SHOULD BE 9417

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PROTON RADIATION RESULTS FOR HP 6N134, DC8417 OPTO-COUPLER
test date 3/2/95 at U. C. Davis

	A	B	C	D	E	F	G	H	I	J	K	L
1	CTR, If = 5 mA	initial	initial	post 25Kr	post 25Kr	post 25Kr	post 50Kr	post 50Kr	post 50Kr	post 100Kr	post 100Kr	post 100Kr
2	S/N	CTR	1/CTR	CTR	1/CTR	delta 1/CTR	CTR	1/CTR	delta 1/CTR	CTR	1/CTR	delta 1/CTR
3	6a	2.8	0.35714	2.853	0.35051	-0.00663	2.731	0.366166	0.009023	2.567	0.38956	0.032417
4	6b	3.159	0.31656	2.818	0.35486	0.038306	2.689	0.371885	0.05533	2.681	0.372995	0.056439
5	7a	2.874	0.34795	2.748	0.3639	0.015954	2.63	0.380228	0.032281	2.153	0.464468	0.116521
6	7b	2.638	0.37908	2.865	0.34904	-0.03003	2.753	0.36324	-0.01583	2.395	0.417537	0.038461
7												
8	mean value	2.86775	0.35018	2.821	0.35458	0.004398	2.70075	0.37038	0.0202	2.449	0.41114	0.06096
9	sample std. dev.	0.21775	0.02594	0.05259	0.00669	0.029386	0.054126	0.007483	0.030569	0.229695	0.040023	0.03842
10	mean + Ksigma	4.46601	0.5406	3.20703	0.40368	0.220091	3.098032	0.425305	0.24458	4.134965	0.704909	0.342965
11	mean - Ksigma	1.26949	0.15977	2.43497	0.30548	-0.2113	2.303468	0.315455	-0.20418	0.763035	0.11737	-0.22105
12	assumed limit	1										
13	derated limit					0.819611			0.803484			0.744621
14												
15	CTR, If = 10 mA	initial	initial	post 25Kr	post 25Kr	post 25Kr	post 50Kr	post 50Kr	post 50Kr	post 100Kr	post 100Kr	post 100Kr
16	S/N	CTR	1/CTR	CTR	1/CTR	delta 1/CTR	CTR	1/CTR	delta 1/CTR	CTR	1/CTR	delta 1/CTR
17	6a	1.916	0.52192	1.857	0.5385	0.016582	1.802	0.554939	0.033018	1.738	0.575374	0.053453
18	6b	1.993	0.50176	1.931	0.51787	0.01611	1.879	0.532198	0.030442	1.79	0.558659	0.056903
19	7a	1.976	0.50607	1.935	0.5168	0.010723	1.897	0.527148	0.021075	1.781	0.561482	0.055409
20	7b	3.597	0.27801	3.483	0.28711	0.009099	1.979	0.505306	0.227296	1.858	0.538213	0.260204
21												
22	mean value	2.3705	0.45194	2.3015	0.46507	0.013129	1.88925	0.529898	0.077958	1.79175	0.558432	0.106492
23	sample std. dev.	0.81833	0.11628	0.78848	0.11906	0.003779	0.072647	0.020369	0.099691	0.049655	0.015332	0.102484
24	mean + Ksigma	8.37707	1.30541	8.08896	1.33897	0.040866	2.422479	0.679406	0.80969	2.156215	0.670967	0.858724
25	mean - Ksigma	-3.6361	-0.4015	-3.486	-0.4088	-0.01461	1.356021	0.38039	-0.65377	1.427285	0.445897	-0.64574
26	Mfr spec. limit	1										
27	derated limit					0.960739			0.552581			0.538003

photocps get worse as If increases 5 to 10 mA?

proton

UNBIASED DURING EXPOSURE; CTR tested at Vcc = 5.5 V, Vo = 0.6 V; S/N 7a and b dose levels are 20 Kr, 40Kr and 125 Kr; statistics for C = .9, P = .99

PROTON RADIATION RESULTS FOR HP 6N134, DC8417 OPTO-COUPLER
test date 3/2/95 at U. C. Davis

	A	B	C	D	E	F	G	H	I	J	K	L
28	CTR, If = 15 mA	initial	initial	post 25Kr	post 25Kr	post 25Kr	post 50Kr	post 50Kr	post 50Kr	post 100Kr	post 100Kr	post 100Kr
29	S/N	CTR	1/CTR	CTR	1/CTR	delta 1/CTR	CTR	1/CTR	delta 1/CTR	CTR	1/CTR	delta 1/CTR
30	6a	2.54	0.3937	2.492	0.40128	0.007583	2.422	0.412882	0.019181	1.316	0.759878	0.366178
31	6b	2.629	0.38037	2.588	0.3864	0.006026	2.519	0.396983	0.01661	2.403	0.416146	0.035774
32	7a	2.658	0.37622	2.607	0.38358	0.00736	2.558	0.39093	0.014708	2.405	0.4158	0.039578
33	7b	2.75	0.36364	2.695	0.37106	0.007421	2.647	0.377786	0.01415	2.491	0.401445	0.037809
34												
35	mean value	2.64425	0.37848	2.5955	0.38558	0.007098	2.5365	0.394645	0.016162	2.15375	0.498318	0.119834
36	sample std. dev.	0.08655	0.01239	0.08327	0.01241	0.000721	0.093254	0.014561	0.002272	0.560004	0.174508	0.164236
37	mean + Ksigma	3.27953	0.46944	3.20669	0.47669	0.012387	3.220985	0.501523	0.032835	6.264182	1.779209	1.325328
38	mean - Ksigma	2.00897	0.28753	1.98431	0.29448	0.001808	1.852015	0.287768	-0.00051	-1.95668	-0.78257	-1.08566
39	assumed limit	1										
40	derated limit					0.987765			0.968208			0.430047

UNBIASED DURING EXPOSURE; CTR tested at Vcc = 5.5 V, Vo = 0.6 V; S/N 7a and b dose levels are 20 Kr, 40Kr and 125 Kr; statistics for C = .9, P = .99

PROTON RADIATION RESULTS FOR HP HCPL-6631 OPTO-COUPLER
test date 6/30/95 at U. C. Davis

	A	B	C	D	E	F	G	H	I	J	K	L
1	CTR, 5V, If = 2 mA	initial	initial	post 20Kr	post 20Kr	post 20Kr	post 50Kr	post 50Kr	post 50Kr	post 100Kr	post 100Kr	post 100Kr
2	S/N	CTR	1/CTR	CTR	1/CTR	delta 1/CTR	CTR	1/CTR	delta 1/CTR	CTR	1/CTR	delta 1/CTR
3	1A	2.3185	0.43131	2.3015	0.4345	0.003186	2.211	0.452284	0.020971	1	1	0.568687
4	1B	2.312	0.43253	2.289	0.43687	0.004346	1.755	0.569801	0.137275	0.87	1.149425	0.716899
5	2A	2.309	0.43309	2.2785	0.43889	0.005797	1.655	0.60423	0.171142	1.065	0.938967	0.505879
6	2B	2.32	0.43103	2.304	0.43403	0.002993	2.238	0.446828	0.015793	1.17	0.854701	0.423666
7	3A	2.3175	0.4315	2.307	0.43346	0.001964	2.283	0.43802	0.006521	1.56	0.641026	0.209526
8	3B	0.9	1.11111	0.425	2.35294	1.24183	0.235	4.255319	3.144208	0.08	12.5	11.38889
9												
10	mean value	2.0795	0.5451	1.98417	0.75511	0.210019	1.7295	1.127747	0.582651	0.9575	2.847353	2.302258
11	sample std. dev.	0.57785	0.27729	0.76391	0.78277	0.505484	0.779296	1.5338	1.256822	0.489732	4.731802	4.454685
12	mean + Ksigma	4.53132	1.72164	5.22543	4.07643	2.354786	5.036051	7.635659	5.915349	3.035433	22.92439	21.20349
13	mean - Ksigma	-0.3723	-0.6315	-1.2571	-2.5662		-1.57705	-5.38017		-1.12043	-17.2297	
14	assumed limit	1										
15	derated limit					0.298082			0.144606			0.045038
16												
17	CTR, 5V, If = 3 mA	initial	initial	post 20Kr	post 20Kr	post 20Kr	post 50Kr	post 50Kr	post 50Kr	post 100Kr	post 100Kr	post 100Kr
18	S/N	CTR	1/CTR	CTR	1/CTR	delta 1/CTR	CTR	1/CTR	delta 1/CTR	CTR	1/CTR	delta 1/CTR
19	1A	1.57167	0.63627	1.56733	0.63803	0.001759	1.561667	0.640342	0.004074	1.551667	0.644468	0.008201
20	1B	1.567	0.63816	1.562	0.6402	0.002043	1.556333	0.642536	0.004374	1.547	0.646412	0.00825
21	2A	1.56767	0.63789	1.56067	0.64075	0.002861	1.554667	0.643225	0.005334	1.546333	0.646691	0.0088
22	2B	1.57033	0.63681	1.56567	0.63871	0.001898	1.56	0.641026	0.004218	1.551667	0.644468	0.007661
23	3A	1.57	0.63694	1.56667	0.6383	0.001355	1.561667	0.640342	0.003399	1.553333	0.643777	0.006834
24	3B	1.557	0.64226	1.55133	0.64461	0.002346	1.544	0.647668	0.005408	1.519	0.658328	0.016067
25												
26	mean value	1.56728	0.63806	1.56228	0.6401	0.002044	1.556389	0.642523	0.004468	1.544833	0.647357	0.009302
27	sample std. dev.	0.00533	0.00218	0.00598	0.00246	0.000517	0.006711	0.002783	0.000775	0.012961	0.005499	0.00338
28	mean + Ksigma	1.58988	0.6473	1.58765	0.65053	0.004237	1.584865	0.654332	0.007756	1.599827	0.67069	0.023643
29	mean - Ksigma	1.54468	0.62881	1.53691	0.62966		1.527913	0.630714		1.48984	0.624025	
30	assumed limit	1										
31	derated limit					0.995781			0.992304			0.976903

UNBIASED DURING IRRADIATION; statistics for C = .9, P = .99

PROTON RADIATION RESULTS FOR HP HCPL-6631 OPTO-COUPLER
test date 6/30/95 at U. C. Davis

	A	B	C	D	E	F	G	H	I	J	K	L
32	CTR, 5V, If = 4 mA	initial	initial	post 20Kr	post 20Kr	post 20Kr	post 50Kr	post 50Kr	post 50Kr	post 100Kr	post 100Kr	post 100Kr
33	S/N	CTR	1/CTR	CTR	1/CTR	delta 1/CTR	CTR	1/CTR	delta 1/CTR	CTR	1/CTR	delta 1/CTR
34	1A	1.188	0.84175	1.186	0.84317	0.001419	1.1825	0.845666	0.003915	1.17675	0.849798	0.008047
35	1B	1.18475	0.84406	1.18225	0.84584	0.001785	1.17875	0.848356	0.004296	1.17325	0.852333	0.008273
36	2A	1.1855	0.84353	1.18125	0.84656	0.003035	1.178	0.848896	0.00537	1.1725	0.852878	0.009353
37	2B	1.1865	0.84282	1.18425	0.84442	0.001601	1.181	0.84674	0.003925	1.17575	0.850521	0.007706
38	3A	1.18675	0.84264	1.185	0.84388	0.001244	1.182	0.846024	0.003386	1.177	0.849618	0.00698
39	3B	1.181	0.84674	1.178	0.8489	0.002156	1.17425	0.851607	0.004867	1.167	0.856898	0.010158
40												
41	mean value	1.18542	0.84359	1.18279	0.84546	0.001874	1.179417	0.847882	0.004293	1.173708	0.852008	0.00842
42	sample std. dev.	0.00243	0.00173	0.00293	0.0021	0.00065	0.003093	0.002227	0.00072	0.003766	0.002742	0.001152
43	mean + Ksigma	1.19574	0.85095	1.19522	0.85436	0.004632	1.19254	0.857331	0.007348	1.189689	0.863641	0.013307
44	mean - Ksigma	1.1751	0.83623	1.17036	0.83656		1.166293	0.838432		1.157728	0.840375	
45	assumed limit	1										
46	derated limit					0.99539			0.992706			0.986868

UNBIASED DURING IRRADIATION; statistics for C = .9, P = .99

PROTON RADIATION RESULTS FOR HP HCPL-6631 OPTO-COUPLER
test date 6/30/95 at U. C. Davis

	A	B	C	D	E	F	G	H	I	J	K	L
47	**RAW DATA**											
48	load res = 1K ohms	If = 2 ma		If = 3 ma		If = 4 ma						
49	RAW DATA	Vo (V)	Ic (mA)	Vo (V)	Ic (mA)	Vo (V)	Ic (mA)					
50	initial 1A	0.363	4.637	0.285	4.715	0.248	4.752					
51	initial 1B	0.376	4.624	0.299	4.701	0.261	4.739					
52	initial 2A	0.382	4.618	0.297	4.703	0.258	4.742					
53	initial 2B	0.36	4.64	0.289	4.711	0.254	4.746					
54	initial 3A	0.365	4.635	0.29	4.71	0.253	4.747					
55	initial 3B	3.2	1.8	0.329	4.671	0.276	4.724					
56	post 20 KRads 1A	0.397	4.603	0.298	4.702	0.256	4.744					
57	post 20 KRads 1B	0.422	4.578	0.314	4.686	0.271	4.729					
58	post 20 KRads 2A	0.443	4.557	0.318	4.682	0.275	4.725					
59	post 20 KRads 2B	0.392	4.608	0.303	4.697	0.263	4.737					
60	post 20 KRads 3A	0.386	4.614	0.3	4.7	0.26	4.74					
61	post 20 KRads 3B	4.15	0.85	0.346	4.654	0.288	4.712					
62	post 50 Krads 1A	0.578	4.422	0.315	4.685	0.27	4.73					
63	post 50 Krads 1B	1.49	3.51	0.331	4.669	0.285	4.715					
64	post 50 Krads 2A	1.69	3.31	0.336	4.664	0.288	4.712					
65	post 50 Krads 2B	0.524	4.476	0.32	4.68	0.276	4.724					
66	post 50 Krads 3A	0.434	4.566	0.315	4.685	0.272	4.728					
67	post 50 Krads 3B	4.53	0.47	0.368	4.632	0.303	4.697					
68	post 100 Krads 1A	3	2	0.345	4.655	0.293	4.707					
69	post 100 Krads 1B	3.26	1.74	0.359	4.641	0.307	4.693					
70	post 100 Krads 2A	2.87	2.13	0.361	4.639	0.31	4.69					
71	post 100 Krads 2B	2.66	2.34	0.345	4.655	0.297	4.703					
72	post 100 Krads 3A	1.88	3.12	0.34	4.66	0.292	4.708					
73	post 100 Krads 3B	4.84	0.16	0.443	4.557	0.332	4.668					

UNBIASED DURING IRRADIATION; statistics for C = .9, P = .99