

APÊNDICE A: Relação de Material

RHEDE TECNOLOGIA S.A.

21/11/87

S P M

R5002502.DBF (CARTÃO ANALÓGICO MR27E)

Pag 1 1

REV	1	2	3	4	5	6	7	8
1	ALTERADA PARA R532/87	2	21-11-87	3	15.11.87	4	15.11.87	5
1	17M18 (SPECIAL TUBE)							
DESCRÇÃO								
DATA								
RESP.								
TÍTULO	CARTÃO ANALÓGICO MR27E							
PROJ.	RHEDE							
DESENHO	tecnologia							
CÓDIGO DO DOCUMENTO	R 5002502							
PÁGINA	1/							

Item	Código	Qtd	Descrição do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
1	01000302	2	DIP SWITCH 4 POLOS	J-S 0747-04	SMK	SE,SF (usar baixo perfil)
2	01002001	1	CHAVE 1 POLO REV. 1 MOM	15107N1FT1F	MAR-GIRIUS	CH4
3	01002101	3	CHAVE 1 POLO REV.	CR5322PT3	MAR-GIRIUS	CH1-3
4	03001201	2	PENTE SIMPLES/01 180. E	030150-1	AMP	0V
5	03001440	1	PENTE DUPL0/40 180. E	2-880152-0	AMP	J2
6	03003403	1	PENTE TRAVA SIMPLES/3 90. Au	A5046-03A30	MOLEX	J10
7	03003409	1	PENTE TRAVA SIMPLES/9 90. Au	A5046-09A30	MOLEX	J9
8	04001402	3	BORTA FUSIVEL 20 mm sem base	305.002	ION	F1,F2,F3
9	06000306	4	PARAFUSO M3 PAN PHIL N.1 6mm	M3x6	LIPGS	Dissipador
10	06000312	4	PARAFUSO M3 PAN PHIL N.1 12mm	M3x12	LIPGS	
11	06000401	4	PORCA M3	Preta	INDUPAR	Display
12	06000501	4	ARRUELA LIGA M3	Preta	INDUPAR	Espacadores
13	06000601	4	ARRUELA PRESSAO M3	Preta	INDUPAR	Espacadores
14	06001001	2	PARAFUSO RECARTEILHADO M3	9199025	TAUNUS	Painel frontal
15	06001101	2	BUCHA M3	9199025	TAUNUS	Painel frontal
16	07000101	6	ESP.TERMOENCOLHIVEL 2.4	1cm LUR 24	HELLERMAN	Xi (dissipador)
17	07000103	10	ESP.TERMOENCOLHIVEL 4.8	1cm LUR 48	HELLERMAN	Painel frontal
18	07002101	10	SPIRAL TUBE 1/8 POL	1cm	HELLERMAN	Fios painel frontal
19	08220010	5	FIO 22AWG PRE	1cm 11.397	PIRELLI	JW1,D37,D38,R100,A(2)
20	08221010	170	CABO FLEX 22AWG PRE	1cm 11.402	PIRELLI	CH1-4,X1
21	09000204	1	DISSIPADOR MR27E		RHEDE	X1
22	09000335	4	ESPACADOR M3 35mm		RHEDE	Suporte do cartao digital
23	10000101	2	TRANSF LINHA PRIVAT PERMALLOY	T-19B	YAMAZAKI	T2,T4
24	10000201	1	TRANSF LINHA COMUT	T-20BP	YAMAZAKI	T3
25	10000501	1	TRANSF DRIVER		RHEDE	T1
26	10000601	2	BOBINA RF 1.5 MH		RHEDE	L1,L2
27	11011003	1	RESISTOR 1/4W 5% 100 ohm	CR25	CONSTANTA	R206
28	11011006	1	RESISTOR 1/4W 5% 100 Kohm	CR25	CONSTANTA	R202
29	11011206	1	RESISTOR 1/4W 5% 120 Kohm	CR25	CONSTANTA	R226
30	11012704	1	RESISTOR 1/4W 5% 2.7 Kohm	CR25	CONSTANTA	R204
31	11015603	10	RESISTOR 1/4W 5% 560 ohm	CR25	CONSTANTA	R102,252-267
32	11017504	2	RESISTOR 1/4W 5% 7.5 Kohm	CR25	CONSTANTA	R95,97

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RHEDE TECNOLOGIA S.A.

21/11/87

S P M

R5002502.DBF (CARTAO ANALOGICO MR27E)

Pag : 2

Item	Código	Qtd	Descrição do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
33	11020000	1	RESISTOR 1/4W 1% 100 ohm	MR25	CONSTANTA	R56 = SET
34	11021003	1	RESISTOR 1/4W 1% 100 Kohm	MR25	CONSTANTA	R170
35	11021004	3	RESISTOR 1/4W 1% 1 Kohm	MR25	CONSTANTA	R167, 230, 276
36	11021005	2	RESISTOR 1/4W 1% 10 Kohm	MR25	CONSTANTA	R237, 238
37	11021005	7	RESISTOR 1/4W 1% 10 Kohm	MR25	CONSTANTA	R43, 101, 103, 105, 107-109
38	11021005	6	RESISTOR 1/4W 1% 10 Kohm	MR25	CONSTANTA	R123, 124, 127, 128, 132, 137
39	11021005	6	RESISTOR 1/4W 1% 10 Kohm	MR25	CONSTANTA	R168, 169, 215, 218, 220, 222
40	11021006	2	RESISTOR 1/4W 1% 100 Kohm	MR25	CONSTANTA	R134, 205
41	11021024	1	RESISTOR 1/4W 1% 1.02 Kohm	MR25	CONSTANTA	R193
42	11021055	1	RESISTOR 1/4W 1% 10.5 Kohm	MR25	CONSTANTA	R149
43	11021075	1	RESISTOR 1/4W 1% 10.7 Kohm	MR25	CONSTANTA	R190
44	11021103	1	RESISTOR 1/4W 1% 110 ohm	MR25	CONSTANTA	R75
45	11021104	1	RESISTOR 1/4W 1% 1.1 Kohm	MR25	CONSTANTA	R122
46	11021216	2	RESISTOR 1/4W 1% 121 Kohm	MR25	CONSTANTA	R195, 236
47	11021245	2	RESISTOR 1/4W 1% 12.4 Kohm	MR25	CONSTANTA	R80, 83
48	11021276	2	RESISTOR 1/4W 1% 127 Kohm	MR25	CONSTANTA	R87, 275
49	11021305	1	RESISTOR 1/4W 1% 13 Kohm	MR25	CONSTANTA	R234
50	11021336	1	RESISTOR 1/4W 1% 133 Kohm	MR25	CONSTANTA	R150
51	11021374	1	RESISTOR 1/4W 1% 1.37 Kohm	MR25	CONSTANTA	R200
52	11021375	1	RESISTOR 1/4W 1% 13.7 Kohm	MR25	CONSTANTA	R214
53	11021376	1	RESISTOR 1/4W 1% 137 Kohm	MR25	CONSTANTA	R191
54	11021406	1	RESISTOR 1/4W 1% 140 Kohm	MR25	CONSTANTA	R188
55	11021475	1	RESISTOR 1/4W 1% 14.7 Kohm	MR25	CONSTANTA	R189
56	11021545	1	RESISTOR 1/4W 1% 15.4 Kohm	MR25	CONSTANTA	R146
57	11021585	2	RESISTOR 1/4W 1% 15.8 Kohm	MR25	CONSTANTA	R62, 194
58	11021625	2	RESISTOR 1/4W 1% 16.2 Kohm	MR25	CONSTANTA	R147, 233
59	11021744	1	RESISTOR 1/4W 1% 1.74 Kohm	MR25	CONSTANTA	R198
60	11021826	1	RESISTOR 1/4W 1% 182 Kohm	MR25	CONSTANTA	R54
61	11021915	1	RESISTOR 1/4W 1% 19.1 Kohm	MR25	CONSTANTA	R88
62	11022003	1	RESISTOR 1/4W 1% 200 ohm	MR25	CONSTANTA	R239
63	11022005	2	RESISTOR 1/4W 1% 20 Kohm	MR25	CONSTANTA	R269, 270
64	11022006	1	RESISTOR 1/4W 1% 200 Kohm	MR25	CONSTANTA	R86

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RHEDE

Tecnologia

Projeto: 13

Desenho: Tab5e1 23-11-87

Engº :

Código do Documento

Página

Cartão Analógico
MR27E

R5002502

1/5

Itm	Código	Qtd	Descricao da componente	Ref.Comerc.	Fabricante	Referencia no Circuito
65	11022054	1	RESISTOR 1/4W 1% 2.05 Kohm	MR25	CONSTANTA	R187
66	11022214	4	RESISTOR 1/4W 1% 2.21 Kohm	MR25	CONSTANTA	R129,130,227,232
67	11022215	3	RESISTOR 1/4W 1% 22.1 Kohm	MR25	CONSTANTA	R121,136,138
68	11022554	1	RESISTOR 1/4W 1% 2.55 Kohm	MR25	CONSTANTA	R185
69	11022555	1	RESISTOR 1/4W 1% 25.5 Kohm	MR25	CONSTANTA	R176
70	11022614	1	RESISTOR 1/4W 1% 2.61 Kohm	MR25	CONSTANTA	R148
71	11022675	1	RESISTOR 1/4W 1% 26.7 Kohm	MR25	CONSTANTA	R131
72	11023074	1	RESISTOR 1/4W 1% 3.09 Kohm	MR25	CONSTANTA	R104
73	11023095	2	RESISTOR 1/4W 1% 30.9 Kohm	MR25	CONSTANTA	R64,144
74	11023245	2	RESISTOR 1/4W 1% 32.4 Kohm	MR25	CONSTANTA	R145,177
75	11023325	1	RESISTOR 1/4W 1% 33.2 Kohm	MR25	CONSTANTA	R135
76	11023573	1	RESISTOR 1/4W 1% 357 ohm	MR25	CONSTANTA	R225
77	11023574	1	RESISTOR 1/4W 1% 3.57 Kohm	MR25	CONSTANTA	R67
78	11023575	4	RESISTOR 1/4W 1% 35.7 Kohm	MR25	CONSTANTA	R173-175,179
79	11023924	2	RESISTOR 1/4W 1% 3.92 Kohm	MR25	CONSTANTA	R96,98
80	11023925	3	RESISTOR 1/4W 1% 39.2 Kohm	MR25	CONSTANTA	R82,139,221
81	11024325	1	RESISTOR 1/4W 1% 43.2 Kohm	MR25	CONSTANTA	R196
82	11024535	1	RESISTOR 1/4W 1% 45.3 Kohm	MR25	CONSTANTA	R235
83	11024754	4	RESISTOR 1/4W 1% 4.75 Kohm	MR25	CONSTANTA	R55,64,78,79,106,133
84	11024755	2	RESISTOR 1/4W 1% 47.5 Kohm	MR25	CONSTANTA	R58,274
85	11025115	3	RESISTOR 1/4W 1% 51.1 Kohm	MR25	CONSTANTA	R120,178,186
86	11025364	1	RESISTOR 1/4W 1% 5.36 Kohm	MR25	CONSTANTA	R229
87	11025494	1	RESISTOR 1/4W 1% 5.49 Kohm	MR25	CONSTANTA	R163
88	11025624	2	RESISTOR 1/4W 1% 5.62 Kohm	MR25	CONSTANTA	R68,216
89	11026043	2	RESISTOR 1/4W 1% 604 ohm	MR25	CONSTANTA	R223,273
90	11026045	2	RESISTOR 1/4W 1% 60.4 Kohm	MR25	CONSTANTA	R89,197
91	11026194	1	RESISTOR 1/4W 1% 6.19 Kohm	MR25	CONSTANTA	R60
92	11026195	1	RESISTOR 1/4W 1% 61.9 Kohm	MR25	CONSTANTA	R271
93	11026654	1	RESISTOR 1/4W 1% 6.65 Kohm	MR25	CONSTANTA	R268
94	11026814	5	RESISTOR 1/4W 1% 6.81 Kohm	MR25	CONSTANTA	R65,69,70,125,228
95	11026983	1	RESISTOR 1/4W 1% 698 ohm	MR25	CONSTANTA	R85
96	11027324	1	RESISTOR 1/4W 1% 7.32 Kohm	MR25	CONSTANTA	R211

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RHEDE

Tecnologia

PROJETO: 13

DESENHO: Robson 23-11-87

FOLHA: 1

CÓDIGO DO DOCUMENTO

PÁGINA

Cartão Analógico
MR27E

R5002502.DBF

3/3

DESCRIÇÃO

DATA

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TÍTULO

RHEDE TECNOLOGIA S.A.

21/11/87

S P M

R5002502.DBF (CARTAO ANALOGICO MR2ZE)

Pag : 4

Itm	Codigo	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
97	11027683	3	RESISTOR 1/4W 1% 768 ohm	MR25	CONSTANTA	R57,31,132
98	11027685	1	RESISTOR 1/4W 1% 76.8 Kohm	MR25	CONSTANTA	R201
99	11027874	1	RESISTOR 1/4W 1% 7.87 Kohm	MR25	CONSTANTA	R231
100	11028644	3	RESISTOR 1/4W 1% 8.68 Kohm	MR25	CONSTANTA	R209,210,272
101	11029093	1	RESISTOR 1/4W 1% 909 ohm	MR25	CONSTANTA	R192
102	11029095	1	RESISTOR 1/4W 1% 90.9 Kohm	MR25	CONSTANTA	R01
103	11029535	1	RESISTOR 1/4W 1% 95.3 Kohm	MR25	CONSTANTA	R151
104	11029764	1	RESISTOR 1/4W 1% 9.76 Kohm	MR25	CONSTANTA	R199
105	11051000	1	RESISTOR 2W 10% 0.1 ohm	CW-2C-1	DALE	R/3
106	12001108	1	CAP ELETROL 10V 1000uF	85049	ICOTRON	C65
107	12001227	1	CAP ELETROL 10V 220uF	85049	ICOTRON	C59
108	12002226	2	CAP ELETROL 25V 22uF	85049	ICOTRON	C103,Cx
109	12002477	3	CAP ELETROL 25V 470uF	85049	ICOTRON	C77,79,B1
110	12025105	1	CAP ELETROL A 100V 1uF	00000	ICOTRON	D35
111	12030108	1	CAP ELETROL 50V 1000uF	85049	ICOTRON	C22
112	12030476	1	CAP ELETROL 50V 47uF	85049	ICOTRON	C33
113	12106105	1	CAP TANTALO 35V 20% 1uF	8900	ICOTRON	C45
114	12107225	1	CAP TANTALO 20V 20% 2.2uF	8900	ICOTRON	C36
115	12108335	4	CAP TANTALO 15V 20% 3.3uF	8900	ICOTRON	C29,46,60,121
116	12204103	4	CAP CERAMICO 10nF	GSR 606-FA	THOMSON	C34,44,54,55
117	12215104	2	CAP CERAMICO 25V+80% 100nF	GF0-B609FA	THOMSON	C117,118
118	12215104	7	CAP CERAMICO 25V+80% 100nF	GF0-B609FA	THOMSON	C56,66,78,80,82,104,114
119	12215223	4	CAP CERAMICO 25V+80% 22nF	GF0-B606FA	THOMSON	C25-27,200
120	12216821	1	CAP CERAMICO 100V 10% 820pF	GER605FA	THOMSON	C32
121	12252222	1	CAP CER XSP 100V 10% 2200pF	PEB606FAAC4	THOMSON	C100
122	12305104	1	CAP POLIESTER 100V 10% 100nF	5450	ICOTRON	C57
123	12305105	1	CAP POLIESTER 100V 10% 1uF	5450	ICOTRON	C99
124	12403032	15	CAP POLIESTIRENO 1% 3300pF	605	MIAL	C37-39,67-70,83,84,87-92
125	14001103	2	FUSIVEL RAPIDO 20MM 100mA	20ADF	FUSI-BRAS	F2,F3
126	14001253	1	FUSIVEL RAPIDO 20MM 250mA	20AGF	FUSI-BRAS	F1
127	15000010	1	RELE 24VCC	MC2RC3	METALTEX	Rele
128	26001061	7	DIODO ZENER 5% 5V1 20MA	1N751A	MOTOROLA	D30-33,36,39,40

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Tecnologia

Código do Documento

Página

Proj. No: 13

Desenho: 1303.01 23-11-87

Ene:

Título

Cartão Analógico MR2ZE

Descrição

Data

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Rev

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8

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21/11/87

S P M

R5002502.DBF (CARTAO ANALOGICO MR27E)

Pag : 5

Item	Código	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
129	20001081	2	DIODO ZENER 5% 6V2 20MA	1N753A	MOTOROLA	D28,R59
130	20002002	14	DIODO DE SINAL	1N4148	MOTOROLA	D11-20,23,24,27,29
131	20003002	4	DIODO DE RETIFICACAO 100V	1N4002	MOTOROLA	D4-7
132	20004001	2	DIODO DE RETIFICACAO	1N4942	UNITRODE	D25,26
133	21000080	9	LED RETANGULAR VERMELHO	CQV36-3	ICOTRON	ALM-TST
134	22000101	3	TRANSISTOR NPN	BC547A	IBRAPE	Q3,7,11
135	22000201	3	TRANSISTOR PNP	BC557A	IBRAPE	Q8-10
136	22001001	1	TRANSISTOR NPN	MJE3055T	MOTOROLA	Q6
137	22001201	2	TRANSISTOR FET CANAL N	2N4856	NATIONAL	Q4,5
138	22001301	1	TRANSISTOR HIBRIDO POTENCIA	PIC601	UNITRODE	X1
139	24010014	1	6 INVERSORES SCHMITT TRIGGERS	SN74LS14N	TEXAS	U11
140	25004053	2	3 MUX-DEMUX 2 pra 1	CD4053BE	RCA	U33,35
141	26000030	12	AMPLIFICADOR OPERACIONAL	MC4558CP1	MOTOROLA	U9,10,14,18,23-26,29-32
142	26000030	4	AMPLIFICADOR OPERACIONAL	MC4558CP1	MOTOROLA	U34,36,39,41
143	26000180	1	FILTRO	MF4CN-50	NATIONAL	U38
144	26000420	1	ACOPLADOR OTICO	TIL 111	TEXAS	U42
145	26000560	1	AMPLIFICADOR OPERACIONAL	LF356N	NATIONAL	U27
146	26000570	1	REGULADOR LARGURA DE PULSO	SG3524N	SILIC.DEN.	U17
147	39005303	1	ADESIVO PAINEL MR27E	M77,C41-44	TERMOPRINT	Painel frontal
148	48000501	1	PAINEL MR27	M24	RHEDE	Painel frontal
149	50001502	1	PLACA ANALOGICA MR27	Proj. 13	CARTON	Circuito impresso

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Tecnologia

TITULO

Cartão Analógico
MR 27E

CÓDIGO DO DOCUMENTO

R5002502L

PÁGINA

5/5

PROD.Nº: 13

DESENHO: TP0501 23-11-87

ENOS :

RHEDE TECNOLOGIA S.A.

05/03/88

S P M

R5002503.DBF (CARTAO ANALOGICO MR27E)

Pag : 1

Itm	Codigo	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
1	01000302	2	DIP SWITCH 4 POLOS	J-S 8747-04	SMK	SE,SE (usar baixo perfil)
2	01002001	1	CHAVE 1 POLO REV. 1 MOM	15107M1FT1F	MAR-GIRIUS	CH4
3	01002101	3	CHAVE 1 POLO REV.	CR5322PT3	MAR-GIRIUS	CH1-3
4	03000401	1	MINI SHUNT DOBRADO	B80584-5	AMP	A
5	03001201	2	PENTE SIMPLES/01 180. E	B80150-1	AMP	0V
6	03001203	1	PENTE SIMPLES/03 180. E	B80150-3	AMP	A
7	03001440	1	PENTE DUPL0/40 180. E	2-B80152-0	AMP	J2
8	03003403	1	PENTE TRAVA SIMPLES/3 90. AU	A5046-03A30	MOLEX	J10
9	03003409	1	PENTE TRAVA SIMPLES/9 90. AU	A5046-09A30	MOLEX	J11
10	04001402	3	PORTA FUSIVEL 20 mm com base	S05.002	ION	F1,F2,F3
11	06000306	4	PARAFUSO M3 PAN PHIL N.1 6mm	M3x6	LIPOS	Dissipador
12	06000312	4	PARAFUSO M3 PAN PHIL N.1 12mm	M3x12	LIPOS	
13	06000401	4	PORCA M3	Preta	INDUPAR	Display
14	06000501	4	ARRUELA LISA M3	Preta	INDUPAR	Espacadores
15	06000601	4	ARRUELA PRESSAO M3	Preta	INDUPAR	Espacadores
16	06001001	2	PARAFUSO RECARTEILHADO M3	9199025	TAUNUS	Painel frontal
17	06001101	2	BUCHA M3	9199025	TAUNUS	Painel frontal
18	07000101	6	ESP.TERMOENCOLHIVEL 2.4	1cm LVR 24	HELLERMAN	X1(dissipador)
19	07000103	10	ESP.TERMOENCOLHIVEL 4.8	1cm LVR 48	HELLERMAN	Painel frontal
20	07002101	10	SPIRAL TUBE 1/8 POL	1cm	HELLERMAN	Fios painel frontal
21	08221010	170	CABO FLEX 22AWG PRE	1cm 11.402	PIRELLI	CH1-4
22	09000204	1	DISSIPADOR MR2/E		RHEDE	X1
23	09000335	4	ESPACADOR M3 35mm		RHEDE	Suporte do cartao digital
24	10000101	2	TRANSF LINHA PRIVAT PERMALLOY	T-19B	YAMAZAKI	T2,T4
25	10000201	1	TRANSF LINHA COMUT	T-28BP	YAMAZAKI	T3
26	10000501	1	TRANSF DRIVER		RHEDE	T1
27	10000601	2	BOBINA RF 1,5 uH		RHEDE	L1,L2
28	11011003	1	RESISTOR 1/4W 5% 100 ohm	CR25	CONSTANTA	R206
29	11011006	1	RESISTOR 1/4W 5% 100 Kohm	CR25	CONSTANTA	R202
30	11011206	1	RESISTOR 1/4W 5% 120 Kohm	CR25	CONSTANTA	R226
31	11012704	1	RESISTOR 1/4W 5% 2.7 Kohm	CR25	CONSTANTA	R204
32	11015603	10	RESISTOR 1/4W 5% 560 ohm	CR25	CONSTANTA	R102,259-267

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RHEDE

Tecnologia

CÓDIGO DO DOCUMENTO

PÁGINA

PROJETO: 13

DESENHO: Pabson 25-11-87

ENOT 1

TÍTULO
C-150 Analógico
MR27E

R5002503.DBF

1/5

REV	DATA	DESCRIÇÃO
2	5-2-88	RP 09-88
1	21-11-87	ALTERADA PARA RP32/87

R H E D E T E C N O L O G I A S . A .

05/03/88

S P M

R5002503.DBF (CARTAO ANALOGICO MR2/E)

Pag : 2

Itm	Codigo	Qtd	Descricao do componente				Ref.Comerc.	Fabricante	Referencia no Circuito
33	11017504	2	RESISTOR	1/4W	5%	7.5 Kohm	CR25	CONSTANTA	R95,97
34	11020000	1	RESISTOR	1/4W	1%		MR25	CONSTANTA	R56 = SET
35	11021003	1	RESISTOR	1/4W	1%	100 ohm	MR25	CONSTANTA	R170
36	11021004	3	RESISTOR	1/4W	1%	1 Kohm	MR25	CONSTANTA	R167,230,276
37	11021005	2	RESISTOR	1/4W	1%	10 Kohm	MR25	CONSTANTA	R237,238
38	11021005	6	RESISTOR	1/4W	1%	10 Kohm	MR25	CONSTANTA	R168,169,215,218,220,222
39	11021005	6	RESISTOR	1/4W	1%	10 Kohm	MR25	CONSTANTA	R123,124,127,128,132,137
40	11021005	7	RESISTOR	1/4W	1%	10 Kohm	MR25	CONSTANTA	R63,101,103,105,107-109
41	11021006	2	RESISTOR	1/4W	1%	100 Kohm	MR25	CONSTANTA	R134,205
42	11021024	1	RESISTOR	1/4W	1%	1.02 Kohm	MR25	CONSTANTA	R193
43	11021055	1	RESISTOR	1/4W	1%	10.5 Kohm	MR25	CONSTANTA	R149
44	11021075	1	RESISTOR	1/4W	1%	10.7 Kohm	MR25	CONSTANTA	R190
45	11021103	1	RESISTOR	1/4W	1%	110 ohm	MR25	CONSTANTA	R75
46	11021104	1	RESISTOR	1/4W	1%	1.1 Kohm	MR25	CONSTANTA	R122
47	11021216	2	RESISTOR	1/4W	1%	121 Kohm	MR25	CONSTANTA	R195,236
48	11021245	2	RESISTOR	1/4W	1%	12.4 Kohm	MR25	CONSTANTA	R80,83
49	11021276	2	RESISTOR	1/4W	1%	127 Kohm	MR25	CONSTANTA	R87,275
50	11021305	1	RESISTOR	1/4W	1%	13 Kohm	MR25	CONSTANTA	R234
51	11021336	1	RESISTOR	1/4W	1%	133 Kohm	MR25	CONSTANTA	R150
52	11021374	1	RESISTOR	1/4W	1%	1.37 Kohm	MR25	CONSTANTA	R200
53	11021375	1	RESISTOR	1/4W	1%	13.7 Kohm	MR25	CONSTANTA	R214
54	11021376	1	RESISTOR	1/4W	1%	137 Kohm	MR25	CONSTANTA	R191
55	11021406	1	RESISTOR	1/4W	1%	140 Kohm	MR25	CONSTANTA	R188
56	11021475	1	RESISTOR	1/4W	1%	14.7 Kohm	MR25	CONSTANTA	R189
57	11021545	1	RESISTOR	1/4W	1%	15.4 Kohm	MR25	CONSTANTA	R146
58	11021585	2	RESISTOR	1/4W	1%	15.8 Kohm	MR25	CONSTANTA	R62,194
59	11021625	2	RESISTOR	1/4W	1%	16.2 Kohm	MR25	CONSTANTA	R147,233
60	11021744	1	RESISTOR	1/4W	1%	1.74 Kohm	MR25	CONSTANTA	R190
61	11021826	1	RESISTOR	1/4W	1%	182 Kohm	MR25	CONSTANTA	R54
62	11021915	1	RESISTOR	1/4W	1%	19.1 Kohm	MR25	CONSTANTA	R88
63	11022003	1	RESISTOR	1/4W	1%	200 ohm	MR25	CONSTANTA	R239
64	11022005	2	RESISTOR	1/4W	1%	20 Kohm	MR25	CONSTANTA	R269,270

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RHEDE

Tecnologia

PROJ. Nº: 13

DESENHO: P06509 23-11-87

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CÓDIGO DO DOCUMENTO

Cartão Analógico
MR27E

R5002503.DBF

2/5

PÁGINA

DESCRIÇÃO

DATA

REQ.

REV.

1

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8

R H E D E T E C N O L O G I A S.A.

05/03/88

S P M

R5002503.DBF (CARTAO ANALOGICO MR27E)

Pag : 3

Item	Codigo	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
65	11022006	1	RESISTOR 1/4W 1% 200 Kohm	MR25	CONSTANTA	R86
66	11022054	1	RESISTOR 1/4W 1% 2.05 Kohm	MR25	CONSTANTA	R187
67	11022214	4	RESISTOR 1/4W 1% 2.21 Kohm	MR25	CONSTANTA	R129,130,227,232
68	11022215	3	RESISTOR 1/4W 1% 22.1 Kohm	MR25	CONSTANTA	R121,136,138
69	11022554	1	RESISTOR 1/4W 1% 2.55 Kohm	MR25	CONSTANTA	R185
70	11022555	1	RESISTOR 1/4W 1% 25.5 Kohm	MR25	CONSTANTA	R176
71	11022614	1	RESISTOR 1/4W 1% 2.61 Kohm	MR25	CONSTANTA	R148
72	11022675	1	RESISTOR 1/4W 1% 26.7 Kohm	MR25	CONSTANTA	R131
73	11023094	1	RESISTOR 1/4W 1% 3.09 Kohm	MR25	CONSTANTA	R104
74	11023095	2	RESISTOR 1/4W 1% 30.9 Kohm	MR25	CONSTANTA	R64,144
75	11023245	2	RESISTOR 1/4W 1% 32.4 Kohm	MR25	CONSTANTA	R145,177
76	11023325	1	RESISTOR 1/4W 1% 33.2 Kohm	MR25	CONSTANTA	R135
77	11023573	1	RESISTOR 1/4W 1% 357 ohm	MR25	CONSTANTA	R225
78	11023574	1	RESISTOR 1/4W 1% 3.57 Kohm	MR25	CONSTANTA	R67
79	11023575	4	RESISTOR 1/4W 1% 35.7 Kohm	MR25	CONSTANTA	R173-175,179
80	11023924	2	RESISTOR 1/4W 1% 3.92 Kohm	MR25	CONSTANTA	R96,98
81	11023925	3	RESISTOR 1/4W 1% 39.2 Kohm	MR25	CONSTANTA	R82,139,221
82	11024325	1	RESISTOR 1/4W 1% 43.2 Kohm	MR25	CONSTANTA	R196
83	11024535	1	RESISTOR 1/4W 1% 45.3 Kohm	MR25	CONSTANTA	R235
84	11024754	6	RESISTOR 1/4W 1% 4.75 Kohm	MR25	CONSTANTA	R55,66,78,79,106,133
85	11024755	2	RESISTOR 1/4W 1% 47.5 Kohm	MR25	CONSTANTA	R58,274
86	11025115	3	RESISTOR 1/4W 1% 51.1 Kohm	MR25	CONSTANTA	R120,178,186
87	11025364	1	RESISTOR 1/4W 1% 5.36 Kohm	MR25	CONSTANTA	R229
88	11025494	1	RESISTOR 1/4W 1% 5.49 Kohm	MR25	CONSTANTA	R163
89	11025624	2	RESISTOR 1/4W 1% 5.62 Kohm	MR25	CONSTANTA	R68,216
90	11026043	2	RESISTOR 1/4W 1% 604 ohm	MR25	CONSTANTA	R223,273
91	11026045	2	RESISTOR 1/4W 1% 60.4 Kohm	MR25	CONSTANTA	R89,197
92	11026194	1	RESISTOR 1/4W 1% 6.19 Kohm	MR25	CONSTANTA	R60
93	11026195	1	RESISTOR 1/4W 1% 61.9 Kohm	MR25	CONSTANTA	R271
94	11026654	1	RESISTOR 1/4W 1% 6.65 Kohm	MR25	CONSTANTA	R268
95	11026814	5	RESISTOR 1/4W 1% 6.81 Kohm	MR25	CONSTANTA	R65,69,70,125,228
96	11026983	1	RESISTOR 1/4W 1% 698 ohm	MR25	CONSTANTA	R85

000087

RHEDE

Tecnologia

PROJ. 13

DESENHO: Robson 23-11-87

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CÓDIGO DO DOCUMENTO

PÁGINA

Cartão Analógico

MR27E

R5002503.DBF

3/5

DESCRIÇÃO

DATA

RESP.

REV

RHEDE TECNOLOGIA S.A.

05/03/88

S P M

R5002503.00F (CARTEAO ANALOGICO MR27E)

Pag : 4

Itm	Codigo	Qtd	Descricao do componente			Ref.Comerc.	Fabricante	Referencia no Circuito
97	11027324	1	RESISTOR	1/4W	1% 7.32 Kohm	MR25	CONSTANTA	R211
98	11027683	3	RESISTOR	1/4W	1% 768 ohm	MR25	CONSTANTA	R57,61,162
99	11027685	1	RESISTOR	1/4W	1% 76.8 Kohm	MR25	CONSTANTA	R201
100	11027874	1	RESISTOR	1/4W	1% 7.87 Kohm	MR25	CONSTANTA	R231
101	11028664	3	RESISTOR	1/4W	1% 8.66 Kohm	MR25	CONSTANTA	R209,210,272
102	11029093	1	RESISTOR	1/4W	1% 909 ohm	MR25	CONSTANTA	R192
103	11029095	1	RESISTOR	1/4W	1% 90.9 Kohm	MR25	CONSTANTA	R81
104	11029535	1	RESISTOR	1/4W	1% 95.3 Kohm	MR25	CONSTANTA	R151
105	11029764	1	RESISTOR	1/4W	1% 9.76 Kohm	MR25	CONSTANTA	R199
106	11051000	1	RESISTOR	2W	10% 0.1 ohm	EW-20-1	DALE	R76
107	12001108	1	CAP ELETROL	10V	1000uF	85049	ICOTRON	C65
108	12001227	1	CAP ELETROL	10V	220uF	85049	ICOTRON	C59
109	12002226	3	CAP ELETROL	25V	22uF	85049	ICOTRON	C35,48,103
110	12002477	3	CAP ELETROL	25V	470uF	85049	ICOTRON	C77,79,81
111	12025105	1	CAP ELETROL A	100V	1uF	80000	ICOTRON	D35
112	12030100	1	CAP ELETROL	50V	1000uF	85049	ICOTRON	C22
113	12030476	1	CAP ELETROL	50V	47uF	85049	ICOTRON	C33
114	12106105	1	CAP TANTALO	35V 20%	1uF	8900	ICOTRON	C45
115	12107225	1	CAP TANTALO	20V 20%	2.2uF	8900	ICOTRON	C36
116	12108335	4	CAP TANTALO	15V 20%	3.3uF	8900	ICOTRON	C29,46,60,121
117	12204103	4	CAP CERAMICO		10nF	BSR 606 FA	THOMSON	C34,44,54,55
118	12215104	3	CAP CERAMICO	25V+80%	100nF	GF0-B609FA	THOMSON	C24,117,118
119	12215104	7	CAP CERAMICO	25V+80%	100nF	GF0-B609FA	THOMSON	C56,66,78,80,82,104,114
120	12215223	4	CAP CERAMICO	25V+80%	22nF	GF0-B606FA	THOMSON	C25-27,43
121	12216821	2	CAP CERAMICO	100V 10%	820pF	DEB603FA	THOMSON	C32,58
122	12240104	1	CAP CER MULT	63V+80%	100nF	UDW905FAAC4	THOMSON	C61
123	12252222	1	CAP CER XSP	100V 10%	2200pF	PEB606FAAC4	THOMSON	C100
124	12305104	1	CAP POLIESTER	100V 10%	100nF	5450	ICOTRON	C57
125	12305105	1	CAP POLIESTER	100V 10%	1uF	5450	ICOTRON	C99
126	12403332	15	CAP POLIESTIRENO	1%	3300pF	605	MIAL	C37-39,67-70,83,84,87-92
127	14001103	2	FUSIVEL RAPIDO	20MM	100mA	20AGF	FUSI-BRAS	F2,F3
128	14001253	1	FUSIVEL RAPIDO	20MM	250mA	20AGF	FUSI-BRAS	F1

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RHEDE

Tecnologia

PROJ.Nº: 13

DESENHO: P0501 23-11-87

ENQ :

CÓDIGO DO DOCUMENTO

PÁGINA

TÍTULO

Cartão Analógico
MR 27 E

R5002503.00F

4/5

REV	1	2	3	4	5	6	7	8
DESCRICOÃO								
DATA								
RESP.								

RHEDE TECNOLOGIA S.A.

05/03/88

G P M

R5002503.DBF (CARTAO ANALOGICO MR27E)

Pag : 5

Itm	Codigo	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
129	15000010	1	RELE 24VCC	MCH2R03	METALTEX	RL1
130	20001061	7	DIODO ZENER 5% 5V1 20MA	1N751A	MOTOROLA	D30-33,36,39,40
131	20001081	2	DIODO ZENER 5% 6V2 20MA	1N753A	MOTOROLA	D12,28
132	20002002	14	DIODO DE SINAL	1N4148	MOTOROLA	D10,11,13-20,23,24,27,29
133	20003002	4	DIODO DE RETIFICACAO 100V	1N4002	MOTOROLA	D4-7
134	20004001	2	DIODO DE RETIFICACAO	1N4942	UNITRODE	D25,26
135	21000080	9	LED RETANGULAR VERMELHO	EQV36-3	ICOTRON	ALM-18T
136	22000101	3	TRANSISTOR NPN	BC547A	IBRAPE	Q3,7,11
137	22000201	3	TRANSISTOR PNP	BC557A	IBRAPE	Q8-10
138	22001001	1	TRANSISTOR NPN	MJE3055T	MOTOROLA	Q6
139	22001201	2	TRANSISTOR FET CANAL N	2N4856	NATIONAL	Q4,5
140	22001301	1	TRANSISTOR HIBRIDO POTENCIA	PIC601	UNITRODE	X1
141	24010014	1	6 INVERSORES SCHMITT TRIGGERS	SN74LS14N	TEXAS	U11
142	25004053	2	3 MUX-DEMUX 2 pra 1	CD4053BE	RCA	U33,35
143	26000030	12	AMPLIFICADOR OPERACIONAL	MC4558CP1	MOTOROLA	U9,10,14,18,23-26,29-32
144	26000030	4	AMPLIFICADOR OPERACIONAL	MC4558CP1	MOTOROLA	U34,36,39,41
145	26000180	1	FILTRO	MF4CN-50	NATIONAL	U38
146	26000420	1	ACOPLADOR OTICO	TTL 111	TEXAS	U42
147	26000560	1	AMPLIFICADOR OPERACIONAL	LF356N	NATIONAL	U27
148	26000570	1	REGULADOR LARGURA DE PULSO	SG3524N	SILIC.GEN.	U17
149	39005303	1	ADESIVO PAINEL MR27E	M77,C41-44	TERMOPRINT	Painel frontal
150	48000501	1	PAINEL MR27	M24	RHEDE	Painel frontal
151	50001503	1	PLACA ANALOGICA MR27	Proj. 13	CARTON	Circuito impresso
152	99990001	0	Soldar jumper nas referencias			JW1,R100

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Tecnologia

PROJ. Nº: 13

DESENHO: Robson 23-11-87

ENR 1

Código do Documento

Cartão Analógico
MR27E

R501012510311

PÁGINA

5/5

DESCRIÇÃO

DATA

RESF.

TÍTULO

RHEDE TECNOLOGIA S.A.

05/03/88

S P R

R3002602.D01 (CARTÃO DIGITAL MR27E)

Pag 2 1

Itm	Código	Qtd	Descrição do componente	Ref. Comerc.	Fabricante	Referência no Circuito
1	01000302	1	DIP SWITCH 4 POLOS	J-5 8747-04	SMK	SD
2	01001002	2	DIP SWITCH 8 POLOS	J-8 8747-08	SMK	SA,SB
3	02001201	2	PENTE SIMPLES/01 180. F	BB0150-1	AMP	0V
4	03001420	1	PENTE DUPL0/20 180. E	1-000152-0	AMP	J6
5	03001426	1	PENTE DUPL0/26 180. F	1-000152-3	AMP	J3
6	03001440	1	PENTE DUPL0/40 180. E	2-000152-0	AMP	J2
7	04000501	2	SOQUETE 28 PINOS SMDA	SPT145	CELIS	U5,41
8	11011003	2	RESISTOR 1/4W 5% 100 ohm	CR25	CONSTANTA	R11,R12
9	11011005	13	RESISTOR 1/4W 5% 10 Kohm	CR25	CONSTANTA	R2-10,13,27,28,29
10	11011006	1	RESISTOR 1/4W 5% 100 Kohm	CR25	CONSTANTA	R33
11	11011306	1	RESISTOR 1/4W 5% 130 Kohm	CR25	CONSTANTA	R24
12	11012204	3	RESISTOR 1/4W 5% 2.2 Kohm	CR25	CONSTANTA	R16,25,30
13	11013606	1	RESISTOR 1/4W 5% 360 Kohm	CR25	CONSTANTA	R32
14	11014805	1	RESISTOR 1/4W 5% 68 Kohm	CR25	CONSTANTA	R31
15	11020000	1	RESISTOR 1/4W 1% -	MR25	CONSTANTA	R19 = SET
16	11021005	2	RESISTOR 1/4W 1% 10 Kohm	MR25	CONSTANTA	R20,23
17	11021104	1	RESISTOR 1/4W 1% 1.1 Kohm	MR25	CONSTANTA	R26
18	11021105	1	RESISTOR 1/4W 1% 11 Kohm	MR25	CONSTANTA	R21
19	11022105	1	RESISTOR 1/4W 1% 21.5 Kohm	MR25	CONSTANTA	R18
20	11041005	4	RESISTOR POTOTA 1/8W 5% 10K	KPL0S103J	ROHM	RN1-RN4
21	12029226	1	CAP ELETROL A 16V 22uF	00000	ICOTRON	C71
22	12204103	1	CAP CERAMICO 10nF	0SR 606-FA	THOMSON	C4
23	12214472	1	CAP CERAMICO 500V 20% 4700nF	BLX400FA	THOMSON	C46
24	12215104	23	CAP CERAMICO 25V+00% 100nF	DF0-D609FA	THOMSON	C45,47-49,51-66,68-70
25	12215104	28	CAP CERAMICO 25V+00% 100nF	GF0-D609FA	THOMSON	C1-3,6-10,16,22,23,28-44
26	12216331	8	CAP CERAMICO 100V 10% 370pF	DEB604FA	THOMSON	C18-21,24-27
27	12216821	6	CAP CERAMICO 100V 10% 820pF	DEB605FA	THOMSON	C11-15,17
28	12251680	1	CAP CER NPO 100V 10% 48pF	PEB4071AAC4	THOMSON	C5
29	12252101	1	CAP CER XSP 100V 10% 100nF	PEB604FAAC4	THOMSON	C50
30	12252102	1	CAP CER XSP 100V 10% 1000pF	PEB605FAAC4	THOMSON	C67
31	13010010	1	OSCILADOR 23261.6 KHz 100ppm	R1100AM	MOTOROLA	Y1
32	20001061	1	DIODO ZENER 5% 5V1 20mA	1N751A	MOTOROLA	D4

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RHEDE

Tecnologia e
Desenvolvimento

PROD Nº 13

DESENHO Nº 07-07-87

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CÓDIGO DO DOCUMENTO

R.3002602

PÁGINA

1/2

REV	DATA	DESCRIÇÃO
1	16-07-87	Revisão final
2	17-8-87	Revisão final
3	01-1-88	Revisão final
4	21-11-87	Revisão final
5	21-11-87	Revisão final
6		
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RHEDE TECNOLOGIA S.A.

05/03/88

S P M

R5002602.DBF (CARTAO DIGITAL MR27E)

Pag : 2

Itm	Codigo	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
33	20002002	1	DIODO DE SINAL	1N4148	MOTOROLA	D3
34	20003002	2	DIODO DE RETIFICACAO 100V	1N4002	MOTOROLA	D1,D2
35	22000101	1	TRANSISTOR NPN	BC547A	IBRAPE	Q1
36	24010000	5	4 NAND:2	SN74LS00N	TEXAS	U16,18,27,37,44
37	24010032	2	4 OR:2	SN74LS32N	TEXAS	U17,29
38	24010074	2	2 FLIP-FLOP D	SN74LS74AN	TEXAS	U43,46
39	24010139	2	2 DECOD. 2 pra 4	SN74LS139N	TEXAS	U20,35
40	24010164	3	SHIFT 8 BITS	SN74LS164N	TEXAS	U15,21,25
41	24010165	1	SHIFT 8 BITS	SN74LS165N	TEXAS	U45
42	24010174	1	6 FLIP-FLOP D	SN74LS174N	TEXAS	U6
43	24010245	2	8 BUS TRANSCEIVER 3state	SN74LS245N	TEXAS	U2,33
44	24010373	2	8 LATCHES D 3state	SN74LS373N	TEXAS	U7,36
45	24010393	2	2 CONTADOR:16	SN74LS393N	TEXAS	U14,19
46	24020010	1	3 NAND:3	SN74ALS10N	TEXAS	U38
47	24020074	2	2 FLIP-FLOP D	SN74ALS74N	TEXAS	U39,40
48	25004053	3	3 MUX-DEMUX 2 pra 1	CD4053BE	RCA	U13,22,23
49	26000010	2	LINE RECEIVER RS-232-C	MC1489L	MOTOROLA	U10,12
50	26000021	2	LINE DRIVER RS-232-C	DS14C88N	NATIONAL	U11,24
51	26000030	1	AMPLIFICADOR OPERACIONAL	MC4558CP1	MOTOROLA	U28
52	26000060	1	SAMPLE & HOLD	LF398N	NATIONAL	U26
53	26000100	1	TIMER	LM555CN	NATIONAL	U47
54	26000500	1	CONVERSOR A-D	AD7574JN	AN.DEVICES	U32
55	26000510	1	CONVERSOR D-A	NE5018N	SIGNETICS	U4
56	26000530	3	EXPANSOR DE I/O	8155-2	INTEL	U1,9,31
57	26000540	2	MICROPROCESSADOR	8031	INTEL	U8,42
58	26000631	1	MODULADOR 4800 BPS	TX 0631	RHEDE	U3
59	26000641	1	DEMODULADOR 4800 BPS	RX 0641	RHEDE	U34
60	50001402	1	PLACA DIGITAL MR27	Proj. 13	CARTON	Circuito impresso
61	80010501	1	EPROM 00620 B. MR27E-TX	R0010501	RHEDE	U5
62	80010601	1	EPROM 00620 B. MR27E-RX	R0010601	RHEDE	U41
63	99990001	0	Soldar Jumper nas referencias			R14,1W3

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RHEDE

Tecnologia

TITULO

Cartao Digital

MR27E

CODIGO DO DOCUMENTO

R5002602

PROJ. 13

DESIGNO: Taboas 25-1-87

ENG. I

PAGINA

2/2

R H E D E T E C N O L O G I A S.A.

21/11/97

S P M

R5002802.DBF (CARTAO ANALOGICO MR27B)

Pag : 1

Itm	Código	Qtd	Descrição do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
1	01000302	2	DIP SWITCH 4 POLOS	J-S 8747-04	SMK	SE, SF
2	01002001	1	CHAVE 1 POLO REV. 1 MOM	15102M1FT1F	MAR-GIRIUS	CH1
3	01002101	3	CHAVE 1 POLO REV.	CR5322P13	MAR-GIRIUS	CH1-3
4	03000316	1	CONECTOR PARA CABO PLANO 16p	1-880023-6	AMP	Cabo do display
5	03000401	1	MINI SHUNT DOURADO	880584-5	AMP	A
6	03001201	2	PENTE SIMPLES/01 180. E	880150-1	AMP	0V
7	03001203	1	PENTE SIMPLES/03 180. E	880150-3	AMP	A
8	03001408	1	PENTE DUPL0/08 180. E	0-880152-4	AMP	J0
9	03001440	1	PENTE DUPL0/40 180. E	2-880152-0	AMP	J2
10	03003503	1	PENTE TRAVA SIMPLES/3 180. Au	A5045-03A38	MOLEX	J10
11	03003804	3	Tomada 4 POLOS BI 4 PA	5528.6	CONEXEL	T01-3
12	03004004	3	PENTE 4 POLOS SL 4 PA horiz.	1124.6	CONEXEL	T01-3
13	03004215	1	CONECTOR FEMEA-15 PINOS	2,54MM015	CELS	Cabo do display
14	03004301	14	TERMINAL PARA 000042...	TERMINAL FC	CELS	Cabo do display
15	03004814	1	PENTE SIMPLES/14 180. E	2,54MM014	CELS	Cartao display
16	04001402	3	PORTA FURIVEL 20 mm com base	505.002	TON	F1, F2, F3
17	06000306	0	PARAFUSO M3 PAN PHIL N.1 6mm	M3x6	LIPOS	Display, Dissipador
18	06000312	4	PARAFUSO M3 PAN PHIL N.1 12mm	M3x12	LIPOS	
19	06000401	4	PORCA M3	Preta	INDUPAR	Display
20	06000501	4	ARRUELA LISA M3	Preta	INDUPAR	Espacadores
21	06000601	4	ARRUELA PRESSAO M3	Preta	INDUPAR	Espacadores
22	06001001	2	PARAFUSO RECARTEADO M3	9199025	TAUNUS	Painel frontal
23	06001101	2	BUCHA M3	9199025	TAUNUS	Painel frontal
24	07000101	6	ESP.TERMOENCOLHIVEL 2.4	1cm LVR 24	HELLERMAN	X1(dissipador)
25	07000103	10	ESP.TERMOENCOLHIVEL 4.8	1cm LVR 40	HELLERMAN	Painel frontal
26	070002101	18	SPIRAL TUBE 1/8 POL.	1cm	HELLERMAN	Fios painel frontal
27	08220010	4	FIO 22AWG PRE	1cm 11.397	PIRELLI	JW1, D37, D38, R100
28	08221010	170	CABO FLEX 22AWG PRE	1cm 11.402	PIRELLI	CH1-4, X1
29	08280160	50	CABO PLANO 20AWG 120 CIN	1cm 0-0499146-2	AMP	Cabo do display
30	09000202	1	DISSIPADOR MR27		RHEDE	X1
31	09000350	4	ESPACADOR M3 50mm		RHEDE	Suporte do cartao digital
32	10000101	2	TRANSF LINHA PRIVAT PERMALLOY T-19B		YAMAZAKI	I2, I4

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Tecnologia e
Desenvolvimento

PROD Nº: 13

DESENHO

ENG

9-12-95

CÓDIGO DO DOCUMENTO

CARTEIRO
ANALÓGICO
MR27B

R 5002802

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PAGINA

R H E D E T E C N O L O G I A S . A .

21/11/87

S P M

R5002802.DBF (CARTAO ANALOGICO MR27B)

Pag : 2

Itm	Codigo	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
33	10000201	1	TRANSF LINHA COMUT	T-28BP	YAMAZAKI	T3
34	10000501	1	TRANSF DRIVER		RHEDE	T1
35	10000601	2	BOBINA RF 1,5 uH		RHEDE	L1, L2
36	11011003	1	RESISTOR 1/4W 5% 100 ohm	CR25	CONSTANTA	R206
37	11011006	1	RESISTOR 1/4W 5% 100 Kohm	CR25	CONSTANTA	R202
38	11011206	1	RESISTOR 1/4W 5% 120 Kohm	CR25	CONSTANTA	R226
39	11012205	1	RESISTOR 1/4W 5% 22 Kohm	CR25	CONSTANTA	R203
40	11012704	1	RESISTOR 1/4W 5% 2.7 Kohm	CR25	CONSTANTA	R204
41	11013904	2	RESISTOR 1/4W 5% 3.9 Kohm	CR25	CONSTANTA	R212, 213
42	11015603	10	RESISTOR 1/4W 5% 560 ohm	CR25	CONSTANTA	R102, 259-267
43	11017504	2	RESISTOR 1/4W 5% 7.5 Kohm	CR25	CONSTANTA	R95, 97
44	11020000	1	RESISTOR 1/4W 1%	MR25	CONSTANTA	R56 = SET
45	11021003	1	RESISTOR 1/4W 1% 100 ohm	MR25	CONSTANTA	R170
46	11021004	3	RESISTOR 1/4W 1% 1 Kohm	MR25	CONSTANTA	R167, 230, 276
47	11021005	2	RESISTOR 1/4W 1% 10 Kohm	MR25	CONSTANTA	R237, 238
48	11021005	7	RESISTOR 1/4W 1% 10 Kohm	MR25	CONSTANTA	R168, 169, 215, 218-220, 222
49	11021005	6	RESISTOR 1/4W 1% 10 Kohm	MR25	CONSTANTA	R123, 124, 127, 128, 132, 137
50	11021005	7	RESISTOR 1/4W 1% 10 Kohm	MR25	CONSTANTA	R63, 101, 103, 105, 107-109
51	11021006	2	RESISTOR 1/4W 1% 100 Kohm	MR25	CONSTANTA	R134, 205
52	11021024	1	RESISTOR 1/4W 1% 1.02 Kohm	MR25	CONSTANTA	R193
53	11021055	1	RESISTOR 1/4W 1% 10.5 Kohm	MR25	CONSTANTA	R149
54	11021075	1	RESISTOR 1/4W 1% 10.7 Kohm	MR25	CONSTANTA	R190
55	11021103	1	RESISTOR 1/4W 1% 110 ohm	MR25	CONSTANTA	R75
56	11021104	1	RESISTOR 1/4W 1% 1.1 Kohm	MR25	CONSTANTA	R122
57	11021216	2	RESISTOR 1/4W 1% 121 Kohm	MR25	CONSTANTA	R195, 236
58	11021245	2	RESISTOR 1/4W 1% 12.4 Kohm	MR25	CONSTANTA	R80, 83
59	11021276	2	RESISTOR 1/4W 1% 127 Kohm	MR25	CONSTANTA	R87, 275
60	11021305	1	RESISTOR 1/4W 1% 13 Kohm	MR25	CONSTANTA	R234
61	11021336	1	RESISTOR 1/4W 1% 133 Kohm	MR25	CONSTANTA	R150
62	11021374	1	RESISTOR 1/4W 1% 1.37 Kohm	MR25	CONSTANTA	R200
63	11021375	1	RESISTOR 1/4W 1% 13.7 Kohm	MR25	CONSTANTA	R214
64	11021376	1	RESISTOR 1/4W 1% 137 Kohm	MR25	CONSTANTA	R191

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Tecnologia

TITULO:

Cartão Analógico

MR27B

CÓDIGO DO DOCUMENTO

R5002802LJ

PÁGINA

2/6

PROJETO: 13

DESENHO: R20509 23-11-87

ENGE :

R H E D E T E C N O L O G I A S . A .

21/11/87

S P M

R5002B02.DBF (CARTAO ANALOGICO MR27B)

Pag : 3

Item	Codigo	Qtd	Descricao do componente				Ref.Comerc.	Fabricante	Referencia no Circuito	
65	11021406	1	RESISTOR	1/4W	1%	140	Kohm	MR25	CONSTANTA	R108
66	11021475	1	RESISTOR	1/4W	1%	14.7	Kohm	MR25	CONSTANTA	R189
67	11021545	1	RESISTOR	1/4W	1%	15.4	Kohm	MR25	CONSTANTA	R146
68	11021585	2	RESISTOR	1/4W	1%	15.8	Kohm	MR25	CONSTANTA	R62,194
69	11021625	2	RESISTOR	1/4W	1%	16.2	Kohm	MR25	CONSTANTA	R147,233
70	11021744	1	RESISTOR	1/4W	1%	1.74	Kohm	MR25	CONSTANTA	R198
71	11021826	1	RESISTOR	1/4W	1%	182	Kohm	MR25	CONSTANTA	R54
72	11021915	1	RESISTOR	1/4W	1%	19.1	Kohm	MR25	CONSTANTA	R88
73	11022003	1	RESISTOR	1/4W	1%	200	ohm	MR25	CONSTANTA	R239
74	11022005	2	RESISTOR	1/4W	1%	20	Kohm	MR25	CONSTANTA	R269,270
75	11022006	1	RESISTOR	1/4W	1%	200	Kohm	MR25	CONSTANTA	R86
76	11022054	1	RESISTOR	1/4W	1%	2.05	Kohm	MR25	CONSTANTA	R187
77	11022214	4	RESISTOR	1/4W	1%	2.21	Kohm	MR25	CONSTANTA	R129,130,227,232
78	11022215	3	RESISTOR	1/4W	1%	22.1	Kohm	MR25	CONSTANTA	R121,136,138
79	11022554	1	RESISTOR	1/4W	1%	2.55	Kohm	MR25	CONSTANTA	R105
80	11022555	1	RESISTOR	1/4W	1%	25.5	Kohm	MR25	CONSTANTA	R176
81	11022614	1	RESISTOR	1/4W	1%	2.61	Kohm	MR25	CONSTANTA	R140
82	11022675	1	RESISTOR	1/4W	1%	26.7	Kohm	MR25	CONSTANTA	R131
83	11023094	1	RESISTOR	1/4W	1%	3.09	Kohm	MR25	CONSTANTA	R104
84	11023095	2	RESISTOR	1/4W	1%	30.9	Kohm	MR25	CONSTANTA	R64,144
85	11023245	2	RESISTOR	1/4W	1%	32.4	Kohm	MR25	CONSTANTA	R145,177
86	11023325	1	RESISTOR	1/4W	1%	33.2	Kohm	MR25	CONSTANTA	R135
87	11023573	1	RESISTOR	1/4W	1%	357	ohm	MR25	CONSTANTA	R225
88	11023574	1	RESISTOR	1/4W	1%	3.57	Kohm	MR25	CONSTANTA	R67
89	11023575	4	RESISTOR	1/4W	1%	35.7	Kohm	MR25	CONSTANTA	R173-175,179
90	11023924	2	RESISTOR	1/4W	1%	3.92	Kohm	MR25	CONSTANTA	R96,98
91	11023925	3	RESISTOR	1/4W	1%	39.2	Kohm	MR25	CONSTANTA	R82,139,221
92	11024325	1	RESISTOR	1/4W	1%	43.2	Kohm	MR25	CONSTANTA	R196
93	11024535	1	RESISTOR	1/4W	1%	45.3	Kohm	MR25	CONSTANTA	R235
94	11024754	6	RESISTOR	1/4W	1%	4.75	Kohm	MR25	CONSTANTA	R55,66,78,77,106,133
95	11024755	2	RESISTOR	1/4W	1%	47.5	Kohm	MR25	CONSTANTA	R58,274
96	11025115	3	RESISTOR	1/4W	1%	51.1	Kohm	MR25	CONSTANTA	R120,178,186

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Tecnologia

Projeto: 13

Desenho: Polson 23-11-87

Ene:

Codigo do Documento

Pagina

Cartão Analógico

MR27B

R5002B02.DBF

3/6

DESCRIÇÃO

DATA

RESP.

R H E D E T E C N O L O G I A S . A .

21/11/87

S P M

R5002802.DBF (CARTAO ANALOGICO MR27B)

Pag : 4

Itm	Codigo	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
97	11025364	1	RESISTOR 1/4W 1% 5.36 Kohm	MR25	CONSTANTA	R229
98	11025494	1	RESISTOR 1/4W 1% 5.49 Kohm	MR25	CONSTANTA	R163
99	11025624	2	RESISTOR 1/4W 1% 5.62 Kohm	MR25	CONSTANTA	R68,216
100	11026043	3	RESISTOR 1/4W 1% 604 ohm	MR25	CONSTANTA	R217,223,273
101	11026045	2	RESISTOR 1/4W 1% 60.4 Kohm	MR25	CONSTANTA	R89,197
102	11026194	1	RESISTOR 1/4W 1% 6.19 Kohm	MR25	CONSTANTA	R60
103	11026195	1	RESISTOR 1/4W 1% 61.9 Kohm	MR25	CONSTANTA	R271
104	11026654	1	RESISTOR 1/4W 1% 6.65 Kohm	MR25	CONSTANTA	R268
105	11026814	5	RESISTOR 1/4W 1% 6.81 Kohm	MR25	CONSTANTA	R65,49,70,125,228
106	11026983	1	RESISTOR 1/4W 1% 698 ohm	MR25	CONSTANTA	R85
107	11027324	1	RESISTOR 1/4W 1% 7.32 Kohm	MR25	CONSTANTA	R211
108	11027683	3	RESISTOR 1/4W 1% 768 ohm	MR25	CONSTANTA	R57,61,162
109	11027685	1	RESISTOR 1/4W 1% 76.8 Kohm	MR25	CONSTANTA	R201
110	11027874	1	RESISTOR 1/4W 1% 7.87 Kohm	MR25	CONSTANTA	R231
111	11028664	3	RESISTOR 1/4W 1% 8.66 Kohm	MR25	CONSTANTA	R209,210,272
112	11029093	1	RESISTOR 1/4W 1% 909 ohm	MR25	CONSTANTA	R192
113	11029095	1	RESISTOR 1/4W 1% 90.9 Kohm	MR25	CONSTANTA	R81
114	11029535	1	RESISTOR 1/4W 1% 95.3 Kohm	MR25	CONSTANTA	R151
115	11029764	1	RESISTOR 1/4W 1% 9.76 Kohm	MR25	CONSTANTA	R199
116	11051000	1	RESISTOR 2W 10% 0.1 ohm	CW-2C-1	DALE	R76
117	12001108	1	CAP ELETROL 10V 1000uF	85049	ICOTRON	C65
118	12001227	1	CAP ELETROL 10V 220uF	85049	ICOTRON	C59
119	12002226	2	CAP ELETROL 25V 22uF	85049	ICOTRON	C103,Cx
120	12002477	3	CAP ELETROL 25V 470uF	85049	ICOTRON	C77,79,81
121	12023106	1	CAP ELETROL 25V 10uF	85200	ICOTRON	C93
122	12030108	1	CAP ELETROL 50V 1000uF	85049	ICOTRON	C22
123	12030476	1	CAP ELETROL 50V 47uF	85049	ICOTRON	C33
124	12106105	1	CAP TANTALO 35V 20% 1uF	8900	ICOTRON	C45
125	12107225	1	CAP TANTALO 20V 20% 2.2uF	8900	ICOTRON	C36
126	12108335	4	CAP TANTALO 15V 20% 3.3uF	8900	ICOTRON	C29,46,60,121
127	12204103	4	CAP CERAMICO 10nF	GSR 606-FA	THOMSON	C34,44,54,55
128	12215104	7	CAP CERAMICO 25V+80% 100nF	GF0-B609FA	THOMSON	C56,66,78,80,82,104,114

R H E D E

Tecnologia

Cartão Analógico
MR27B

CÓDIGO DO DOCUMENTO

R5002802.DBF

Projeto: 13

Desenho: 706504 25-11-87

Emissão:

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PÁGINA

4/6

Itm	Codigo	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
129	12215104	2	CAP CERAMICO 25V+80% 100nF	GF0-B609FA	THOMSON	C117,118
130	12215223	4	CAP CERAMICO 25V+80% 22nF	GF0-B606FA	THOMSON	C25-27,200
131	12216821	1	CAP CERAMICO 100V 10% 820pF	GE8605FA	THOMSON	C32
132	12252222	1	CAP CER XSP 100V 10% 2200pF	PE8606FAAC4	THOMSON	C100
133	12305104	1	CAP POLIESTER 100V 10% 100nF	5450	ICOTRON	C57
134	12305105	1	CAP POLIESTER 100V 10% 10F	5450	ICOTRON	C99
135	12305473	2	CAP POLIESTER 250V 10% 47nF	5450	ICOTRON	C97,98
136	12403332	15	CAP POLIESTIRENO 1% 3300pF	605	MIAL	C37-39,67-70,83,84,87-92
137	14001103	2	FUSIVEL RAPIDO 20MM 100mA	20AGF	FUSI-BRAS	F2,F3
138	14001253	1	FUSIVEL RAPIDO 20MM 250mA	20AGF	FUSI-BRAS	F1
139	15000010	1	RELE 24VCC	MC2RC3	METALTFX	RE1e
140	20001061	7	DIODO ZENER 5% 5V1 20MA	1N751A	MOTOROLA	D30-33,36,39,40
141	20001081	2	DIODO ZENER 5% 6V2 20MA	1N753A	MOTOROLA	D28,R59
142	20002002	14	DIODO DE SINAL	1N4148	MOTOROLA	D11-20,23,24,27,29
143	20003002	4	DIODO DE RETIFICACAO 100V	1N4002	MOTOROLA	D4-7
144	20004001	2	DIODO DE RETIFICACAO	1N4942	UNITRODE	D25,26
145	21000080	9	LED RETANGULAR VERMELHO	CQV36-3	ICOTRON	ALM-TST
146	21000150	1	DISPLAY CRISTAL LIQUIDO 2x16	LM-14251	SHARP	Display
147	22000101	3	TRANSISTOR NPN	BC547A	IBRAPE	Q3,7,11
148	22000201	3	TRANSISTOR PNP	BC557A	IBRAPE	Q8-10
149	22001001	1	TRANSISTOR NPN	MJE3055T	MOTOROLA	Q6
150	22001201	2	TRANSISTOR FET CANAL N	2N4856	NATIONAL	Q4,5
151	22001301	1	TRANSISTOR HIBRIDO POTENCIA	PIC601	UNITRODE	X1
152	24010014	1	6 INVERSORES SCHMITT TRIGGERS	SN74LS14N	TEXAS	U11
153	25004053	2	3 MUX=DEMUX 2 pra 1	CD4053BE	RCA	U33,35
154	26000030	4	AMPLIFICADOR OPERACIONAL	MC4558CP1	MOTOROLA	U34,36,39,41
155	26000030	12	AMPLIFICADOR OPERACIONAL	MC4558CP1	MOTOROLA	U9,10,14,18,23-26,29-32
156	26000180	1	FILTRO	MF4CN-50	NATIONAL	U38
157	26000420	1	ACOPLADOR OTICO	TIL 111	TEXAS	U42
158	26000560	1	AMPLIFICADOR OPERACIONAL	LF356N	NATIONAL	U27
159	26000570	1	REGULADOR LARGURA DE PULSO	SG3524N	SILIC.GEN.	U17
160	39005302	1	ADESIVO PAINEL MR27B	M47,C35-40	TERMOPRINT	Painel frontal

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Tecnologia

PROJ. Nº: 13

DESENHO: Robson 23-11-87

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CÓDIGO DO DOCUMENTO

TÍTULO:
Cartão Analógico
MR27B

R5002802.DBF

PÁGINA

5/6

DESCRIÇÃO

DATA

RESP.

Pag : 6

REV	DESCRIÇÃO	DATA	RESP.
6			
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PROV. NO: 13

DESIGN NO: Robinson 23-11-87

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Cart 50 Analogica
MR 27 B

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6/6

RHEDE TECNOLOGIA S.A.

05/03/88

S P M

R5002803.DBF (CARTAO ANALOGICO MR27B)

Pag 1 1

Itm	Codigo	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
1	01000302	2	DIP SWITCH 4 POLOS	J-5 8747-04	SMK	SE,SF
2	01002001	1	CHAVE 1 POLO REV. 1 MOM	15107M1FT1F	MAR-GIRTUS	CH4
3	01002101	3	CHAVE 1 POLO REV.	CR5322PT3	MAR-GIRTUS	CH1-3
4	03000316	1	CONECTOR PARA CABO PLANO 16p	1-880023-6	AMP	Cabo do display
5	03000401	1	MINI SHUNT DOURADO	880584-5	AMP	A
6	03001201	2	PENTE SIMPLES/01 180. E	880150-1	AMP	0V
7	03001203	1	PENTE SIMPLES/03 180. E	880150-3	AMP	A
8	03001403	1	PENTE DUPL0/08 180. E	0-880152-4	AMP	J8
9	03001440	1	PENTE DUPL0/40 180. E	2-880152-0	AMP	J2
10	03003503	1	PENTE TRAVA SIMPLES/3 180. Au	A5045-03A30	MOLEX	J10
11	03003804	3	TOMADA 4 POLOS BL 4 PA	5528.6	CONEXEL	TB1-3
12	03004004	3	PENTE 4 POLOS BL 4 PA horiz.	1124.6	CONEXEL	T01-3
13	03004215	1	CONECTOR FEMEA-15 PINOS	2,54MBC15	CELIS	Cabo do display
14	03004301	14	TERMINAL PARA 030042..	TERMINAL FC	CELIS	Cabo do display
15	03004814	1	PENTE SIMPLES/14 180. E	2,54MS14	CELIS	Cartao display
16	04001402	3	PORTA FUSIVEL 20 mm com base	505.002	ION	F1,F2,F3
17	06000306	8	PARAFUSO M3 PAN PHIL N.1 6mm	M3x6	LIPOS	Display, Dissipador
18	06000312	4	PARAFUSO M3 PAN PHIL N.1 12mm	M3x12	LIPOS	
19	06000401	4	PORCA M3	Preta	INDUPAR	Display
20	06000501	4	ARRUELA LISA M3	Preta	INDUPAR	Espacadores
21	06000601	4	ARRUELA PRESSAO M3	Preta	INDUPAR	Espacadores
22	06001001	2	PARAFUSO RECARTEILHADO M3	9199025	TAUNUS	Painel frontal
23	06001101	2	BUCHA M3	9199025	TAUNUS	Painel frontal
24	07000101	6	ESP.TERMOENCOLHIVEL 2.4	1cm LVR 24	HELLERMAN	X1(dissipador)
25	07000103	10	ESP.TERMOENCOLHIVEL 4.8	1cm LVR 48	HELLERMAN	Painel frontal
26	07002101	18	SPIRAL TUBE 1/8 POL	1cm	HELLERMAN	Fios painel frontal
27	08221010	170	CABO FLEX 22AWG PRE	1cm 11.402	PIRELLI	CH1-4,X1
28	08280168	50	CABO PLANO 28AWG 16V CIN	1cm 0-0499116-2	AMP	Cabo do display
29	09000202	1	DISSIPADOR MR27		RHEDE	X1
30	09000350	4	ESPACADOR M3 50mm		RHEDE	Suporte do cartao digital
31	10000101	2	TRANSF LINHA PRIVAI PERMALLOY	T-19B	YAMAZAKI	T2,T4
32	10000201	1	TRANSF LINHA COMUT	T-288P	YAMAZAKI	T3

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Tecnologia

PROJ.Nº: 13

DESENHO: Robson, 25.11-87

ENC: 1

CÓDIGO DO DOCUMENTO

PÁGINA

Cartão Analógico
MR27B

R50002803.1

1/6

REV	DATA	RESP.	TÍTULO
1	21-11-87	Robson	Cartão Analógico
2			
3			
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8			
9			
10			

RHEDE TECNOLOGIA S.A.

05/03/88

S P M

R5002803.DBF (CARTAO ANALOGICO MR27B)

Pag : 2

Itm	Codigo	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
33	10000501	1	TRANSF DRIVER		RHEDE	T1
34	10000601	2	BOBINA RF 1,5 uH		RHEDE	L1,L2
35	11011003	1	RESISTOR 1/4W 5% 100 ohm	CR25	CONSTANTA	R204
36	11011006	1	RESISTOR 1/4W 5% 100 Kohm	CR25	CONSTANTA	R202
37	11011206	1	RESISTOR 1/4W 5% 120 Kohm	CR25	CONSTANTA	R226
38	11012205	1	RESISTOR 1/4W 5% 22 Kohm	CR25	CONSTANTA	R203
39	11012704	1	RESISTOR 1/4W 5% 2.7 Kohm	CR25	CONSTANTA	R204
40	11013904	2	RESISTOR 1/4W 5% 3.9 Kohm	CR25	CONSTANTA	R212,213
41	11015603	10	RESISTOR 1/4W 5% 560 ohm	CR25	CONSTANTA	R102,259-267
42	11017504	2	RESISTOR 1/4W 5% 7.5 Kohm	CR25	CONSTANTA	R95,97
43	11020000	1	RESISTOR 1/4W 1% -----	MR25	CONSTANTA	R56 = SET
44	11021003	1	RESISTOR 1/4W 1% 100 ohm	MR25	CONSTANTA	R170
45	11021004	3	RESISTOR 1/4W 1% 1 Kohm	MR25	CONSTANTA	R167,230,276
46	11021005	7	RESISTOR 1/4W 1% 10 Kohm	MR25	CONSTANTA	R168,169,215,218-220,222
47	11021005	2	RESISTOR 1/4W 1% 10 Kohm	MR25	CONSTANTA	R237,238
48	11021005	6	RESISTOR 1/4W 1% 10 Kohm	MR25	CONSTANTA	R123,124,127,128,132,137
49	11021005	7	RESISTOR 1/4W 1% 10 Kohm	MR25	CONSTANTA	R63,101,103,105,107-109
50	11021006	2	RESISTOR 1/4W 1% 100 Kohm	MR25	CONSTANTA	R134,205
51	11021024	1	RESISTOR 1/4W 1% 1.02 Kohm	MR25	CONSTANTA	R193
52	11021055	1	RESISTOR 1/4W 1% 10.5 Kohm	MR25	CONSTANTA	R149
53	11021075	1	RESISTOR 1/4W 1% 10.7 Kohm	MR25	CONSTANTA	R190
54	11021103	1	RESISTOR 1/4W 1% 110 ohm	MR25	CONSTANTA	R75
55	11021104	1	RESISTOR 1/4W 1% 1.1 Kohm	MR25	CONSTANTA	R122
56	11021216	2	RESISTOR 1/4W 1% 121 Kohm	MR25	CONSTANTA	R195,236
57	11021245	2	RESISTOR 1/4W 1% 12.4 Kohm	MR25	CONSTANTA	R80,83
58	11021276	2	RESISTOR 1/4W 1% 127 Kohm	MR25	CONSTANTA	R87,275
59	11021305	1	RESISTOR 1/4W 1% 13 Kohm	MR25	CONSTANTA	R234
60	11021336	1	RESISTOR 1/4W 1% 133 Kohm	MR25	CONSTANTA	R150
61	11021374	1	RESISTOR 1/4W 1% 1.37 Kohm	MR25	CONSTANTA	R200
62	11021375	1	RESISTOR 1/4W 1% 13.7 Kohm	MR25	CONSTANTA	R214
63	11021376	1	RESISTOR 1/4W 1% 137 Kohm	MR25	CONSTANTA	R191
64	11021406	1	RESISTOR 1/4W 1% 140 Kohm	MR25	CONSTANTA	R188

000087

RHEDE

Tecnologia

PROJETS: 13

DESENHO: Robson 23.11-87

EVAL :

CÓDIGO DO DOCUMENTO

TÍTULO
Cartão Analógico
MR27B

PÁGINA

2/6

RHEDE TECNOLOGIA S.A.

05/03/88

S P M

R5002803.DBF (CARTAO ANALOGICO MR27B)

Pag : 3

Item	Codigo	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
65	11021475	1	RESISTOR 1/4W 1% 14.7 Kohm	MR25	CONSTANTA	R189
66	11021545	1	RESISTOR 1/4W 1% 15.4 Kohm	MR25	CONSTANTA	R146
67	11021585	2	RESISTOR 1/4W 1% 15.8 Kohm	MR25	CONSTANTA	R62,194
68	11021625	2	RESISTOR 1/4W 1% 16.2 Kohm	MR25	CONSTANTA	R147,233
69	11021744	1	RESISTOR 1/4W 1% 1.74 Kohm	MR25	CONSTANTA	R198
70	11021826	1	RESISTOR 1/4W 1% 182 Kohm	MR25	CONSTANTA	R54
71	11021915	1	RESISTOR 1/4W 1% 19.1 Kohm	MR25	CONSTANTA	R88
72	11022003	1	RESISTOR 1/4W 1% 200 ohm	MR25	CONSTANTA	R239
73	11022005	2	RESISTOR 1/4W 1% 20 Kohm	MR25	CONSTANTA	R269,270
74	11022006	1	RESISTOR 1/4W 1% 200 Kohm	MR25	CONSTANTA	R86
75	11022054	1	RESISTOR 1/4W 1% 2.05 Kohm	MR25	CONSTANTA	R187
76	11022214	4	RESISTOR 1/4W 1% 2.21 Kohm	MR25	CONSTANTA	R129,130,227,232
77	11022215	3	RESISTOR 1/4W 1% 22.1 Kohm	MR25	CONSTANTA	R121,136,138
78	11022554	1	RESISTOR 1/4W 1% 2.55 Kohm	MR25	CONSTANTA	R185
79	11022555	1	RESISTOR 1/4W 1% 25.5 Kohm	MR25	CONSTANTA	R176
80	11022614	1	RESISTOR 1/4W 1% 2.61 Kohm	MR25	CONSTANTA	R148
81	11022675	1	RESISTOR 1/4W 1% 26.7 Kohm	MR25	CONSTANTA	R131
82	11023094	1	RESISTOR 1/4W 1% 3.09 Kohm	MR25	CONSTANTA	R104
83	11023095	2	RESISTOR 1/4W 1% 30.9 Kohm	MR25	CONSTANTA	R64,144
84	11023245	2	RESISTOR 1/4W 1% 32.4 Kohm	MR25	CONSTANTA	R145,177
85	11023325	1	RESISTOR 1/4W 1% 33.2 Kohm	MR25	CONSTANTA	R135
86	11023573	1	RESISTOR 1/4W 1% 357 ohm	MR25	CONSTANTA	R225
87	11023574	1	RESISTOR 1/4W 1% 3.57 Kohm	MR25	CONSTANTA	R67
88	11023575	4	RESISTOR 1/4W 1% 35.7 Kohm	MR25	CONSTANTA	R173-175,179
89	11023924	2	RESISTOR 1/4W 1% 3.92 Kohm	MR25	CONSTANTA	R96,98
90	11023925	3	RESISTOR 1/4W 1% 39.2 Kohm	MR25	CONSTANTA	R82,139,221
91	11024325	1	RESISTOR 1/4W 1% 43.2 Kohm	MR25	CONSTANTA	R196
92	11024535	1	RESISTOR 1/4W 1% 45.3 Kohm	MR25	CONSTANTA	R235
93	11024754	6	RESISTOR 1/4W 1% 4.75 Kohm	MR25	CONSTANTA	R55,66,78,79,106,133
94	11024755	2	RESISTOR 1/4W 1% 47.5 Kohm	MR25	CONSTANTA	R58,274
95	11025115	3	RESISTOR 1/4W 1% 51.1 Kohm	MR25	CONSTANTA	R120,178,186
96	11025364	1	RESISTOR 1/4W 1% 5.36 Kohm	MR25	CONSTANTA	R229

000087

RHEDE

Tecnologia

PROJETO: 13

DESENHO: T. P. 2.5-11-87

ENOS :

CÓDIGO DO DOCUMENTO

PÁGINA

Cartão Analógico
MR27B

R5002803.D

3/6

DESCRIÇÃO

DATA

RESP.

TÍTULO

R H F D E T E C N O L O G I A S . A .

05/03/88

S P M

R3002803.DBF (CARTAO ANALOGICO MR278)

Pag : 4

Item	Codigo	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
97	11025494	1	RESISTOR 1/4W 1% 5.49 Kohm	MR25	CONSTANTIA	R163
98	11025624	2	RESISTOR 1/4W 1% 5.62 Kohm	MR25	CONSTANTIA	R68,216
99	11026043	3	RESISTOR 1/4W 1% 604 ohm	MR25	CONSTANTIA	R217,223,273
100	11026045	2	RESISTOR 1/4W 1% 60.4 Kohm	MR25	CONSTANTIA	R89,197
101	11026194	1	RESISTOR 1/4W 1% 6.19 Kohm	MR25	CONSTANTIA	R60
102	11026195	1	RESISTOR 1/4W 1% 61.9 Kohm	MR25	CONSTANTIA	R271
103	11026654	1	RESISTOR 1/4W 1% 6.65 Kohm	MR25	CONSTANTIA	R268
104	11026814	5	RESISTOR 1/4W 1% 6.81 Kohm	MR25	CONSTANTIA	R65,69,70,125,228
105	11026983	1	RESISTOR 1/4W 1% 698 ohm	MR25	CONSTANTIA	R85
106	11027324	1	RESISTOR 1/4W 1% 7.32 Kohm	MR25	CONSTANTIA	R211
107	11027683	3	RESISTOR 1/4W 1% 768 ohm	MR25	CONSTANTIA	R57,61,162
108	11027685	1	RESISTOR 1/4W 1% 76.8 Kohm	MR25	CONSTANTIA	R201
109	11027874	1	RESISTOR 1/4W 1% 7.87 Kohm	MR25	CONSTANTIA	R231
110	11028664	3	RESISTOR 1/4W 1% 8.66 Kohm	MR25	CONSTANTIA	R209,210,272
111	11029093	1	RESISTOR 1/4W 1% 909 ohm	MR25	CONSTANTIA	R192
112	11029095	1	RESISTOR 1/4W 1% 90.9 Kohm	MR25	CONSTANTIA	R81
113	11029535	1	RESISTOR 1/4W 1% 95.3 Kohm	MR25	CONSTANTIA	R131
114	11029764	1	RESISTOR 1/4W 1% 9.76 Kohm	MR25	CONSTANTIA	R199
115	11051000	1	RESISTOR 2W 10% 0.1 ohm	CW-2C-1	DALE	R76
116	12001108	1	CAP ELETROL 10V 1000uF	85049	ICOTRON	C65
117	12001227	1	CAP ELETROL 10V 220uF	85049	ICOTRON	C59
118	12002226	3	CAP ELETROL 25V 22uF	85049	ICOTRON	C35,48,103
119	12002477	3	CAP ELETROL 25V 470uF	85049	ICOTRON	C77,79,81
120	12023106	1	CAP ELETROL 25V 10uF	85200	ICOTRON	C93
121	12030108	1	CAP ELETROL 50V 1000uF	85049	ICOTRON	C22
122	12030476	1	CAP ELETROL 50V 47uF	85049	ICOTRON	C33
123	12106105	1	CAP TANTALO 35V 20% 1uF	8900	ICOTRON	C45
124	12107225	1	CAP TANTALO 20V 20% 2.2uF	8900	ICOTRON	C36
125	12108335	4	CAP TANTALO 15V 20% 3.3uF	8900	ICOTRON	C29,46,60,121
126	12204103	4	CAP CERAMICO 10nF	BSR 606-FA	THOMSON	C34,44,54,55
127	12215104	3	CAP CERAMICO 25V+80% 100nF	GFO-B609FA	THOMSON	C24,117,118
128	12215104	7	CAP CERAMICO 25V+80% 100nF	GFO-B609FA	THOMSON	C56,66,78,80,82,104,114

000087

RHEDE

Tecnologia

Projeto: 13

Desenho: T20507 23-11-87

Eng : :

Codigo do Documento

TITULO
Cartão Analógico
MR278

R300012803L

Página

4/6

REV	1	2	3	4	5	6	7	8
DESCRICO								
DATA								
RESP.								

R H E D E T E C N O L O G I A S . A .

05/03/88

S P M

R5002803.DBF (CARTAO ANALOGICO MR27B)

Pag : 5

Itm	Codigo	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
129	12215223	4	CAP CERAMICO 25V 10% 22nF	BFO-D606FA	THOMSON	C25-27,43
130	12216821	2	CAP CERAMICO 100V 10% 820pF	DEB605FA	THOMSON	C32,58
131	12252222	1	CAP CER X5P 100V 10% 2200pF	PEN606FAAC4	THOMSON	C100
132	12305104	1	CAP POLIESTER 100V 10% 100nF	5450	ICOTRON	C57
133	12305105	1	CAP POLIESTER 100V 10% 1uF	5450	ICOTRON	C99
134	12305473	2	CAP POLIESTER 250V 10% 47nF	5450	ICOTRON	C97,98
135	12403332	15	CAP POLIESTIRENO 1% 3300pF	605	MIAL	C37-39,67-70,83,84,87-92
136	14001103	2	FUSIVEL RAPIDO 20MM 100mA	20AGF	FUSI-BRAS	F2,F3
137	14001253	1	FUSIVEL RAPIDO 20MM 250mA	20AGF	FUSI-BRAS	F1
138	15000010	1	RELE 24VCC	MCH2BC3	METALTEX	Rele
139	20001061	7	DIODO ZENER 5Z 5V1 20MA	1N751A	MOTOROLA	D30-33,36,39,40
140	20001081	2	DIODO ZENER 5Z 5V2 20MA	1N753A	MOTOROLA	D12,28
141	20002002	14	DIODO DE SINAL	1N4148	MOTOROLA	D10,11,13-20,23,24,27,29
142	20003002	4	DIODO DE RETIFICACAO 100V	1N4002	MOTOROLA	D4-7
143	20004001	7	DIODO DE RETIFICACAO	1N4942	UNITRODE	D25,26
144	21000030	7	LED RETANGULAR VERMELHO	QAV36-B	ICOTRON	ALM-TST
145	21000150	1	DISPLAY CRISTAL LIQUIDO 2x16	LM-16251	SHARP	Display
146	22000101	3	TRANSISTOR NPN	BC547A	IBRAPE	Q3,7,11
147	22000201	3	TRANSISTOR PNP	BC557A	IBRAPE	Q8-10
148	22001001	1	TRANSISTOR NPN	MJE3055T	MOTOROLA	Q6
149	22001201	2	TRANSISTOR FET CANAL N	2N4856	NATIONAL	Q4,5
150	22001301	1	TRANSISTOR HIBRIDO POTENCIA	PTC601	UNITRODE	X1
151	24010014	1	6 INVERSORES SCHMITT TRIGGERS	SN74LS14N	TEXAS	U11
152	25004053	2	3 MUX-DEMUX 2 pra 1	CD4053BE	RCA	U33,35
153	26000030	12	AMPLIFICADOR OPERACIONAL	MC4558CP1	MOTOROLA	U9,10,14,18,23-26,29-32
154	26000030	4	AMPLIFICADOR OPERACIONAL	MC4558CP1	MOTOROLA	U34,36,39,41
155	26000180	1	FILTRO	MF4CN-50	NATIONAL	U38
156	26000420	1	ACOPLADOR OTICO	TIL 111	TEXAS	U42
157	26000560	1	AMPLIFICADOR OPERACIONAL	LF356N	NATIONAL	U27
158	26000570	1	REGULADOR LARGURA DE PULSO	SO3524N	SILIC.GEN.	U17
159	39005302	1	ADESIVO PAINEL MR27B	M47,C35-40	TERMOPRINT	Painel frontal
160	48000501	1	PAINEL MR27	M24	RHEDE	Painel frontal

000087

RHEDE

Tecnologia

Projeto: 13

Desenho: Pbs01 23-11-87

Escala: 1

Codigo do documento

Cartão Analógico
MR27B

R5002803.D

5/6

Página

REVISÃO

DATA

RESP.

R H E D E T E C N O L O G I A S . A .

05/03/88

S P M

R5002803.DBF (CARTÃO ANALÓGICO MR27B)

Pag : 6

Itm	Código	Qtd	Descrição do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
161	50001503	1	PLACA ANALOGICA MR27	Proj. 13	CARTON	Circuito Impresso
162	99990001	0	Soldar Jumper nas referencias			JW1,R100

8				
7				
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2				
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REV				
	DESCRIÇÃO		DATA	RESP.

RHEDF

Tecnologia

TÍTULO

Cartão Analógico
MR27B

PROJETO: 13

DESENHO: Robson, 23-11-87

EM 9

CÓDIGO DO DOCUMENTO

R5002803

PÁGINA

6/6

000087

RHEDE TECNOLOGIA S.A.

05/03/88

G P M

R5002902.DRF (CARTÃO DIGITAL MR22)

Pag : 1.

1 ^o	Código	Qtd	Descrição do componente	Ref. Comerc.	Fabricante	Referência no Circuito
1	01000302	1	DIP SWITCH 4 POLOS	J-S B747-04	SMK	SD
2	01001201	3	PIANO SWITCH 8 POLOS	DYS-8	ALCO	SA, SB, SC
3	03000104	1	CONECTOR FEMEA-D-90.	DK1-25-S-	KONO	J4
4	03001201	2	PENTE SIMPLES/01 180. E	880150-1	AMP	0V
5	03001416	1	PENTE DUPL0/16 180. E	0-880152-0	AMP	J5
6	03001420	1	PENTE DUPL0/20 180. E	1-880152-0	AMP	J6
7	03001426	1	PENTE DUPL0/26 180. E	1-880152-3	AMP	J3
8	03001440	1	PENTE DUPL0/40 180. E	2-880152-0	AMP	J2
9	04000901	2	SOQUETE 28 PINOS SOLDA	SPT14S	CEI 15	U5, 41
10	06000310	2	PARAFUSO M3 PAN PHIL N.1 10mm	M3x10	LIPOS	J4
11	06000401	2	PORCA M3	Preta	INDUPAR	J4
12	06000501	2	ARRUELA LISA M3	Preta	INDUPAR	J4
13	11011003	2	RESISTOR 1/4W 5% 100 ohm	CR25	CONSTANTA	R11, R12
14	11011005	13	RESISTOR 1/4W 5% 10 Kohm	CR25	CONSTANTA	R2-10, 13, 27, 28, 29
15	11011006	1	RESISTOR 1/4W 5% 100 Kohm	CR25	CONSTANTA	R33
16	11011306	1	RESISTOR 1/4W 5% 130 Kohm	CR25	CONSTANTA	R24
17	11012204	4	RESISTOR 1/4W 5% 2.2 Kohm	CR25	CONSTANTA	R16, 25, 26, 30
18	11013606	1	RESISTOR 1/4W 5% 360 Kohm	CR25	CONSTANTA	R32
19	11016805	1	RESISTOR 1/4W 5% 68 Kohm	CR25	CONSTANTA	R31
20	11020000	1	RESISTOR 1/4W 1% -	MR25	CONSTANTA	R19 = SET
21	11021005	2	RESISTOR 1/4W 1% 10 Kohm	MR25	CONSTANTA	R20, 23
22	11021105	1	RESISTOR 1/4W 1% 11 Kohm	MR25	CONSTANTA	R21
23	11022155	1	RESISTOR 1/4W 1% 21.5 Kohm	MR25	CONSTANTA	R18
24	11041005	4	RESISTOR POTOTA 1/8W 5% 10K	KPL8S103J	ROHM	RN1-RN4
25	12029226	1	CAP ELETROL A 16V 22uF	B0000	ICOTRON	C71
26	12204103	1	CAP CERAMICO 10nF	G3R 606-FA	THOMSON	C4
27	12214472	1	CAP CERAMICO 500V 20% 4700pF	GLX608FA	THOMSON	C46
28	12215104	22	CAP CERAMICO 25V 100% 100nF	DF0 B609FA	THOMSON	C47-49, 51-55, 68-70
29	12215104	29	CAP CERAMICO 25V 100% 100nF	DF0 D609FA	THOMSON	C1-3, 6-10, 16, 22, 23, 28-45
30	12216331	8	CAP CERAMICO 100V 10% 330pF	DEB604FA	THOMSON	C18-21, 24-27
31	12216821	6	CAP CERAMICO 100V 10% 820pF	DEB605FA	THOMSON	C11-15, 17
32	12251680	1	CAP CER NPO 100V 10% 68pF	PEC607FAAC4	THOMSON	C5

0000087

8	RP 09-88	5-3-87	Proj. e
7	RP 06/88	12-2-88	Desenho
6	RP 06/88	29-08-87	Eng. e
5	RP 06/88	29-08-87	Eng. e
4	RP 06/88	29-08-87	Eng. e
3	RP 06/88	29-08-87	Eng. e
2	RP 06/88	29-08-87	Eng. e
1	RP 06/88	29-08-87	Eng. e
REV	DESCRICAÇÃO	DATA	RESP.
TÍTULO			
CARTÃO DIGITAL			
MR22			
CÓDIGO DO DOCUMENTO			
R 5002902			
PÁGINA			
11			

RHEDE TECNOLOGIA S.A.

05/03/88

S P M

R5002902.DBF (CARTÃO DIGITAL MR27)

Pag : 2

Itm	Codigo	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
33	12252101	1	CAP CER X5P 100V 10% 100pF	PEB604FAAC4	THOMSON	C50
34	12252102	1	CAP CER X5P 100V 10% 1000pF	PEB605FAAC4	THOMSON	C67
35	13010010	1	OSCILADOR 23961.6 KHz 100ppm	K1100AM	MOTOROLA	Y1
36	20001061	1	DIODO ZENER 5Z 5V1 20MA	1N751A	MOTOROLA	D4
37	20002002	1	DIODO DE SINAL	1N4148	MOTOROLA	D3
38	20003002	2	DIODO DE RETIFICACAO 100V	1N4002	MOTOROLA	D1,D2
39	22000101	1	TRANSISTOR NPN	BC547A	IBRAPE	Q1
40	24010000	5	4 NAND:2	SN74LS00N	TEXAS	U16,18,27,37,44
41	24010032	2	4 OR:2	SN74LS32N	TEXAS	U17,29
42	24010074	2	2 FLIP-FLOP D	SN74LS74AN	TEXAS	U43,46
43	24010139	2	2 DECOD. 2 pra 4	SN74LS139N	TEXAS	U20,35
44	24010164	3	SHIFT 8 BITS	SN74LS164N	TEXAS	U15,21,25
45	24010165	1	SHIFT 8 BITS	SN74LS165N	TEXAS	U45
46	24010174	1	6 FLIP-FLOP D	SN74LS174N	TEXAS	U6
47	24010245	2	8 BUS TRANSCEIVER 3state	SN74LS245N	TEXAS	U2,33
48	24010373	2	8 LATCHES D 3state	SN74LS373N	TEXAS	U7,36
49	24010393	2	2 CONTADOR:16	SN74LS393N	TEXAS	U14,19
50	24020010	1	3 NAND:3	SN74ALS10N	TEXAS	U38
51	24020074	2	2 FLIP-FLOP D	SN74ALS74N	TEXAS	U39,40
52	25004053	3	3 MUX-DEMUX 2 pra 1	CD4053BE	RCA	U13,22,23
53	26000010	2	LINE RECEIVER RS-232-C	MC1489L	MOTOROLA	U10,12
54	26000021	2	LINE DRIVER RS-232-C CMOS	DS14C88N	NATIONAL	U11,24
55	26000030	1	AMPLIFICADOR OPERACIONAL	MC4558CP1	MOTOROLA	U28
56	26000060	1	SAMPLE & HOLD	LF398N	NATIONAL	U26
57	26000400	1	TIMER	LM555CN	NATIONAL	U47
58	26000500	1	CONVERSOR A-D	AD7574JN	AN.DEVICES	U32
59	26000510	1	CONVERSOR D-A	NE5018N	SIGNETICS	U4
60	26000530	3	EXPANSOR DE I/O	B155-2	INTEL	U1,9,31
61	26000540	2	MICROPROCESSADOR	8031	INTEL	U8,42
62	26000631	1	MODULADOR 4800 BPS	TX 0631	RHEDE	U3
63	26000641	1	DEMODULADOR 4800 BPS	RX 0641	RHEDE	U34
64	50001402	1	PLACA DIGITAL MR27	Proj. 13	CARTON	Circuito Impresso

000087

RHEDETecnologia e
Desenvolvimento

Proj. nº :

Desenho :

Empr :

CÓDIGO DO DOCUMENTO

R 5002902

PÁGINA

2/

CARTÃO DIGITAL
MR27

TÍTULO

RHEDE TECNOLOGIA S.A.

28/01/89

S P M

R5003301.DBF (CARTAO FONTE MR27E-DC)

Pag : 1

Itm	Código	Qtd	Descricao do componente	Ref.Comerc.	Fabricante	Referencia no Circuito
1	03003904	1	PENTE 4 POLOS SL 4 PA vert.	1111.6	CONEXEL	J1
2	09001300	1	CINTA PLASTICA 3,6x158	T-30-R	HELLERMAN	fixacao L2
3	10000601	1	BOBINA RF 1,5 OH		RHEDE	L1
4	10000901	1	TRANSF DRIVER	586-7	YAMAZAKI	L2
5	11021005	8	RESISTOR 1/4W 1% 10 Kohm	MR25	CONSTANTA	R1,5,6,20-24
6	11021006	5	RESISTOR 1/4W 1% 100 Kohm	MR25	CONSTANTA	R11-14,17
7	11022004	1	RESISTOR 1/4W 1% 2 Kohm	MR25	CONSTANTA	R7
8	11022005	2	RESISTOR 1/4W 1% 20 Kohm	MR25	CONSTANTA	R4,19
9	11023164	1	RESISTOR 1/4W 1% 3.16 Kohm	MR25	CONSTANTA	R18
10	11023325	1	RESISTOR 1/4W 1% 33.2 Kohm	MR25	CONSTANTA	R3
11	11026044	3	RESISTOR 1/4W 1% 6.04 Kohm	MR25	CONSTANTA	R8-10
12	11027875	2	RESISTOR 1/4W 1% 78.7 Kohm	MR25	CONSTANTA	R15,16
13	12026105	2	CAP ELETROL A 100V 1uF	80000	ICOTRON	C1,5
14	12030476	1	CAP ELETROL 50V 47uF	85049	ICOTRON	C6
15	12031477	1	CAP ELETROL 100V 470uF	85049	ICOTRON	C2
16	12252102	1	CAP CER X5P 100V 10% 1000pF	PEB605FAAG4	THOMSON	C3
17	20001141	2	DIODO ZENER 5% 12V 20MA	1N759A	MOTOROLA	D1,2
18	20004001	1	DIODO DE RETIFICACAO	1N4942	UNITRODE	D3
19	22000201	2	TRANSISTOR PNP	BC557A	IBRAPE	Q1,2
20	22001601	2	TRANSISTOR NPN	TIP41C	TEXAS	Q3,4
21	26000070	1	COMPARADOR	LM393N	NATIONAL	U1
22	50006901	1	PLACA FONTE MR27E-DC	Proj. 39	GARTON	Circuito Impresso

000087

RHEDE

Tecnologia e
Desenvolvimento

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1

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REV
1 +Ct-tn em L2
2
3
4
5
6
7
8
DESCRÇÃO

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