

Customer :

No. M970041 (1 / 17)

ALPS ELECTRIC EUROPA GMBH

Date : Mar. 31, 1997

Attention :

Your ref. No.:

Your Part No.: MDLP3W104A

401598

SPECIFICATIONS

ALPS :

MODEL : MDLP3W104A

Spec. No. :

Sample No.:

RECEIPT STATUS
RECEIVED
By. Date
Signature
Name
Title

ALPS ELECTRIC CO., LTD.

DSG'D H. Nakamura

APP'D S. Akawa

ENG. DEPT. RF DEVICES DIVISION
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RF BOOSTER/MODULATOR PRODUCT
SPECIFICATION

This specification covers UHF output PLL modulator, booster and mixer, which conform to the television standard transmission system (NTSC-M, PAL-G/I/K, SECAM-L).

Model Applied: The specification conforms to the following model:

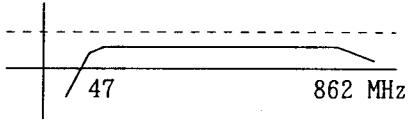
Cust Part No.	ALPS Model Name	Channel	Remarks
MDLP3W104A	MDLP3W104A	CH.21 to CH.69	

Customer name : ALPS ELECTRIC EUROPA GMBH

No.	ITEM	Page	No.	ITEM	Page
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1.2	Specify Performance	2	3.2	Structure & Dimension	12
1.3	Remark	3	3.3	Operation Performance	12
1.4	PLL Control Bits	4~5			
2.	Electrical Specification	6	4.	Durability Test	12
2.1	Video Characteristics	6	4.1	Vibration Test	12
2.2	Audio Characteristics	7	4.2	Tapping Test	12
2.3	Output Characteristics	8	4.3	Impact Test	12
2.4	Characteristics of Booster & Mixer	9	4.4	Static Discharge Proof	13
2.5	Power Supply	10	4.5	Life Test	13
2.6	Temperature Characteristics	10~11			
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									104A		
SYMB	DATE OR NO	APPD	CHKD.	DSGD.	APPD.	CHKD.	DSGD.	TITLE	DOCUMENT NO.		
					Mat. 31. '97		Mar. 31, '97	MDLP3W SPECIFICATION	(1 / 13)		
					S. Aikawa		H. Nakamura				
ALPS ELECTRIC CO., LTD.											

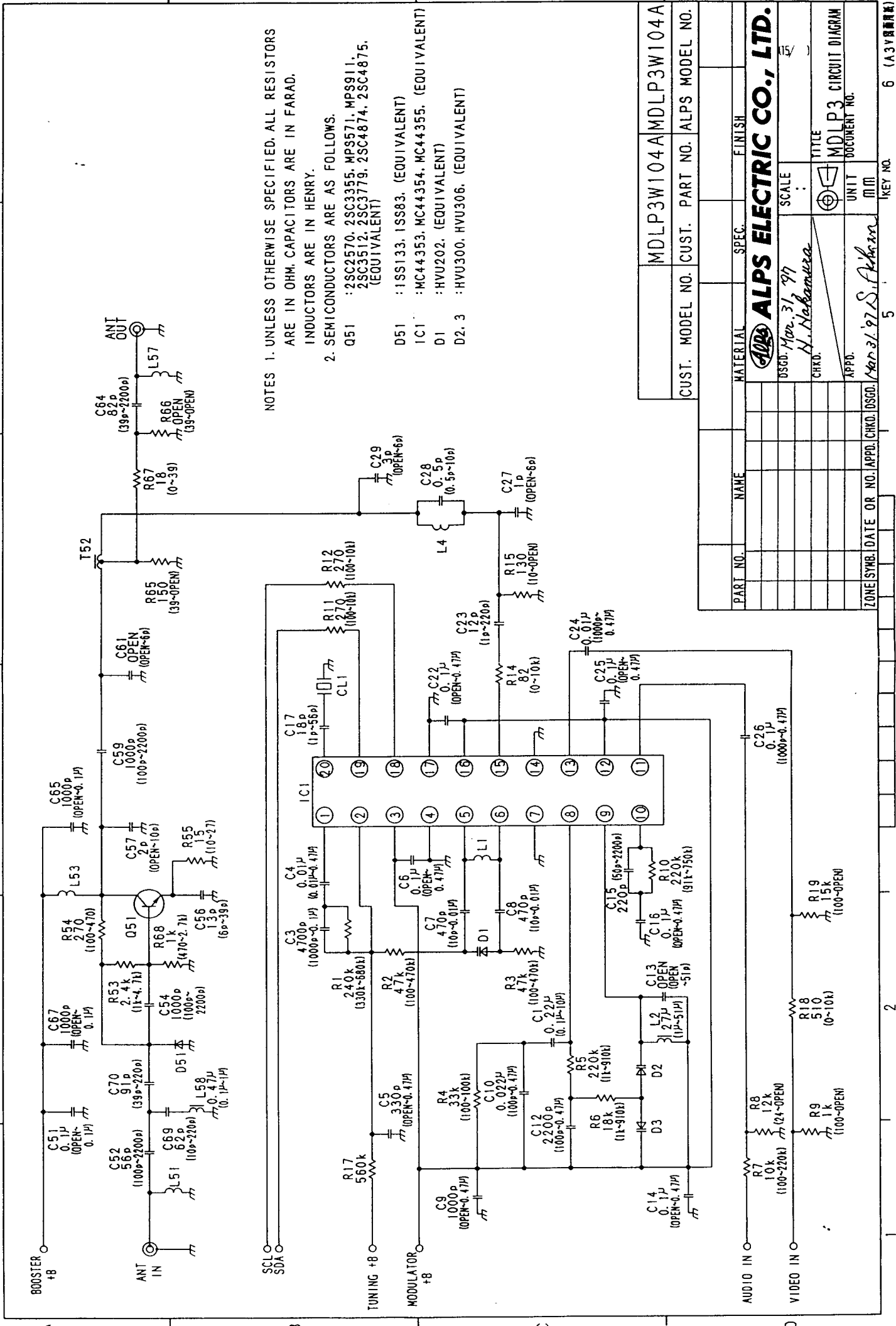
RF BOOSTER/MODULATOR PRODUCT
SPECIFICATION

No.	ITEM	STANDARD VALUE	MEASUREMENT METHOD																																			
2.4	Characteristics of Booster & Mixer																																					
2.4.1	Power Gain	3 + 4 dB - 3	ANT IN → ANT OUT (47MHz to 862MHz) 																																			
2.4.2	Noise Figure	9 dB Max.	ANT IN → ANT OUT (47MHz to 862MHz)																																			
2.4.3	VSWR of each Terminal	ANT IN : 3.5 Max. ANT OUT : 3 Max.	(47MHz to 862MHz)																																			
2.4.4	Voltage Leakage AERIAL IN Terminal	40 dB μ V Max.	75 Ω terminate. Unused terminal shall be terminated at 75 Ω . This applies to all the variable frequency ranges.																																			
2.4.5	Intermodulation ANT IN → ANT OUT	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>f1</th> <th>f2</th> <th>f(IM)</th> <th>INPUT LEVEL (75Ω) dBμV</th> <th>Inter Modulation Level dB</th> </tr> <tr> <th>MHz</th> <th>MHz</th> <th>MHz</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>500</td> <td>700</td> <td>200</td> <td>85</td> <td>50 Min.</td> </tr> <tr> <td>200</td> <td>210</td> <td>220</td> <td>85</td> <td>55 Min.</td> </tr> <tr> <td>175</td> <td>230</td> <td>55</td> <td>85</td> <td>50 Min.</td> </tr> <tr> <td>60</td> <td>55</td> <td>50</td> <td>85</td> <td>50 Min.</td> </tr> <tr> <td>600</td> <td>650</td> <td>700</td> <td>85</td> <td>55 Min.</td> </tr> </tbody> </table>	f1	f2	f(IM)	INPUT LEVEL (75 Ω) dB μ V	Inter Modulation Level dB	MHz	MHz	MHz			500	700	200	85	50 Min.	200	210	220	85	55 Min.	175	230	55	85	50 Min.	60	55	50	85	50 Min.	600	650	700	85	55 Min.	
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		DSGD.	TITLE																																			
			MDLP3W SPECIFICATION																																			
			DOCUMENT NO. (9 /)																																			
ALPS ELECTRIC CO., LTD.																																						

RF BOOSTER/MODULATOR PRODUCT
SPECIFICATION

SECTION	DESCRIPTION	STANDARD VALUE	MEASUREMENT METHOD
4.4	Static Proof Test	$\pm 15 \text{ kV} / 200 \text{ pF}$ After impressing voltage 5 times in each connector, no abnormality should occur.	ANT IN, ANT OUT Terminal Electrical discharge resistance : 150Ω
4.5	Life Test		
4.5.1	Heat Test	(Against initial value.)	a).Environmental conditions Temperature : $70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ Humidity : 40%RH to 45%RH b).Power Supply : OFF c).Measuring Time 0Hrs,100Hrs,250Hrs,500Hrs d).After using the above conditions, the tested modulator is left for one and a half hours at normal room temp.
	1.Video Modulation	$\pm 10 \%$	
	2.Audio Modulation	$\pm 25 \%$	
	3.Video Carrier Frequency	$\pm 200\text{kHz}$	
	4.Audio Carrier Frequency	$\pm 10 \text{ kHz}$	
	5.Video Output Level	$\pm 4 \text{ dB}$	
	6.Audio Output Level (fv-fa)	$\pm 4 \text{ dB}$	
4.5.2	Humidity Test	Same as in item 4.5.1	a).Environmental conditions Temperature : $60^{\circ}\text{C} \pm 3^{\circ}\text{C}$ Humidity : 90%RH to 95%RH Same as b),c),d)in item 4.5.1
4.5.3	Cold Test	Same as in item 4.5.1	a).Environmental conditions Temperature : $-20^{\circ}\text{C} \pm 3^{\circ}\text{C}$ Same as b),c),d)in item 4.5.1
4.5.4	Heat Shock Test	Same as in item 4.5.1	a).Environmental conditions $80^{\circ}\text{C} \pm 3^{\circ}\text{C} \dots 1 \text{ H}$ $-20^{\circ}\text{C} \pm 3^{\circ}\text{C} \dots 1 \text{ H}$ b).Power Supply : OFF c).Measurement : After 100 cycles. Same as d) in item 4.5.1
			104A
		APPD.	CHKD.
		DSGD.	TITLE
			MDLP3W SPECIFICATION
			DOCUMENT NO. (13 / 13)
SYMB.	DATE OR NO	APPD.	CHKD.
		DSGD.	

ALPS ELECTRIC CO., LTD.



NOTES 1. UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE IN OHM, CAPACITORS ARE IN FARAD, INDUCTORS ARE IN HENRY.

2. SEMICONDUCTORS ARE AS FOLLOWS.

Q51 : 2SC2570, 2SC3355, MPS571, MPS911, 2SC3512, 2SC3779, 2SC4874, 2SC4875, (EQUIVALENT)

D51 : 1SS133, 1SS83, (EQUIVALENT)

IC1 : MC44353, MC44354, MC44355, (EQUIVALENT)

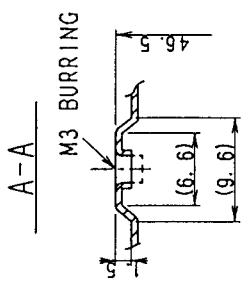
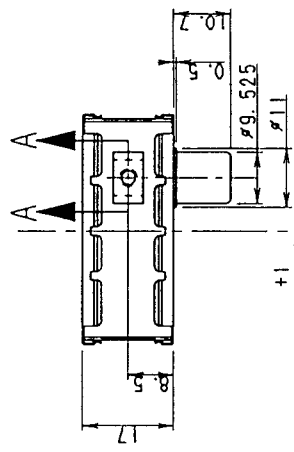
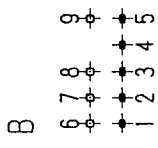
D1 : HYU202, (EQUIVALENT)

D2, 3 : HYU300, HYU306, (EQUIVALENT)

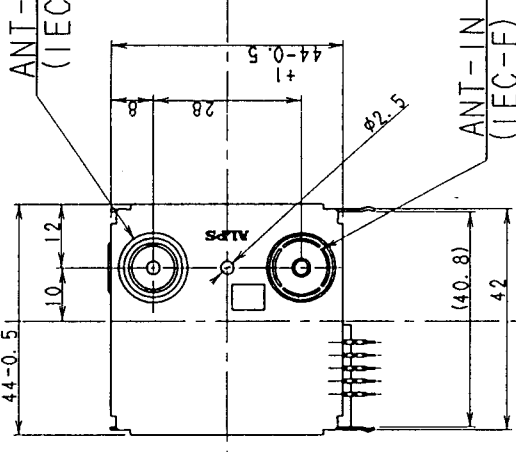
CUST. MODEL NO. MDLP3W104A		CUST. PART NO. ALPS MODEL NO.	
MATERIAL		SPEC.	
NAME		FINISH	
ALPS ELECTRIC CO., LTD.			
DESIGN. Mar. 31, '97		SCALE 1/5	
CHKD. H. Nakamura		TITLE MDLP3 CIRCUIT DIAGRAM	
APPD. Mar. 31, '97 S. Akabara		UNIT MM	
ZONE SYMB. DATE OR NO. APPD. CHKD. DESG.		KEY NO. 5	

CONNECTOR LAYOUT

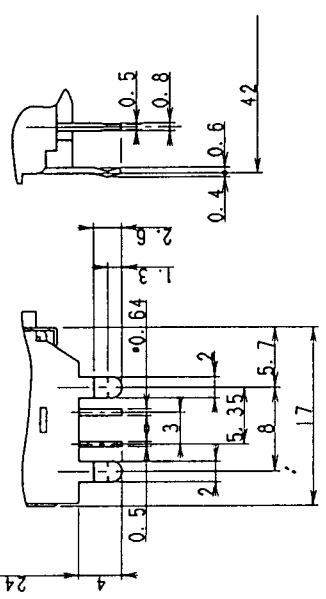
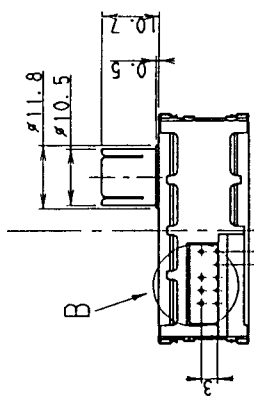
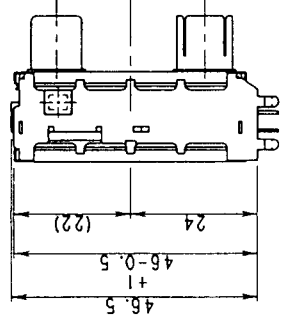
- 1. VIDEO IN
- 2. AUDIO IN
- 3. MD +B
- 4. NC
- 5. BST. +B
- 6. SDA
- 7. CLK
- 8. NC
- 9. TUNING +B



ANT-OUT
(IEC-M)



ANT-IN
(IEC-F)



- NOTE 1. TOLERANCES ARE ± 0.5 mm.
 UNLESS OTHERWISE SPECIFIED.
 2. SCREW LENGTH FROM MOUNTING FACE IS 2.5 mm MAX.
 3. ALPS CAN ALTER COVER HOLE DESIGN WITHOUT NOTICE IF NO ELECTRICAL DEGRADATION.

CUST. PART NO.
ALPS LOT NO.

PART NO.	NAME	MATERIAL	SPEC.	FINISH
MDLP3W104A	MDLP3W104A			
PRESENTATION OF LABEL		CUST. MODEL NO.	CUST. PART NO.	ALPS MODEL NO.
		MDLP3W104A		MDLP3W104A
DSGD.		TITLE		
CHKO.		SCALE		
APPD.		UNIT		
ZONE SYMB.		DOCUMENT NO.		
DATE OR NO.		M M		
APPD.		KEY NO.		
CHKO.		6 (A3V)		
DATE OR NO.		5		
APPD.		6 (A3V)		
CHKO.		6 (A3V)		

ALPS ELECTRIC CO., LTD.

MDLP3 ASSEMBLY DRAWING

Mar. 31 '97 K. Harada
 Mar. 21 '97 M. Nakasada

RECORD OF REVISIONS

MDLP3W104

DATE	PRESENT CONTENTS	NEW CONTENTS / REASON		DSGN BY
Mar.31,'97 (M970041)	N E W			N.NAKAMURA
		JAPAN	ALPS ELECTRIC CO.,LTD.	
		M A N U F A C T U R E R		