



**National Semiconductor Corporation
Radiation Effects Laboratory
South Portland, Maine 04106**

ANALOG TOTAL DOSE RADIATION REPORT

Customer: Rad Qual

Part Type: RM117HRQMLV

Input Bias Circuit: 9784 HR

Dose Rate: 62.943 rad(Si)/sec

Test Program Used: RH00117HYC

Tester: S.Gorman

Wafer Run Number: EM03107M

Wafer Number: 12

Package Type: HT039003

Production Lot #: 102602D019

IPI #: N/A

Disposition: PASSES

Summary:

Passes Room Temp @: 100k

Part Out of Room Temp Spec @: N/A (no devices failed)

Functional Failed @: N/A (no devices failed functionally)

Parameters over Limit:

Review By: Mike Maher

Reviewed By QA: Mike Maher – December 03, 2003

Note:

These parts may be dose rate sensitive in a space environment and demonstrate enhanced low dose rate effect.

**Standard Test Flow Sheet For Rad Testing
Customer Special Attachment
Rad Hard Linear**

NSID# RM117HRQMLV

LOT# 102602D019

IPI# N/A

Test Program: RH00117HYC

Machine: LTX-01

Operator: D0841

Bias Board: 9784 HR

Start Time: 8:57 A.M

Finish Time: 10:41 A.M

Start Date: 23/Apr/2003

Finish Date:23/Apr/2003

QA: December 03, 2003

Control Units s/n: #1 #2

Duts : #3 #4 #5 #6 #7 #8

Location Step	Operation Mtd/Cond	Qty In	Qty Out	Var	Mech	Rej	FF
PASS	Pre - Rad Read/Rec. Tp1	6	6	0	0	0	0
	<i>Irradiation</i> <i>3k</i> <i>Level</i>	6	6	0	0	N/A	N/A
PASS	Post Rad Read/Rec. Tp2	6	6	0	0	0	0
	<i>Irradiation</i> <i>10k</i> <i>Level</i>	6	6	0	0	N/A	N/A
PASS	Post Rad Read/Rec. Tp3	6	6	0	0	0	0

**Standard Test Flow Sheet For Rad Testing
Customer Special Attachment
Rad Hard Linear**

NSID# RM117HRQMLV

LOT# 102602D019

IPI# N/A

Location Step	Operation Mtd/Cond	Qty In	Qty Out	Var	Mech	Rej	FF
	<i>Irradiation</i>	6	6	0	0		
	<i>30k</i>					N/A	N/A
	<i>Level</i>						
PASS	Post Rad Read/Rec. Tp4	6	6	0	0	0	0
	<i>Irradiation</i>	6	6	0	0		
	<i>50k</i>					N/A	N/A
	<i>Level</i>						
PASS	Post Rad Read/Rec. Tp5	6	6	0	0	0	0
	<i>Irradiation</i>	6	6	0	0		
	<i>80k</i>					N/A	N/A
	<i>Level</i>						
PASS	Post Rad Read/Rec. Tp6	6	6	0	0	0	0
	<i>Irradiation</i>	6	6	0	0		
	<i>100k</i>					N/A	N/A
	<i>Level</i>						
PASS	Post Rad Read/Rec. Tp7	6	6	0	0	0	0

Note: All irradiation's are done per MAS-5010

Ok**RM117HRQMLV****102602D019**

DEVICE	1	BIN	1	HEAD	3	08:57 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-28.709	UA	
2.0	-29.243 UA	3.0	0.535 UA	4.0	0.000	UA	
5.0	-0.80 MA	6.0	-0.99 MA	7.0	-1.96	MA	
8.0	1.245 V	9.0	1.238 V	10.0	1.248	V	
11.0	1.247 V	12.0	-3.5 MV	13.0	2.9	MV	
14.0	1.0 MV	15.0	-2.8 MV	22.0	42	UV	
23.0	2.9 MV	24.0	0.310 MV	25.0	78	DB	
16.0	-1.03 A	17.0	1.246 V	18.0	-0.33	A	
19.0	1.254 V	20.0	1.242 V				

DEVICE	2	BIN	1	HEAD	3	08:57 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396	UA	
2.0	-29.396 UA	3.0	0.000 UA	4.0	-0.688	UA	
5.0	-0.81 MA	6.0	-1.00 MA	7.0	-1.99	MA	
8.0	1.247 V	9.0	1.240 V	10.0	1.251	V	
11.0	1.250 V	12.0	-3.6 MV	13.0	2.6	MV	
14.0	1.0 MV	15.0	-2.8 MV	22.0	43	UV	
23.0	2.7 MV	24.0	0.309 MV	25.0	80	DB	
16.0	-1.04 A	17.0	1.249 V	18.0	-0.33	A	
19.0	1.256 V	20.0	1.243 V				

DEVICE	3	BIN	1	HEAD	3	08:57 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-28.709	UA	
2.0	-28.709 UA	3.0	0.000 UA	4.0	0.306	UA	
5.0	-0.80 MA	6.0	-0.98 MA	7.0	-1.96	MA	
8.0	1.247 V	9.0	1.240 V	10.0	1.250	V	
11.0	1.250 V	12.0	-3.3 MV	13.0	2.7	MV	
14.0	0.9 MV	15.0	-3.0 MV	22.0	41	UV	
23.0	3.1 MV	24.0	0.313 MV	25.0	78	DB	
16.0	-1.03 A	17.0	1.249 V	18.0	-0.32	A	
19.0	1.256 V	20.0	1.244 V				

DEVICE	4	BIN	1	HEAD	3	08:58 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396	UA	
2.0	-29.396 UA	3.0	0.000 UA	4.0	0.306	UA	
5.0	-0.81 MA	6.0	-1.00 MA	7.0	-1.98	MA	
8.0	1.245 V	9.0	1.240 V	10.0	1.249	V	
11.0	1.248 V	12.0	-3.7 MV	13.0	4.1	MV	
14.0	1.0 MV	15.0	-2.5 MV	22.0	42	UV	
23.0	2.9 MV	24.0	0.308 MV	25.0	77	DB	
16.0	-1.03 A	17.0	1.247 V	18.0	-0.33	A	
19.0	1.255 V	20.0	1.244 V				

DEVICE	5	BIN	1	HEAD	3	08:58 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-28.709	UA	
2.0	-28.632 UA	3.0	-0.076 UA	4.0	-0.382	UA	
5.0	-0.81 MA	6.0	-0.99 MA	7.0	-1.96	MA	
8.0	1.247 V	9.0	1.240 V	10.0	1.250	V	
11.0	1.249 V	12.0	-3.4 MV	13.0	2.6	MV	
14.0	1.0 MV	15.0	-2.5 MV	22.0	42	UV	
23.0	3.0 MV	24.0	0.312 MV	25.0	77	DB	
16.0	-1.03 A	17.0	1.249 V	18.0	-0.32	A	
19.0	1.255 V	20.0	1.243 V				

DEVICE	6	BIN	1	HEAD	3	08:58 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-28.174	UA	
2.0	-28.632 UA	3.0	0.458 UA	4.0	-0.535	UA	
5.0	-0.80 MA	6.0	-0.98 MA	7.0	-1.97	MA	
8.0	1.246 V	9.0	1.240 V	10.0	1.250	V	
11.0	1.249 V	12.0	-3.6 MV	13.0	3.1	MV	
14.0	1.0 MV	15.0	-3.2 MV	22.0	42	UV	
23.0	3.7 MV	24.0	0.312 MV	25.0	76	DB	
16.0	-1.04 A	17.0	1.248 V	18.0	-0.33	A	
19.0	1.256 V	20.0	1.244 V				

DEVICE	7	BIN	1	HEAD	3	08:59 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396	UA	
2.0	-29.091 UA	3.0	-0.306 UA	4.0	-0.688	UA	
5.0	-0.80 MA	6.0	-0.98 MA	7.0	-1.97	MA	
8.0	1.248 V	9.0	1.241 V	10.0	1.251	V	
11.0	1.250 V	12.0	-3.3 MV	13.0	2.7	MV	
14.0	0.8 MV	15.0	-3.0 MV	22.0	42	UV	
23.0	3.0 MV	24.0	0.312 MV	25.0	77	DB	
16.0	-1.03 A	17.0	1.250 V	18.0	-0.32	A	
19.0	1.257 V	20.0	1.245 V				

DEVICE	8	BIN	1	HEAD	3	08:59 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-28.403	UA	
2.0	-28.709 UA	3.0	0.306 UA	4.0	0.535	UA	
5.0	-0.81 MA	6.0	-0.99 MA	7.0	-1.97	MA	
8.0	1.246 V	9.0	1.239 V	10.0	1.250	V	
11.0	1.249 V	12.0	-3.5 MV	13.0	2.6	MV	
14.0	1.0 MV	15.0	-2.8 MV	22.0	41	UV	
23.0	3.0 MV	24.0	0.311 MV	25.0	76	DB	
16.0	-1.02 A	17.0	1.248 V	18.0	-0.32	A	
19.0	1.255 V	20.0	1.243 V				

3k**RM117HRQMLV****102602D019**

DEVICE	1	BIN	1	HEAD	3	09:39 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-28.709 UA	3.0	-0.688 UA	4.0	-0.382 UA		
5.0	-0.80 MA	6.0	-0.99 MA	7.0	-1.97 MA		
8.0	1.245 V	9.0	1.238 V	10.0	1.248 V		
11.0	1.247 V	12.0	-3.4 MV	13.0	2.9 MV		
14.0	0.9 MV	15.0	-2.9 MV	22.0	41 UV		
23.0	3.1 MV	24.0	0.311 MV	25.0	76 DB		
16.0	-1.04 A	17.0	1.246 V	18.0	-0.33 A		
19.0	1.253 V	20.0	1.242 V				

DEVICE	2	BIN	1	HEAD	3	09:39 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-29.473 UA	3.0	0.076 UA	4.0	0.000 UA		
5.0	-0.81 MA	6.0	-1.01 MA	7.0	-2.00 MA		
8.0	1.247 V	9.0	1.240 V	10.0	1.251 V		
11.0	1.250 V	12.0	-3.5 MV	13.0	2.5 MV		
14.0	0.8 MV	15.0	-2.7 MV	22.0	41 UV		
23.0	3.2 MV	24.0	0.311 MV	25.0	77 DB		
16.0	-1.04 A	17.0	1.249 V	18.0	-0.33 A		
19.0	1.256 V	20.0	1.244 V				

DEVICE	3	BIN	1	HEAD	3	09:39 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-30.007 UA		
2.0	-29.473 UA	3.0	-0.535 UA	4.0	1.222 UA		
5.0	-0.80 MA	6.0	-0.98 MA	7.0	-1.94 MA		
8.0	1.246 V	9.0	1.240 V	10.0	1.250 V		
11.0	1.249 V	12.0	-3.4 MV	13.0	3.6 MV		
14.0	0.6 MV	15.0	-2.6 MV	22.0	41 UV		
23.0	3.2 MV	24.0	0.320 MV	25.0	76 DB		
16.0	-1.02 A	17.0	1.248 V	18.0	-0.32 A		
19.0	1.255 V	20.0	1.244 V				

DEVICE	4	BIN	1	HEAD	3	09:40 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-30.007 UA		
2.0	-29.625 UA	3.0	-0.382 UA	4.0	0.000 UA		
5.0	-0.81 MA	6.0	-1.00 MA	7.0	-1.97 MA		
8.0	1.245 V	9.0	1.239 V	10.0	1.248 V		
11.0	1.248 V	12.0	-3.5 MV	13.0	3.8 MV		
14.0	0.6 MV	15.0	-2.8 MV	22.0	42 UV		
23.0	2.9 MV	24.0	0.315 MV	25.0	80 DB		
16.0	-1.03 A	17.0	1.247 V	18.0	-0.33 A		
19.0	1.254 V	20.0	1.243 V				

DEVICE	5	BIN	1	HEAD	3	09:40 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.091 UA		
2.0	-29.396 UA	3.0	0.306 UA	4.0	-0.688 UA		
5.0	-0.80 MA	6.0	-0.98 MA	7.0	-1.95 MA		
8.0	1.246 V	9.0	1.239 V	10.0	1.250 V		
11.0	1.249 V	12.0	-3.3 MV	13.0	2.7 MV		
14.0	0.8 MV	15.0	-2.4 MV	22.0	42 UV		
23.0	3.1 MV	24.0	0.319 MV	25.0	77 DB		
16.0	-1.03 A	17.0	1.248 V	18.0	-0.32 A		
19.0	1.255 V	20.0	1.243 V				

DEVICE	6	BIN	1	HEAD	3	09:40 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-29.396 UA	3.0	0.000 UA	4.0	-0.688 UA		
5.0	-0.80 MA	6.0	-0.99 MA	7.0	-1.96 MA		
8.0	1.246 V	9.0	1.239 V	10.0	1.249 V		
11.0	1.248 V	12.0	-3.6 MV	13.0	3.0 MV		
14.0	0.9 MV	15.0	-3.0 MV	22.0	42 UV		
23.0	3.2 MV	24.0	0.323 MV	25.0	76 DB		
16.0	-1.04 A	17.0	1.248 V	18.0	-0.33 A		
19.0	1.255 V	20.0	1.243 V				

DEVICE	7	BIN	1	HEAD	3	09:40 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-29.625 UA	3.0	0.229 UA	4.0	0.306 UA		
5.0	-0.80 MA	6.0	-0.98 MA	7.0	-1.95 MA		
8.0	1.247 V	9.0	1.240 V	10.0	1.251 V		
11.0	1.250 V	12.0	-3.5 MV	13.0	2.4 MV		
14.0	0.7 MV	15.0	-2.8 MV	22.0	41 UV		
23.0	3.2 MV	24.0	0.317 MV	25.0	78 DB		
16.0	-1.03 A	17.0	1.249 V	18.0	-0.32 A		
19.0	1.256 V	20.0	1.244 V				

DEVICE	8	BIN	1	HEAD	3	09:41 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.625 UA		
2.0	-29.396 UA	3.0	-0.229 UA	4.0	0.000 UA		
5.0	-0.80 MA	6.0	-0.99 MA	7.0	-1.96 MA		
8.0	1.245 V	9.0	1.239 V	10.0	1.249 V		
11.0	1.248 V	12.0	-3.5 MV	13.0	3.1 MV		
14.0	1.0 MV	15.0	-2.8 MV	22.0	41 UV		
23.0	2.6 MV	24.0	0.316 MV	25.0	81 DB		
16.0	-1.02 A	17.0	1.247 V	18.0	-0.32 A		
19.0	1.255 V	20.0	1.243 V				

10k**RM117HRQMLV****102602D019**

DEVICE	1	BIN	1	HEAD	3	09:49 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-29.396 UA	3.0	0.000 UA	4.0	-0.840 UA		
5.0	-0.80 MA	6.0	-0.98 MA	7.0	-1.97 MA		
8.0	1.245 V	9.0	1.238 V	10.0	1.248 V		
11.0	1.247 V	12.0	-3.4 MV	13.0	2.9 MV		
14.0	0.9 MV	15.0	-2.9 MV	22.0	41 UV		
23.0	2.5 MV	24.0	0.310 MV	25.0	81 DB		
16.0	-1.04 A	17.0	1.247 V	18.0	-0.33 A		
19.0	1.254 V	20.0	1.242 V				

DEVICE	2	BIN	1	HEAD	3	09:49 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-29.396 UA	3.0	0.000 UA	4.0	0.000 UA		
5.0	-0.81 MA	6.0	-1.01 MA	7.0	-1.99 MA		
8.0	1.247 V	9.0	1.240 V	10.0	1.250 V		
11.0	1.250 V	12.0	-3.3 MV	13.0	2.6 MV		
14.0	0.8 MV	15.0	-2.6 MV	22.0	41 UV		
23.0	3.0 MV	24.0	0.310 MV	25.0	79 DB		
16.0	-1.04 A	17.0	1.249 V	18.0	-0.33 A		
19.0	1.256 V	20.0	1.244 V				

DEVICE	3	BIN	1	HEAD	3	09:49 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-29.625 UA	3.0	0.229 UA	4.0	-0.076 UA		
5.0	-0.78 MA	6.0	-0.96 MA	7.0	-1.93 MA		
8.0	1.246 V	9.0	1.240 V	10.0	1.250 V		
11.0	1.249 V	12.0	-3.6 MV	13.0	3.6 MV		
14.0	0.7 MV	15.0	-2.7 MV	22.0	41 UV		
23.0	3.1 MV	24.0	0.319 MV	25.0	79 DB		
16.0	-1.03 A	17.0	1.248 V	18.0	-0.32 A		
19.0	1.255 V	20.0	1.244 V				

DEVICE	4	BIN	1	HEAD	3	09:49 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-30.007 UA	3.0	0.611 UA	4.0	-0.688 UA		
5.0	-0.80 MA	6.0	-0.99 MA	7.0	-1.96 MA		
8.0	1.245 V	9.0	1.238 V	10.0	1.249 V		
11.0	1.248 V	12.0	-3.6 MV	13.0	3.0 MV		
14.0	0.8 MV	15.0	-2.4 MV	22.0	42 UV		
23.0	3.1 MV	24.0	0.313 MV	25.0	80 DB		
16.0	-1.03 A	17.0	1.247 V	18.0	-0.33 A		
19.0	1.254 V	20.0	1.242 V				

DEVICE	5	BIN	1	HEAD	3	09:49 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.091 UA		
2.0	-29.625 UA	3.0	0.535 UA	4.0	0.535 UA		
5.0	-0.79 MA	6.0	-0.97 MA	7.0	-1.94 MA		
8.0	1.246 V	9.0	1.240 V	10.0	1.250 V		
11.0	1.249 V	12.0	-3.6 MV	13.0	3.1 MV		
14.0	0.8 MV	15.0	-2.4 MV	22.0	42 UV		
23.0	3.2 MV	24.0	0.319 MV	25.0	77 DB		
16.0	-1.03 A	17.0	1.248 V	18.0	-0.32 A		
19.0	1.255 V	20.0	1.243 V				

DEVICE	6	BIN	1	HEAD	3	09:50 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-29.625 UA	3.0	0.229 UA	4.0	0.382 UA		
5.0	-0.79 MA	6.0	-0.98 MA	7.0	-1.95 MA		
8.0	1.246 V	9.0	1.238 V	10.0	1.249 V		
11.0	1.249 V	12.0	-3.8 MV	13.0	2.7 MV		
14.0	0.8 MV	15.0	-3.0 MV	22.0	41 UV		
23.0	3.0 MV	24.0	0.318 MV	25.0	79 DB		
16.0	-1.04 A	17.0	1.247 V	18.0	-0.33 A		
19.0	1.255 V	20.0	1.242 V				

DEVICE	7	BIN	1	HEAD	3	09:50 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-28.709 UA		
2.0	-29.473 UA	3.0	0.764 UA	4.0	0.000 UA		
5.0	-0.79 MA	6.0	-0.97 MA	7.0	-1.95 MA		
8.0	1.247 V	9.0	1.240 V	10.0	1.251 V		
11.0	1.250 V	12.0	-3.6 MV	13.0	2.2 MV		
14.0	1.0 MV	15.0	-2.8 MV	22.0	42 UV		
23.0	3.3 MV	24.0	0.318 MV	25.0	76 DB		
16.0	-1.03 A	17.0	1.249 V	18.0	-0.32 A		
19.0	1.256 V	20.0	1.243 V				

DEVICE	8	BIN	1	HEAD	3	09:50 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-30.007 UA		
2.0	-29.625 UA	3.0	-0.382 UA	4.0	-0.382 UA		
5.0	-0.79 MA	6.0	-0.97 MA	7.0	-1.94 MA		
8.0	1.245 V	9.0	1.239 V	10.0	1.249 V		
11.0	1.248 V	12.0	-3.7 MV	13.0	3.2 MV		
14.0	0.9 MV	15.0	-2.7 MV	22.0	42 UV		
23.0	3.4 MV	24.0	0.314 MV	25.0	76 DB		
16.0	-1.02 A	17.0	1.247 V	18.0	-0.33 A		
19.0	1.255 V	20.0	1.243 V				

30k**RM117HRQMLV****102602D019**

DEVICE	1	BIN	1	HEAD	3	10:00 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-30.007 UA		
2.0	-30.313 UA	3.0	0.306 UA	4.0	1.222 UA		
5.0	-0.80 MA	6.0	-0.99 MA	7.0	-1.97 MA		
8.0	1.245 V	9.0	1.238 V	10.0	1.248 V		
11.0	1.247 V	12.0	-3.5 MV	13.0	2.9 MV		
14.0	1.0 MV	15.0	-3.1 MV	22.0	42 UV		
23.0	3.0 MV	24.0	0.307 MV	25.0	77 DB		
16.0	-1.04 A	17.0	1.246 V	18.0	-0.33 A		
19.0	1.254 V	20.0	1.242 V				

DEVICE	2	BIN	1	HEAD	3	10:01 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.625 UA		
2.0	-29.091 UA	3.0	-0.535 UA	4.0	0.229 UA		
5.0	-0.81 MA	6.0	-1.01 MA	7.0	-1.99 MA		
8.0	1.247 V	9.0	1.240 V	10.0	1.251 V		
11.0	1.250 V	12.0	-3.5 MV	13.0	2.7 MV		
14.0	0.7 MV	15.0	-2.7 MV	22.0	41 UV		
23.0	2.8 MV	24.0	0.304 MV	25.0	81 DB		
16.0	-1.04 A	17.0	1.249 V	18.0	-0.33 A		
19.0	1.256 V	20.0	1.244 V				

DEVICE	3	BIN	1	HEAD	3	10:01 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-30.466 UA	3.0	1.070 UA	4.0	-0.611 UA		
5.0	-0.77 MA	6.0	-0.95 MA	7.0	-1.91 MA		
8.0	1.247 V	9.0	1.240 V	10.0	1.251 V		
11.0	1.250 V	12.0	-4.0 MV	13.0	2.6 MV		
14.0	0.8 MV	15.0	-2.7 MV	22.0	42 UV		
23.0	3.9 MV	24.0	0.330 MV	25.0	79 DB		
16.0	-1.03 A	17.0	1.249 V	18.0	-0.33 A		
19.0	1.257 V	20.0	1.244 V				

DEVICE	4	BIN	1	HEAD	3	10:01 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.625 UA		
2.0	-30.007 UA	3.0	0.382 UA	4.0	0.153 UA		
5.0	-0.78 MA	6.0	-0.97 MA	7.0	-1.94 MA		
8.0	1.245 V	9.0	1.238 V	10.0	1.249 V		
11.0	1.248 V	12.0	-4.1 MV	13.0	2.9 MV		
14.0	0.9 MV	15.0	-2.2 MV	22.0	42 UV		
23.0	3.5 MV	24.0	0.320 MV	25.0	75 DB		
16.0	-1.03 A	17.0	1.247 V	18.0	-0.34 A		
19.0	1.255 V	20.0	1.242 V				

DEVICE	5	BIN	1	HEAD	3	10:01 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.625	UA	
2.0	-30.466 UA	3.0	0.840 UA	4.0	-0.917	UA	
5.0	-0.77 MA	6.0	-0.96 MA	7.0	-1.92	MA	
8.0	1.247 V	9.0	1.239 V	10.0	1.251	V	
11.0	1.250 V	12.0	-4.1 MV	13.0	2.2	MV	
14.0	0.9 MV	15.0	-2.3 MV	22.0	41	UV	
23.0	3.3 MV	24.0	0.324 MV	25.0	78	DB	
16.0	-1.03 A	17.0	1.248 V	18.0	-0.33	A	
19.0	1.256 V	20.0	1.243 V				

DEVICE	6	BIN	1	HEAD	3	10:02 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-30.007	UA	
2.0	-30.313 UA	3.0	0.306 UA	4.0	-0.229	UA	
5.0	-0.77 MA	6.0	-0.96 MA	7.0	-1.93	MA	
8.0	1.246 V	9.0	1.239 V	10.0	1.250	V	
11.0	1.249 V	12.0	-4.1 MV	13.0	2.5	MV	
14.0	1.0 MV	15.0	-3.0 MV	22.0	41	UV	
23.0	3.1 MV	24.0	0.319 MV	25.0	78	DB	
16.0	-1.04 A	17.0	1.248 V	18.0	-0.34	A	
19.0	1.256 V	20.0	1.243 V				

DEVICE	7	BIN	1	HEAD	3	10:02 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396	UA	
2.0	-30.313 UA	3.0	0.917 UA	4.0	-0.688	UA	
5.0	-0.77 MA	6.0	-0.95 MA	7.0	-1.93	MA	
8.0	1.248 V	9.0	1.240 V	10.0	1.252	V	
11.0	1.251 V	12.0	-3.9 MV	13.0	2.2	MV	
14.0	0.8 MV	15.0	-2.8 MV	22.0	42	UV	
23.0	3.6 MV	24.0	0.322 MV	25.0	75	DB	
16.0	-1.03 A	17.0	1.250 V	18.0	-0.33	A	
19.0	1.257 V	20.0	1.244 V				

DEVICE	8	BIN	1	HEAD	3	10:02 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396	UA	
2.0	-29.396 UA	3.0	0.000 UA	4.0	0.229	UA	
5.0	-0.78 MA	6.0	-0.96 MA	7.0	-1.94	MA	
8.0	1.245 V	9.0	1.239 V	10.0	1.249	V	
11.0	1.248 V	12.0	-4.0 MV	13.0	3.1	MV	
14.0	1.0 MV	15.0	-3.0 MV	22.0	43	UV	
23.0	3.6 MV	24.0	0.315 MV	25.0	76	DB	
16.0	-1.02 A	17.0	1.247 V	18.0	-0.33	A	
19.0	1.255 V	20.0	1.242 V				

50k**RM117HRQMLV****102602D019**

DEVICE	1	BIN	1	HEAD	3	10:13 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396	UA	
2.0	-29.625 UA	3.0	0.229 UA	4.0	0.229	UA	
5.0	-0.80 MA	6.0	-0.99 MA	7.0	-1.97	MA	
8.0	1.245 V	9.0	1.238 V	10.0	1.248	V	
11.0	1.247 V	12.0	-3.4 MV	13.0	2.7	MV	
14.0	0.7 MV	15.0	-2.9 MV	22.0	41	UV	
23.0	2.6 MV	24.0	0.319 MV	25.0	81	DB	
16.0	-1.04 A	17.0	1.246 V	18.0	-0.33	A	
19.0	1.253 V	20.0	1.242 V				

DEVICE	2	BIN	1	HEAD	3	10:13 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-30.313	UA	
2.0	-30.542 UA	3.0	0.229 UA	4.0	-0.688	UA	
5.0	-0.82 MA	6.0	-1.00 MA	7.0	-2.00	MA	
8.0	1.247 V	9.0	1.240 V	10.0	1.250	V	
11.0	1.250 V	12.0	-3.4 MV	13.0	2.6	MV	
14.0	0.8 MV	15.0	-3.0 MV	22.0	41	UV	
23.0	2.7 MV	24.0	0.304 MV	25.0	81	DB	
16.0	-1.04 A	17.0	1.249 V	18.0	-0.33	A	
19.0	1.256 V	20.0	1.244 V				

DEVICE	3	BIN	1	HEAD	3	10:13 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.091	UA	
2.0	-30.007 UA	3.0	0.917 UA	4.0	0.000	UA	
5.0	-0.76 MA	6.0	-0.95 MA	7.0	-1.95	MA	
8.0	1.247 V	9.0	1.240 V	10.0	1.252	V	
11.0	1.251 V	12.0	-4.8 MV	13.0	2.3	MV	
14.0	1.1 MV	15.0	-2.5 MV	22.0	42	UV	
23.0	3.2 MV	24.0	0.323 MV	25.0	77	DB	
16.0	-1.03 A	17.0	1.249 V	18.0	-0.33	A	
19.0	1.258 V	20.0	1.244 V				

DEVICE	4	BIN	1	HEAD	3	10:13 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396	UA	
2.0	-29.625 UA	3.0	0.229 UA	4.0	0.000	UA	
5.0	-0.78 MA	6.0	-0.97 MA	7.0	-1.98	MA	
8.0	1.245 V	9.0	1.238 V	10.0	1.250	V	
11.0	1.249 V	12.0	-4.5 MV	13.0	2.9	MV	
14.0	0.9 MV	15.0	-2.3 MV	22.0	42	UV	
23.0	3.2 MV	24.0	0.317 MV	25.0	78	DB	
16.0	-1.03 A	17.0	1.247 V	18.0	-0.34	A	
19.0	1.256 V	20.0	1.242 V				

DEVICE 5	BIN 1	HEAD 3	10:13 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0 -29.473 UA
2.0	-29.396 UA	3.0	-0.076 UA	4.0 -0.382 UA
5.0	-0.77 MA	6.0	-0.96 MA	7.0 -1.99 MA
8.0	1.247 V	9.0	1.239 V	10.0 1.252 V
11.0	1.251 V	12.0	-4.8 MV	13.0 1.9 MV
14.0	1.1 MV	15.0	-2.2 MV	22.0 43 UV
23.0	3.2 MV	24.0	0.324 MV	25.0 77 DB
16.0	-1.04 A	17.0	1.249 V	18.0 -0.34 A
19.0	1.257 V	20.0	1.243 V	

DEVICE 6	BIN 1	HEAD 3	10:14 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0 -30.007 UA
2.0	-30.007 UA	3.0	0.000 UA	4.0 0.000 UA
5.0	-0.77 MA	6.0	-0.96 MA	7.0 -1.97 MA
8.0	1.246 V	9.0	1.239 V	10.0 1.250 V
11.0	1.250 V	12.0	-4.5 MV	13.0 2.6 MV
14.0	0.8 MV	15.0	-3.1 MV	22.0 42 UV
23.0	3.1 MV	24.0	0.319 MV	25.0 77 DB
16.0	-1.04 A	17.0	1.248 V	18.0 -0.34 A
19.0	1.257 V	20.0	1.243 V	

DEVICE 7	BIN 1	HEAD 3	10:14 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0 -30.007 UA
2.0	-30.313 UA	3.0	0.306 UA	4.0 0.000 UA
5.0	-0.76 MA	6.0	-0.95 MA	7.0 -1.96 MA
8.0	1.248 V	9.0	1.241 V	10.0 1.253 V
11.0	1.252 V	12.0	-4.4 MV	13.0 2.5 MV
14.0	0.9 MV	15.0	-2.8 MV	22.0 41 UV
23.0	3.6 MV	24.0	0.323 MV	25.0 74 DB
16.0	-1.04 A	17.0	1.250 V	18.0 -0.33 A
19.0	1.259 V	20.0	1.245 V	

DEVICE 8	BIN 1	HEAD 3	10:14 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0 -30.007 UA
2.0	-31.153 UA	3.0	1.146 UA	4.0 0.076 UA
5.0	-0.78 MA	6.0	-0.97 MA	7.0 -2.01 MA
8.0	1.245 V	9.0	1.239 V	10.0 1.250 V
11.0	1.249 V	12.0	-4.4 MV	13.0 3.5 MV
14.0	0.8 MV	15.0	-3.0 MV	22.0 42 UV
23.0	3.2 MV	24.0	0.314 MV	25.0 77 DB
16.0	-1.02 A	17.0	1.247 V	18.0 -0.34 A
19.0	1.256 V	20.0	1.243 V	

80k

RM117HRQMLV

102602D019

DEVICE	1	BIN	1	HEAD	3	10:27 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.625 UA		
2.0	-30.007 UA	3.0	0.382 UA	4.0	-0.076 UA		
5.0	-0.80 MA	6.0	-0.99 MA	7.0	-1.97 MA		
8.0	1.245 V	9.0	1.238 V	10.0	1.248 V		
11.0	1.247 V	12.0	-3.6 MV	13.0	2.9 MV		
14.0	0.9 MV	15.0	-2.8 MV	22.0	42 UV		
23.0	2.7 MV	24.0	0.309 MV	25.0	80 DB		
16.0	-1.04 A	17.0	1.246 V	18.0	-0.33 A		
19.0	1.254 V	20.0	1.242 V				

DEVICE	2	BIN	1	HEAD	3	10:27 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-30.007 UA		
2.0	-31.688 UA	3.0	1.681 UA	4.0	0.000 UA		
5.0	-0.81 MA	6.0	-1.00 MA	7.0	-2.01 MA		
8.0	1.247 V	9.0	1.240 V	10.0	1.251 V		
11.0	1.250 V	12.0	-3.4 MV	13.0	2.8 MV		
14.0	0.8 MV	15.0	-2.6 MV	22.0	41 UV		
23.0	2.9 MV	24.0	0.305 MV	25.0	78 DB		
16.0	-1.04 A	17.0	1.249 V	18.0	-0.33 A		
19.0	1.256 V	20.0	1.244 V				

DEVICE	3	BIN	1	HEAD	3	10:27 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-29.473 UA	3.0	0.076 UA	4.0	-0.382 UA		
5.0	-0.91 MA	6.0	-1.18 MA	7.0	-2.67 MA		
8.0	1.249 V	9.0	1.241 V	10.0	1.255 V		
11.0	1.254 V	12.0	-6.5 MV	13.0	1.7 MV		
14.0	1.1 MV	15.0	-2.5 MV	22.0	42 UV		
23.0	3.5 MV	24.0	0.330 MV	25.0	72 DB		
16.0	-1.04 A	17.0	1.251 V	18.0	-0.36 A		
19.0	1.262 V	20.0	1.245 V				

DEVICE	4	BIN	1	HEAD	3	10:28 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-30.007 UA		
2.0	-30.542 UA	3.0	0.535 UA	4.0	-0.993 UA		
5.0	-0.93 MA	6.0	-1.22 MA	7.0	-2.75 MA		
8.0	1.246 V	9.0	1.239 V	10.0	1.252 V		
11.0	1.251 V	12.0	-6.5 MV	13.0	2.6 MV		
14.0	1.2 MV	15.0	-2.4 MV	22.0	42 UV		
23.0	3.5 MV	24.0	0.321 MV	25.0	73 DB		
16.0	-1.04 A	17.0	1.248 V	18.0	-0.36 A		
19.0	1.258 V	20.0	1.243 V				

DEVICE	5	BIN	1	HEAD	3	10:28 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-30.007 UA		
2.0	-30.007 UA	3.0	0.000 UA	4.0	-0.229 UA		
5.0	-0.96 MA	6.0	-1.26 MA	7.0	-2.86 MA		
8.0	1.249 V	9.0	1.241 V	10.0	1.256 V		
11.0	1.254 V	12.0	-7.0 MV	13.0	2.4 MV		
14.0	1.4 MV	15.0	-2.4 MV	22.0	41 UV		
23.0	3.3 MV	24.0	0.328 MV	25.0	73 DB		
16.0	-1.05 A	17.0	1.251 V	18.0	-0.37 A		
19.0	1.262 V	20.0	1.246 V				

DEVICE	6	BIN	1	HEAD	3	10:28 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-29.396 UA	3.0	0.000 UA	4.0	0.229 UA		
5.0	-0.90 MA	6.0	-1.17 MA	7.0	-2.64 MA		
8.0	1.247 V	9.0	1.239 V	10.0	1.253 V		
11.0	1.252 V	12.0	-6.3 MV	13.0	2.3 MV		
14.0	1.2 MV	15.0	-3.0 MV	22.0	42 UV		
23.0	3.2 MV	24.0	0.330 MV	25.0	75 DB		
16.0	-1.05 A	17.0	1.249 V	18.0	-0.36 A		
19.0	1.259 V	20.0	1.244 V				

DEVICE	7	BIN	1	HEAD	3	10:28 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-30.313 UA	3.0	0.917 UA	4.0	-0.229 UA		
5.0	-0.90 MA	6.0	-1.16 MA	7.0	-2.60 MA		
8.0	1.249 V	9.0	1.241 V	10.0	1.255 V		
11.0	1.254 V	12.0	-6.3 MV	13.0	2.2 MV		
14.0	1.3 MV	15.0	-2.7 MV	22.0	42 UV		
23.0	3.2 MV	24.0	0.324 MV	25.0	74 DB		
16.0	-1.04 A	17.0	1.251 V	18.0	-0.36 A		
19.0	1.261 V	20.0	1.246 V				

DEVICE	8	BIN	1	HEAD	3	10:29 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-30.007 UA	3.0	0.611 UA	4.0	-0.306 UA		
5.0	-1.00 MA	6.0	-1.29 MA	7.0	-2.89 MA		
8.0	1.246 V	9.0	1.239 V	10.0	1.252 V		
11.0	1.251 V	12.0	-6.0 MV	13.0	2.5 MV		
14.0	1.0 MV	15.0	-2.7 MV	22.0	42 UV		
23.0	3.9 MV	24.0	0.316 MV	25.0	73 DB		
16.0	-1.03 A	17.0	1.248 V	18.0	-0.36 A		
19.0	1.258 V	20.0	1.244 V				

100k**RM117HRQMLV****102602D019**

DEVICE	1	BIN	1	HEAD	3	10:39 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-29.625 UA	3.0	0.229 UA	4.0	0.229 UA		
5.0	-0.80 MA	6.0	-0.98 MA	7.0	-1.97 MA		
8.0	1.245 V	9.0	1.238 V	10.0	1.248 V		
11.0	1.247 V	12.0	-3.4 MV	13.0	2.5 MV		
14.0	0.9 MV	15.0	-2.9 MV	22.0	41 UV		
23.0	2.8 MV	24.0	0.310 MV	25.0	79 DB		
16.0	-1.04 A	17.0	1.246 V	18.0	-0.33 A		
19.0	1.254 V	20.0	1.241 V				

DEVICE	2	BIN	1	HEAD	3	10:39 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.473 UA		
2.0	-29.473 UA	3.0	0.000 UA	4.0	0.000 UA		
5.0	-0.81 MA	6.0	-1.00 MA	7.0	-2.00 MA		
8.0	1.247 V	9.0	1.240 V	10.0	1.251 V		
11.0	1.250 V	12.0	-3.5 MV	13.0	2.3 MV		
14.0	0.9 MV	15.0	-2.7 MV	22.0	42 UV		
23.0	3.0 MV	24.0	0.306 MV	25.0	75 DB		
16.0	-1.04 A	17.0	1.249 V	18.0	-0.33 A		
19.0	1.256 V	20.0	1.243 V				

DEVICE	3	BIN	1	HEAD	3	10:39 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-30.313 UA		
2.0	-30.313 UA	3.0	0.000 UA	4.0	0.306 UA		
5.0	-1.21 MA	6.0	-1.58 MA	7.0	-3.56 MA		
8.0	1.250 V	9.0	1.242 V	10.0	1.259 V		
11.0	1.257 V	12.0	-8.8 MV	13.0	1.9 MV		
14.0	1.8 MV	15.0	-2.9 MV	22.0	43 UV		
23.0	3.5 MV	24.0	0.326 MV	25.0	72 DB		
16.0	-1.05 A	17.0	1.252 V	18.0	-0.39 A		
19.0	1.266 V	20.0	1.247 V				

DEVICE	4	BIN	1	HEAD	3	10:39 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-30.007 UA		
2.0	-30.542 UA	3.0	0.535 UA	4.0	0.000 UA		
5.0	-1.25 MA	6.0	-1.63 MA	7.0	-3.65 MA		
8.0	1.247 V	9.0	1.239 V	10.0	1.255 V		
11.0	1.253 V	12.0	-8.1 MV	13.0	2.5 MV		
14.0	1.8 MV	15.0	-2.6 MV	22.0	42 UV		
23.0	3.4 MV	24.0	0.319 MV	25.0	72 DB		
16.0	-1.05 A	17.0	1.249 V	18.0	-0.39 A		
19.0	1.261 V	20.0	1.244 V				

DEVICE	5	BIN	1	HEAD	3	10:40 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-30.007 UA		
2.0	-30.007 UA	3.0	0.000 UA	4.0	-0.764 UA		
5.0	-1.27 MA	6.0	-1.66 MA	7.0	-3.68 MA		
8.0	1.250 V	9.0	1.242 V	10.0	1.259 V		
11.0	1.257 V	12.0	-8.9 MV	13.0	1.9 MV		
14.0	1.9 MV	15.0	-2.3 MV	22.0	41 UV		
23.0	3.4 MV	24.0	0.326 MV	25.0	71 DB		
16.0	-1.06 A	17.0	1.252 V	18.0	-0.40 A		
19.0	1.265 V	20.0	1.247 V				

DEVICE	6	BIN	1	HEAD	3	10:40 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.396 UA		
2.0	-29.625 UA	3.0	0.229 UA	4.0	-0.917 UA		
5.0	-1.13 MA	6.0	-1.47 MA	7.0	-3.32 MA		
8.0	1.247 V	9.0	1.240 V	10.0	1.255 V		
11.0	1.253 V	12.0	-7.8 MV	13.0	2.5 MV		
14.0	1.5 MV	15.0	-3.0 MV	22.0	42 UV		
23.0	3.1 MV	24.0	0.319 MV	25.0	74 DB		
16.0	-1.06 A	17.0	1.249 V	18.0	-0.39 A		
19.0	1.262 V	20.0	1.245 V				

DEVICE	7	BIN	1	HEAD	3	10:40 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-29.625 UA		
2.0	-30.007 UA	3.0	0.382 UA	4.0	-0.306 UA		
5.0	-1.14 MA	6.0	-1.49 MA	7.0	-3.37 MA		
8.0	1.250 V	9.0	1.243 V	10.0	1.258 V		
11.0	1.257 V	12.0	-7.8 MV	13.0	2.1 MV		
14.0	1.5 MV	15.0	-2.8 MV	22.0	42 UV		
23.0	3.2 MV	24.0	0.322 MV	25.0	74 DB		
16.0	-1.05 A	17.0	1.252 V	18.0	-0.38 A		
19.0	1.265 V	20.0	1.247 V				

DEVICE	8	BIN	1	HEAD	3	10:41 AM	04/23/2003
700.0	100	800.0	25 DGR	1.0	-28.709 UA		
2.0	-30.007 UA	3.0	1.299 UA	4.0	-0.229 UA		
5.0	-1.33 MA	6.0	-1.72 MA	7.0	-3.76 MA		
8.0	1.247 V	9.0	1.241 V	10.0	1.255 V		
11.0	1.253 V	12.0	-7.9 MV	13.0	3.2 MV		
14.0	1.7 MV	15.0	-2.9 MV	22.0	42 UV		
23.0	3.1 MV	24.0	0.315 MV	25.0	75 DB		
16.0	-1.04 A	17.0	1.249 V	18.0	-0.39 A		
19.0	1.262 V	20.0	1.245 V				