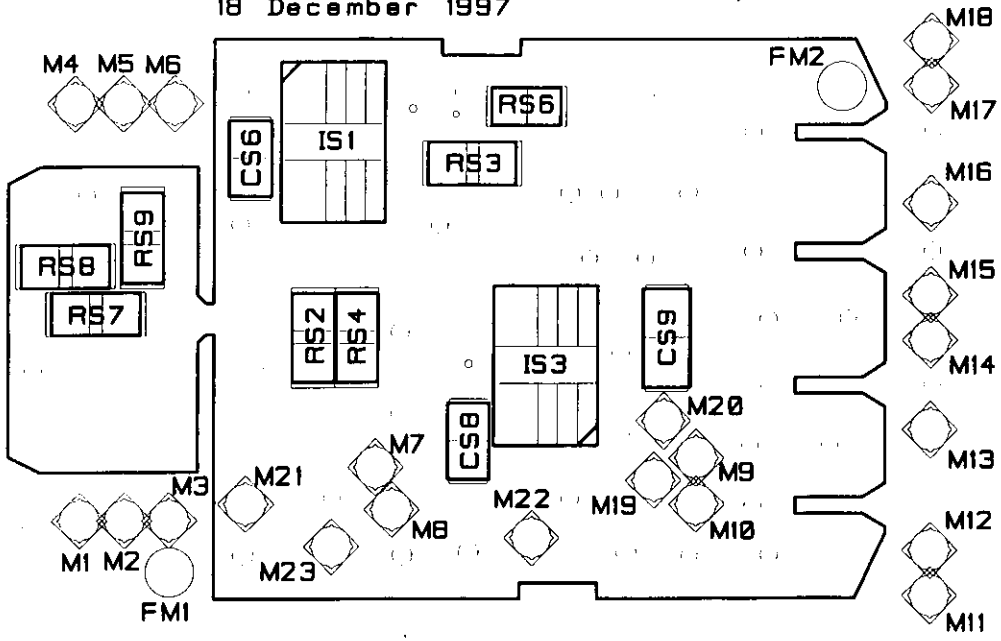
8. Screwshell (cap) - Copper alloy, with or without nickel plating. Minimum 0.008 in. thick, overall 1 in. diameter, 15/16 in. high, provided with three full threads. Center contact embedded in 1/8 in. thick glass insulation. Screwshell secured to the shell by six indentations around circumference at top which depress into shell flange. Complies with Specifications for Electric Lamp Bases and Holders - Screwshell Types, ANSI C81.10-1981.

9. Shell: UL recognized component plastic (QMFZ2). Material: polybutylene terephthalate +20% fiber content, Arnite TV6-241 SN, white G2 04 83 flammability 94V-0, AKZO Plastics B. V. , or Lexan grade 943 manufactured by General Electric. It is 0.040 in. nominal thickness. One end provided with 13/16 in. diameter by 9/16 in. deep flange for screwshell mounting and an opening on the other end for the mounting ring. Overall approximate dimensions: 2.6 in. diameter by 2.2 in. height.

SLS - T6 Silver
8222 690 05302 D Component - side
18 December 1997



SLS - T6 Silver Copper - side
8222 690 05302 D SMD - components
18 December 1997



SLS/T 15W

SLS/T 18W