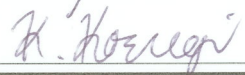


TO : LOS ALAMOS NATL LAB		Page 1 / 14 <Y>2010 <M>04 <D>15									
FINAL INSPECTION SHEET		HAMAMATSU PHOTONICS K.K. SOLID STATE DIVISION									
TypeNo.	S10938-9421(X)	Approved by									
Quantity	125	Inspected by									
Note											
☒ Order ☐ Sample ☐ Others		☒ Partial Shipment ☐ Completed Shipment									
Chip No. No.63-77,79-188 (I) For each detector. 1. We have checked I-V characteristics up to 200V of P bias . 2. We have checked capacitance of this detector at 0-200V and estimated full depletion voltage (V). 3. We have checked NG channels. Coupling capacitor short at 120V. AC AL open. AC AL short. DC NG(Isolation NG , Poly-Si resistor open) (II) Measurement from one detector per batch or test structures. 5. We have checked the value of Poly-Si resistors [MΩ] <table style="width: 100%; margin-top: 20px;"> <tr> <td style="width: 25%;">No.63-128</td> <td style="width: 15%;">Min : 1.66</td> <td style="width: 15%;">Max : 2.20</td> <td style="width: 45%;">Ave : 1.88</td> </tr> <tr> <td>No.129-188</td> <td>Min : 2.06</td> <td>Max : 2.40</td> <td>Ave : 2.25</td> </tr> </table>				No.63-128	Min : 1.66	Max : 2.20	Ave : 1.88	No.129-188	Min : 2.06	Max : 2.40	Ave : 2.25
No.63-128	Min : 1.66	Max : 2.20	Ave : 1.88								
No.129-188	Min : 2.06	Max : 2.40	Ave : 2.25								
Date Inspected: <Y> 2010 <M> 04 <D> 12											

SerialNo. : Vfd[V]:	63 55	SerialNo. : Vfd[V]:	64 55	SerialNo. : Vfd[V]:	65 55	SerialNo. : Vfd[V]:	66 55	SerialNo. : Vfd[V]:	67 55	SerialNo. : Vfd[V]:	68 55	SerialNo. : Vfd[V]:	69 55	SerialNo. : Vfd[V]:	70 55	SerialNo. : Vfd[V]:	71 55	SerialNo. : Vfd[V]:	72 55	
VR/	IdInA/	CtIpA/	VR/	IdInA/	CtIpA/	VR/	IdInA/	CtIpA/	VR/	IdInA/	CtIpA/	VR/	IdInA/	CtIpA/	VR/	IdInA/	CtIpA/	VR/	IdInA/	CtIpA/
0	0.7	20653	0	0.1	20622	0	0.1	19694	0	0.0	20223	0	0.0	20767	0	0.0	21167	0	0.1	21295
5	22.3	3005	5	22.8	2949	5	21.0	2755	5	24.2	2796	5	20.9	2816	5	18.9	2872	5	20.3	2977
10	30.4	1336	10	29.8	1331	10	27.3	1760	10	26.4	1772	10	26.9	1790	10	31.0	1817	10	26.2	1843
15	34.7	1419	15	34.1	1411	15	31.2	1367	15	30.3	1373	15	30.8	1385	15	35.2	1403	15	29.8	1422
20	37.2	1200	20	36.5	1190	20	33.7	1160	20	32.8	1162	20	33.4	1173	20	37.8	1185	20	32.2	1200
25	39.1	1054	25	38.4	1045	25	35.6	1021	25	34.6	1022	25	35.3	1031	25	39.9	1040	25	33.9	1054
30	40.5	952	30	39.9	943	30	37.2	924	30	36.2	924	30	36.9	932	30	41.6	940	30	35.4	951
35	41.8	876	35	41.3	866	35	38.6	851	35	37.6	849	35	38.4	858	35	43.1	864	35	36.7	874
40	43.1	814	40	42.7	804	40	39.9	791	40	39.0	789	40	40.5	794	40	44.5	802	40	38.0	811
45	44.0	766	45	43.8	757	45	41.0	745	45	40.0	744	45	40.8	751	45	45.6	755	45	39.0	763
50	44.9	728	50	44.7	721	50	41.9	710	50	40.9	710	50	41.8	716	50	46.6	720	50	39.9	726
55	45.6	702	55	45.5	697	55	42.8	686	55	41.8	687	55	42.6	693	55	47.6	696	55	40.6	700
60	46.3	685	60	46.3	684	60	43.5	672	60	42.6	674	60	43.4	680	60	48.4	683	60	41.4	685
65	46.9	676	65	47.0	678	65	44.3	665	65	43.3	668	65	44.2	673	65	49.1	677	65	42.1	678
70	47.5	672	70	47.6	674	70	45.0	662	70	44.0	665	70	44.8	671	70	49.8	675	70	42.7	674
75	48.1	670	75	48.3	673	75	45.6	660	75	44.6	664	75	45.5	669	75	50.5	673	75	43.3	672
80	48.6	669	80	48.9	672	80	46.2	659	80	45.2	663	80	46.2	668	80	51.1	672	80	43.9	671
85	49.1	668	85	49.5	671	85	46.8	658	85	45.8	662	85	46.8	667	85	51.8	671	85	44.5	670
90	49.7	667	90	50.0	670	90	47.4	657	90	46.4	661	90	47.4	666	90	52.4	670	90	45.0	670
95	50.1	667	95	50.6	669	95	48.0	657	95	47.0	661	95	48.0	666	95	53.0	670	95	45.5	669
100	50.6	666	100	51.1	669	100	48.5	656	100	47.5	660	100	48.6	665	100	53.5	669	100	46.0	668
105	51.1	666	105	51.7	668	105	49.1	656	105	48.1	660	105	49.1	665	105	54.1	669	105	46.5	668
110	51.5	665	110	52.2	668	110	49.6	655	110	48.6	659	110	49.6	664	110	54.6	668	110	47.0	668
115	51.9	665	115	52.6	668	115	50.1	655	115	49.1	659	115	50.1	664	115	55.2	668	115	47.4	667
120	52.4	665	120	53.1	667	120	50.5	655	120	49.6	658	120	51.5	661	120	55.7	668	120	47.9	667
125	52.8	664	125	53.6	667	125	51.0	654	125	50.0	658	125	51.1	663	125	56.1	667	125	48.3	666
130	53.2	664	130	54.1	667	130	51.5	654	130	50.5	658	130	51.6	663	130	56.6	667	130	48.7	667
135	53.6	664	135	54.5	667	135	51.9	654	135	51.0	658	135	52.1	663	135	57.1	667	135	49.2	666
140	54.0	664	140	54.9	666	140	52.4	654	140	51.4	657	140	52.5	663	140	57.5	667	140	49.6	666
145	54.3	663	145	55.3	666	145	52.8	653	145	51.8	657	145	52.9	662	145	58.0	666	145	49.9	666
150	54.7	663	150	55.8	666	150	53.2	653	150	52.3	657	150	53.4	662	150	58.5	666	150	50.3	665
155	55.1	663	155	56.2	666	155	53.6	653	155	52.6	657	155	53.8	662	155	58.9	666	155	50.7	665
160	55.4	663	160	56.6	666	160	54.0	653	160	53.0	657	160	54.2	662	160	59.3	666	160	51.1	665
165	55.7	663	165	56.9	665	165	54.4	652	165	53.4	656	165	54.6	661	165	59.7	666	165	51.4	665
170	56.1	662	170	57.3	665	170	54.8	652	170	53.8	656	170	55.0	661	170	60.1	666	170	51.8	665
175	56.4	662	175	57.7	665	175	55.2	652	175	54.2	656	175	55.4	661	175	60.5	665	175	52.1	665
180	56.8	662	180	58.1	665	180	55.5	652	180	54.6	656	180	55.8	661	180	60.9	665	180	52.4	664
185	57.1	662	185	58.4	665	185	55.9	652	185	54.9	656	185	56.1	661	185	61.2	665	185	52.8	664
190	57.4	662	190	58.8	665	190	56.2	652	190	55.3	656	190	56.5	661	190	61.6	665	190	53.1	664
195	57.7	662	195	59.2	664	195	56.6	652	195	55.6	655	195	56.8	661	195	62.0	665	195	53.4	664
200	58.0	661	200	59.5	664	200	56.9	651	200	55.9	655	200	57.2	661	200	62.3	665	200	53.7	664
			NG channels: nothing			NG channels: nothing			NG channels: nothing			NG channels: nothing			NG channels: nothing			NG channels: nothing		
			NG channels: nothing			NG channels: nothing			NG channels: nothing			NG channels: nothing			NG channels: nothing			NG channels: nothing		

NG channels:
nothing

NG channels:
nothing

NG channels:
nothing

NG channels:
nothing

NG channels:
nothing

NG channels:
nothing

NG channels:
nothing

NG channels:
nothing

NG channels:
nothing

NG channels:
nothing

SerialNo. : Vfd[V]:	94 60	95 60	96 55	97 55	98 55	99 55	100 55	101 55	102 55	103 55
VR/	VR/	VR/	VR/	VR/	VR/	VR/	VR/	VR/	VR/	VR/
Idf[nA]	Idf[nA]	Idf[nA]	Idf[nA]	Idf[nA]	Idf[nA]	Idf[nA]	Idf[nA]	Idf[nA]	Idf[nA]	Idf[nA]
Ct[pA]	Ct[pA]	Ct[pA]	Ct[pA]	Ct[pA]	Ct[pA]	Ct[pA]	Ct[pA]	Ct[pA]	Ct[pA]	Ct[pA]
0	0	0	0	0	0	0	0	0	0	0
0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.0	0.7	0.6
20961	21442	21399	21673	21087	21199	21639	21907	21907	22243	22267
5	5	5	5	5	5	5	5	5	5	5
21.7	24.8	18.7	19.0	19.4	21.9	18.2	20.3	20.3	18.6	18.0
2909	3037	2834	2800	2895	2913	2887	2901	2901	2778	2872
10	10	10	10	10	10	10	10	10	10	10
32.8	34.1	24.6	24.0	25.1	27.5	24.8	26.6	26.6	24.2	22.6
1826	1877	1802	1785	1811	1826	1825	1828	1828	1759	1797
15	15	15	15	15	15	15	15	15	15	15
37.9	39.1	28.5	27.6	29.0	30.9	28.4	29.9	29.9	27.5	25.2
1417	1455	1395	1383	1403	1413	1412	1414	1414	1363	1388
20	20	20	20	20	20	20	20	20	20	20
41.2	42.3	30.9	29.9	31.5	33.4	30.7	32.0	32.0	29.6	26.9
1202	1227	1179	1170	1187	1195	1194	1194	1194	1151	1172
25	25	25	25	25	25	25	25	25	25	25
43.8	44.8	32.7	31.7	33.3	35.3	32.4	33.6	33.6	31.6	28.5
1059	1078	1037	1028	1043	1051	1050	1049	1049	1011	1029
30	30	30	30	30	30	30	30	30	30	30
45.8	46.9	34.2	33.1	34.8	36.9	33.8	34.9	34.9	32.8	29.5
959	974	934	929	943	950	949	949	949	913	929
35	35	35	35	35	35	35	35	35	35	35
47.6	48.8	35.7	34.5	36.4	38.5	35.0	36.1	36.1	34.1	30.7
884	894	860	853	863	873	872	873	873	837	852
40	40	40	40	40	40	40	40	40	40	40
49.3	50.2	36.9	35.6	37.2	39.5	36.0	37.3	37.3	35.3	31.5
831	841	801	794	805	811	810	808	808	780	792
45	45	45	45	45	45	45	45	45	45	45
50.8	51.5	37.8	36.5	38.2	40.6	36.8	38.2	38.2	36.2	32.5
781	791	754	748	758	763	763	760	760	736	747
50	50	50	50	50	50	50	50	50	50	50
51.7	52.6	38.7	37.3	39.0	41.5	37.6	39.0	39.0	37.0	32.9
735	742	719	714	722	725	725	724	724	707	715
55	55	55	55	55	55	55	55	55	55	55
52.7	53.5	39.5	38.0	39.7	42.4	38.3	39.7	39.7	37.0	33.5
693	693	663	663	668	670	668	667	667	640	686
60	60	60	60	60	60	60	60	60	60	60
53.5	54.3	40.2	38.7	40.4	43.2	38.9	40.3	40.3	37.8	34.1
688	688	665	663	668	670	668	667	667	641	685
65	65	65	65	65	65	65	65	65	65	65
54.2	55.1	40.9	39.3	40.9	44.1	39.4	40.9	40.9	37.1	33.6
678	682	679	679	677	678	678	678	678	649	681
70	70	70	70	70	70	70	70	70	70	70
54.9	55.7	41.5	39.9	41.5	44.9	39.9	41.5	41.5	38.8	35.1
674	677	677	677	675	674	674	674	674	649	678
75	75	75	75	75	75	75	75	75	75	75
56.6	57.5	42.1	40.5	42.1	45.6	40.5	42.1	42.1	40.4	35.7
671	675	674	674	672	671	671	671	671	647	677
80	80	80	80	80	80	80	80	80	80	80
56.2	57.2	42.6	41.0	42.5	46.3	41.0	42.6	42.6	41.0	36.2
670	673	673	673	671	670	670	670	670	646	676
85	85	85	85	85	85	85	85	85	85	85
56.7	57.6	43.2	41.5	43.2	47.0	41.5	43.2	43.2	41.6	36.6
669	672	673	674	669	671	671	671	671	645	675
90	90	90	90	90	90	90	90	90	90	90
57.3	58.0	43.7	42.0	43.5	47.7	41.9	43.5	43.5	42.1	37.1
672	672	672	673	669	670	670	670	670	644	675
95	95	95	95	95	95	95	95	95	95	95
57.8	58.6	44.2	42.5	43.9	48.4	42.3	44.0	44.0	42.6	37.5
671	671	672	673	668	669	669	673	673	644	674
100	100	100	100	100	100	100	100	100	100	100
58.3	59.1	44.6	43.0	44.3	48.9	42.7	44.5	44.5	43.1	37.9
667	670	671	672	667	668	668	673	673	644	674
105	105	105	105	105	105	105	105	105	105	105
58.9	59.6	45.1	43.5	44.8	49.7	43.1	45.0	45.0	43.7	38.4
670	670	671	672	667	668	668	673	673	644	673
110	110	110	110	110	110	110	110	110	110	110
59.4	60.0	45.5	43.9	45.2	50.2	43.9	45.4	45.4	44.1	38.8
666	670	671	672	667	668	668	672	672	644	673
115	115	115	115	115	115	115	115	115	115	115
59.8	60.5	46.0	44.3	45.5	50.6	43.9	45.8	45.8	44.5	39.1
668	669	670	671	666	667	667	672	672	645	672
120	120	120	120	120	120	120	120	120	120	120
60.3	60.9	46.4	44.7	45.9	51.5	44.3	46.2	46.2	45.0	39.5
665	669	670	671	667	668	668	671	671	646	672
125	125	125	125	125	125	125	125	125	125	125
60.7	61.4	46.8	45.1	46.3	52.1	44.6	46.6	46.6	45.4	39.9
665	669	670	671	666	667	667	671	671	647	672
130	130	130	130	130	130	130	130	130	130	130
61.2	61.8	47.2	45.5	46.6	52.8	44.6	46.9	46.9	45.8	40.5
665	668	669	670	665	666	666	671	671	648	671
135	135	135	135	135	135	135	135	135	135	135
61.6	62.2	47.5	45.9	47.0	53.3	45.3	47.4	47.4	46.1	40.6
669	669	669	670	665	666	666	671	671	649	671
140	140	140	140	140	140	140	140	140	140	140
62.0	62.6	47.9	46.3	47.3	53.8	45.7	47.7	47.7	46.5	41.0
668	668	669	670	665	666	666	671	671	650	671
145	145	145	145	145	145	145	145	145	145	145
62.4	63.0	48.3	46.6	47.7	54.4	46.0	48.1	48.1	46.9	41.3
664	668	669	670	665	666	666	671	671	651	671
150	150	150	150	150	150	150	150	150	150	150
62.9	63.4	48.6	47.0	48.0	55.0	46.3	48.5	48.5	47.3	41.6
664	667	668	669	665	666	666	671	671	652	671
155	155	155	155	155	155	155	155	155	155	155
63.2	63.8	49.0	47.3	48.3	55.6	46.7	48.8	48.8	47.6	42.0
664	667	668	669	665	666	666	671	671	653	670
160	160	160	160	160	160	160	160	160	160	160
63.6	64.2	49.3	47.7	48.6	56.2	47.0	49.2	49.2	48.0	42.3
664	667	668	669	665	666	666	671	671	654	670
165	165	165	165	165	165	165	165	165	165	165
64.0	64.6	49.6	48.1	49.0	56.9	47.3	49.5	49.5	48.3	42.6
663	667	668	669	665	666	666	671	671	655	670
170	170	170	170	170	170	170	170	170	170	170
64.4	64.9	49.9	48.4	49.3	57.5	47.6	49.8	49.8	48.6	42.9
663	667	668	669	665	666	666	671	671	656	670
175	175	175	175	175	175	175	175	175	175	175
64.8	65.3	50.3	48.8	49.6	58.1	48.2	50.2	50.2	49.0	43.2
663	666	667	668	665	666	666	671	671	657	670
180	180	180	180	180	180	180	180	180	180	180
65.1	65.6	50.6	49.1	50.1	58.6	48.2	50.5	50.5	49.3	43.4
663	666	667	668	665	666	666	671	671	658	670
185	185	185	185	185	185	185	185	185	185	185
65.5	66.0	50.9	49.4	50.4	59.1	48.5	51.1	51.1	49.6	43.7
663	666	667	668	665	666	666	671	671	659	670
190	190	190	190	190	190	190	190	190	190	190
65.8	66.3	51.1	49.7	50.4	59.8	49.3	51.4	51.4	49.9	44.1
663	666	667	668	665	666	666	671	671	660	670
195	195	195	195	195	195	195	195	195	195	195
66.2	66.7	51.4	50.0	50.7	60.3	49.1	51.4	51.4	50.2	44.3
663	666	667	668	665	666	666	671	671	661	669
200	200	200	200	200	200	200	200	200	200	200
66.5	67.0	51.7	50.3	50.9	60.9	49.3	51.7	51.7	50.5	44.5
663	666	667	668	665	666	666	671	671	662	689

NG channels:
nothing

NG channels:
nothing

NG channels:
nothing

NG channels:
1039 R-leaky strip
1040 R-leaky strip

NG channels:
nothing

NG channels:
nothing

NG channels:
nothing

NG channels:
nothing

SerialNo. : Vfd[V] :	124 60	125 60	126 60	127 60	128 60	129 60	130 60	131 60	132 55	133 55	
VR/	IdInA/	CtIpA/	VR/	IdInA/	CtIpA/	VR/	IdInA/	CtIpA/	VR/	IdInA/	CtIpA/
0	0.8	21364	0	0.0	20680	0	0.8	21219	0	0.7	21679
5	17.5	3295	5	20.3	3047	5	22.8	3082	5	21.3	3055
10	23.0	1903	10	26.7	1866	10	30.6	1883	10	28.2	1881
15	26.5	1474	15	30.1	1456	15	34.8	1460	15	31.9	1457
20	28.8	1242	20	32.3	1230	20	37.7	1231	20	34.4	1228
25	30.6	1092	25	34.0	1081	25	39.8	1082	25	36.2	1079
30	32.1	985	30	35.3	975	30	41.6	977	30	38.0	974
35	33.5	905	35	36.5	896	35	43.2	897	35	39.0	895
40	34.7	841	40	37.7	833	40	44.6	834	40	40.3	832
45	35.6	791	45	38.6	782	45	45.8	784	45	41.4	782
50	36.5	751	50	39.4	744	50	46.8	744	50	42.2	742
55	37.3	720	55	40.1	713	55	47.6	715	55	42.9	713
60	38.0	699	60	40.7	694	60	48.4	695	60	43.7	694
65	38.6	686	65	41.3	683	65	49.0	682	65	44.3	683
70	39.2	679	70	41.8	678	70	49.6	676	70	44.9	678
75	39.8	675	75	42.4	675	75	50.2	674	75	45.5	676
80	40.3	673	80	42.9	673	80	50.7	672	80	46.0	674
85	40.8	671	85	43.3	672	85	51.2	671	85	46.5	673
90	41.3	670	90	43.8	671	90	51.7	670	90	47.1	673
95	41.8	670	95	44.2	671	95	52.2	670	95	47.5	672
100	42.3	669	100	44.7	670	100	52.7	669	100	48.0	672
105	42.8	669	105	45.1	670	105	53.1	669	105	48.4	671
110	43.2	668	110	45.5	669	110	53.6	668	110	48.8	671
115	43.6	668	115	45.9	669	115	54.0	668	115	49.2	670
120	44.0	668	120	46.3	668	120	54.4	667	120	49.6	670
125	44.4	667	125	46.7	668	125	54.8	667	125	50.0	670
130	44.8	667	130	47.0	668	130	55.2	667	130	50.4	670
135	45.2	667	135	47.4	668	135	55.6	667	135	50.8	669
140	45.5	667	140	47.8	668	140	56.0	666	140	51.1	669
145	45.9	666	145	48.1	667	145	56.3	666	145	51.5	669
150	46.2	666	150	48.5	667	150	56.7	666	150	52.0	669
155	46.6	666	155	48.8	667	155	57.1	666	155	52.3	668
160	46.9	666	160	49.1	667	160	57.4	666	160	52.5	668
165	47.2	666	165	49.4	667	165	57.8	665	165	52.8	668
170	47.5	665	170	49.7	666	170	58.1	665	170	53.2	668
175	47.9	665	175	50.0	666	175	58.4	665	175	53.5	668
180	48.1	665	180	50.3	666	180	58.7	665	180	53.8	668
185	48.5	665	185	50.6	666	185	59.1	665	185	54.1	668
190	48.7	665	190	50.9	666	190	59.4	665	190	54.4	667
195	49.0	665	195	51.2	666	195	59.7	665	195	54.7	667
200	49.3	665	200	51.5	666	200	60.0	665	200	55.0	667
NG channels: nothing			NG channels: nothing			NG channels: nothing			NG channels: nothing		
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NG channels: nothing			NG channels: nothing			NG channels: nothing			NG channels: nothing		
NG											

SerialNo.: 134
Vfd[V]: 55

VR/	Id[InA]	Ct[IpA]
0	0.7	21209
5	21.8	3017
10	28.2	1886
15	31.8	1458
20	34.2	1225
25	35.9	1074
30	37.4	988
35	38.7	889
40	40.1	825
45	41.1	775
50	42.0	736
55	43.6	708
60	43.6	692
65	44.3	684
70	45.0	680
75	45.6	678
80	46.3	677
85	46.9	676
90	47.4	675
95	48.1	675
100	48.6	674
105	49.1	674
110	49.6	673
115	50.1	673
120	50.6	673
125	51.1	672
130	51.6	672
135	52.1	672
140	52.5	672
145	53.0	671
150	53.4	671
155	53.9	671
160	54.3	671
165	54.7	671
170	55.1	670
175	55.5	670
180	55.9	670
185	56.3	670
190	56.7	670
195	57.1	670
200	57.5	670

NG channels:
nothing

SerialNo.: 135
Vfd[V]: 55

VR/	Id[InA]	Ct[IpA]
0	0.6	21819
5	20.4	2984
10	26.3	1878
15	29.5	1449
20	31.8	1218
25	33.4	1068
30	34.9	962
35	35.9	883
40	37.2	820
45	38.3	771
50	39.0	732
55	39.9	706
60	40.6	691
65	41.2	684
70	42.0	680
75	42.6	679
80	43.1	678
85	43.7	676
90	44.3	676
95	44.8	675
100	45.5	675
105	46.1	674
110	46.5	674
115	46.9	673
120	47.4	673
125	47.9	673
130	48.4	672
135	49.0	672
140	49.3	672
145	49.7	672
150	50.2	671
155	50.6	671
160	51.1	671
165	51.5	671
170	51.9	671
175	52.3	671
180	52.7	670
185	53.1	670
190	53.4	670
195	53.9	670
200	54.2	670

NG channels:
849-R Coupling short

SerialNo.: 136
Vfd[V]: 55

VR/	Id[InA]	Ct[IpA]
0	0.7	21515
5	23.7	3036
10	30.7	1886
15	33.9	1457
20	36.3	1225
25	37.9	1074
30	39.2	968
35	40.4	889
40	41.8	825
45	42.6	775
50	43.4	737
55	44.2	709
60	44.9	693
65	45.6	685
70	46.2	681
75	46.8	679
80	47.4	678
85	48.0	677
90	48.5	676
95	49.1	675
100	49.6	675
105	50.1	674
110	50.6	674
115	51.1	674
120	51.6	673
125	52.0	673
130	52.5	673
135	52.9	672
140	53.4	672
145	53.8	672
150	54.2	672
155	54.6	671
160	55.1	671
165	55.5	671
170	55.9	671
175	56.3	671
180	56.6	670
185	57.0	670
190	57.4	670
195	57.8	670
200	58.1	670

NG channels:
nothing

SerialNo.: 137
Vfd[V]: 55

VR/	Id[InA]	Ct[IpA]
0	0.6	21438
5	21.0	2787
10	26.6	1777
15	30.0	1376
20	32.2	1161
25	33.8	1018
30	35.2	919
35	36.5	843
40	37.6	785
45	38.5	740
50	39.4	710
55	40.2	692
60	40.9	684
65	41.6	680
70	42.2	678
75	42.9	677
80	43.5	676
85	44.1	675
90	44.6	675
95	45.2	674
100	45.7	674
105	46.3	673
110	46.8	673
115	47.3	673
120	47.8	672
125	48.2	672
130	48.7	672
135	49.1	672
140	49.6	671
145	50.0	671
150	50.4	671
155	50.9	671
160	51.3	671
165	51.7	671
170	52.1	670
175	52.5	670
180	52.9	670
185	53.2	670
190	53.6	670
195	54.0	670
200	54.3	670

NG channels:
nothing

SerialNo.: 138
Vfd[V]: 55

VR/	Id[InA]	Ct[IpA]
0	0.7	21479
5	20.6	2779
10	26.1	1763
15	29.2	1370
20	31.4	1158
25	33.0	1018
30	34.3	920
35	35.6	845
40	36.8	787
45	37.7	742
50	38.5	711
55	39.3	693
60	40.0	684
65	40.7	681
70	41.3	679
75	42.0	678
80	42.6	676
85	43.2	676
90	43.7	675
95	44.3	674
100	44.8	674
105	45.4	674
110	45.9	673
115	46.4	673
120	46.8	673
125	47.3	672
130	47.8	672
135	48.3	672
140	48.7	672
145	49.1	671
150	49.6	671
155	50.0	671
160	50.4	671
165	50.8	671
170	51.2	670
175	51.6	670
180	52.0	670
185	52.4	670
190	52.7	670
195	53.1	670
200	53.4	670

NG channels:
nothing

SerialNo.: 139
Vfd[V]: 55

VR/	Id[InA]	Ct[IpA]
0	0.7	21402
5	23.4	2831
10	30.1	1804
15	33.3	1397
20	35.7	1179
25	37.2	1034
30	38.6	933
35	39.9	855
40	41.2	798
45	42.1	750
50	43.0	717
55	43.9	696
60	44.8	686
65	45.6	681
70	46.4	679
75	47.1	678
80	47.8	677
85	48.6	676
90	49.5	675
95	50.3	675
100	50.9	674
105	51.8	674
110	52.6	674
115	53.4	673
120	54.7	673
125	55.3	673
130	56.1	672
135	57.1	672
140	58.0	672
145	59.2	671
150	60.4	671
155	61.6	671
160	62.4	671
165	62.5	671
170	63.8	671
175	64.3	670
180	65.8	670
185	67.0	670
190	67.7	670
195	69.7	670
200	70.7	670

NG channels:
nothing

SerialNo.: 140
Vfd[V]: 60

VR/	Id[InA]	Ct[IpA]
0	0.7	21917
5	22.7	3248
10	29.4	1910
15	33.2	1472
20	36.1	1241
25	38.1	1087
30	39.7	980
35	41.1	899
40	42.5	834
45	43.5	783
50	44.5	743
55	45.4	714
60	46.1	695
65	46.9	686
70	47.6	681
75	48.3	678
80	48.9	677
85	49.5	676
90	50.1	675
95	50.7	674
100	51.3	674
105	51.9	673
110	52.4	673
115	53.0	672
120	53.5	672
125	54.0	672
130	54.5	671
135	55.0	671
140	55.5	671
145	56.0	671
150	56.4	671
155	56.9	670
160	57.3	670
165	57.7	670
170	58.1	670
175	58.6	670
180	59.0	669
185	59.4	669
190	59.8	669
195	60.2	669
200	60.6	669

NG channels:
nothing

SerialNo.: 141
Vfd[V]: 60

VR/	Id[InA]	Ct[IpA]
0	0.0	21916
5	20.2	3258
10	27.3	1912
15	31.0	1473
20	33.6	1242
25	35.7	1090
30	37.0	983
35	38.4	903
40	39.7	838
45	40.7	787
50	41.7	746
55	42.6	717
60	43.3	697
65	44.1	686
70	44.8	681
75	45.4	678
80	46.3	677
85	46.7	676
90	47.5	675
95	47.9	674
100	48.4	674
105	49.0	673
110	49.6	673
115	50.1	673
120	50.6	672
125	51.1	672
130	51.6	672
135	52.0	671
140	52.5	671
145	53.0	671
150	53.4	671
155	53.9	670
160	54.3	670
165	54.7	670
170	55.2	670
175	55.6	670
180	56.0	670
185	56.4	669
190	56.8	669
195	57.2	669
200	57.6	669

NG channels:
nothing

SerialNo.: 142
Vfd[V]: 60

VR/	Id[InA]	Ct[IpA]
0	0.4	21945
5	38.2	3133
10	51.9	1905
15	62.1	1468
20	67.9	1236
25	72.0	1083
30	74.7	976
35	76.6	895
40	78.3	830
45	79.1	780
50	80.0	740
55	80.4	711
60	81.8	693
65	82.0	684
70	82.7	680
75	82.8	678
80	82.9	677
85	82.6	676
90	82.6	675
95	82.9	675
100	83.2	674
105	83.2	674
110	83.5	673
115	84.6	673
120	84.9	672
125	85.4	672
130	86.1	672
135	86.7	672
140	87.5	671
145	88.0	671
150	88.6	671
155	89.7	671
160	89.9	670
165	90.4	670
170	91.1	670
175	91.8	670
180	92.7	670
185	93.5	670
190	94.2	670
195	94.9	669
200	95.5	669

NG channels:
1580 R-leaky strip

SerialNo.: 143
Vfd[V]: 55

VR/	Id(InA)	Ct(IpA)
0	0	21757
5	37.2	2809
10	50.4	1839
15	56.9	1421
20	61.7	1198
25	64.8	1050
30	67.5	947
35	69.7	869
40	71.8	807
45	73.5	759
50	74.9	724
55	76.1	701
60	77.1	689
65	78.1	683
70	79.0	681
75	79.8	679
80	80.6	678
85	81.4	677
90	82.1	677
95	82.8	676
100	83.6	676
105	84.3	675
110	84.9	675
115	85.6	674
120	86.3	674
125	86.9	674
130	87.5	674
135	88.1	673
140	88.7	673
145	89.2	673
150	89.8	673
155	90.4	672
160	91.0	672
165	91.5	672
170	92.0	672
175	92.5	672
180	93.1	672
185	93.6	671
190	94.1	671
195	94.6	671
200	95.1	671

SerialNo. : Vfd[V];	184 60	SerialNo. : Vfd[V];	185 55	SerialNo. : Vfd[V];	186 55	SerialNo. : Vfd[V];	187 55	SerialNo. : Vfd[V];	188 55		
VR/	Id[In]	Ct[IpA]	VR/	Id[In]	Ct[IpA]	VR/	Id[In]	Ct[IpA]	VR/	Id[In]	Ct[IpA]
0	0.6	21951	0	0.6	22382	0	0.7	22314	0	0.7	22311
5	24.6	3120	5	22.4	2927	5	24.6	2990	5	21.7	2903
10	31.7	1899	10	28.9	1836	10	31.8	1851	10	28.1	1835
15	34.9	1487	15	32.6	1421	15	35.4	1437	15	32.0	1421
20	37.3	1237	20	35.1	1197	20	37.9	1207	20	34.4	1198
25	39.0	1085	25	36.9	1050	25	39.7	1059	25	36.2	1050
30	40.4	978	30	38.4	947	30	41.2	955	30	37.6	947
35	41.6	897	35	39.8	869	35	42.8	877	35	39.0	870
40	42.9	832	40	41.2	807	40	43.9	814	40	40.4	808
45	43.9	781	45	42.3	759	45	45.0	768	45	41.4	760
50	44.8	741	50	43.1	724	50	45.9	729	50	42.3	724
55	45.6	712	55	44.0	701	55	46.7	704	55	43.2	701
60	46.4	694	60	44.8	688	60	47.5	690	60	44.0	688
65	47.0	684	65	45.5	681	65	48.3	683	65	44.7	682
70	47.7	680	70	46.2	678	70	49.0	679	70	45.4	680
75	48.3	677	75	46.9	676	75	49.6	677	75	46.1	678
80	48.9	676	80	47.6	675	80	50.3	678	80	46.8	677
85	49.5	675	85	48.2	674	85	50.9	675	85	47.4	676
90	50.1	674	90	48.8	674	90	51.6	675	90	48.0	676
95	50.6	674	95	49.5	673	95	52.1	674	95	48.6	675
100	51.1	673	100	50.0	673	100	52.7	673	100	49.2	675
105	51.7	673	105	50.6	672	105	53.2	673	105	49.8	674
110	52.2	672	110	51.2	672	110	53.8	673	110	50.3	674
115	52.6	672	115	51.7	671	115	54.3	672	115	50.9	673
120	53.1	671	120	52.2	671	120	54.8	672	120	51.4	673
125	53.6	671	125	52.7	671	125	55.3	672	125	51.9	673
130	54.1	671	130	53.2	671	130	55.8	671	130	52.4	673
135	54.5	671	135	53.7	670	135	56.2	671	135	52.9	672
140	55.0	670	140	54.2	670	140	56.7	671	140	53.4	672
145	55.4	670	145	54.6	670	145	57.2	671	145	53.9	672
150	55.8	670	150	55.1	670	150	57.6	670	150	54.3	672
155	56.2	670	155	55.5	669	155	58.1	670	155	54.8	671
160	56.7	669	160	56.0	669	160	58.5	670	160	55.2	671
165	57.1	669	165	56.4	669	165	58.9	670	165	55.7	671
170	57.4	669	170	56.8	669	170	59.4	670	170	56.1	671
175	57.9	669	175	57.2	669	175	59.8	669	175	56.5	671
180	58.2	669	180	57.6	669	180	60.1	669	180	56.9	671
185	58.6	669	185	58.0	669	185	60.5	669	185	57.3	670
190	59.0	669	190	58.4	668	190	60.9	669	190	57.7	670
195	59.3	669	195	58.8	668	195	61.3	669	195	58.1	670
200	59.7	668	200	59.2	668	200	61.7	669	200	58.4	670
NG channels: nothing			NG channels: nothing			NG channels: nothing			NG channels: nothing		

HANDLING PRECAUTIONS for BARE CHIP TYPE LARGE AREA PHOTODIODE

Solid State Photodiode in bare chip form requires a special handling to avoid damages of the unprotected photosensitive surface. Because, the surface of Silicon chip is very sensitive against external force and contamination.

Silicon chip of the bare chip type photodiode doesn't have any protection on the photosensitive surface. Therefore, it is necessary to be careful to avoid any contamination or damage to the silicon chip.

Storage/ Environmental Conditions;

- * Never touch the bare chip surface.
- * Store and use under normal temperature and humidity.
- * Never cause dew point of moisture.

Handling;

- * Never touch the bare chip surface.
- * Handle in clean room only.
- * Wear clean mask and clean gloves.
- * Use plastic wide tipped and anti-electrostatic tweezers.
- * Remove dirt by air-blower.

<< Storage and Environmental Precautions >>

Temperature and Humidity;

- * It is preferable to store the bare chip in clean place and under normal temperature and humidity (15 °C to 35 °C, 45 % to 75 %). Please don't store in high temperature and humidity environment.
- * In case that the temperature is changed rapidly, there is possibility to cause dew point of moisture on the photo-diode. Please don't apply such temperature changes.

Atmospheric Conditions;

- * Please don't store the bare chip in dusty or gassy (with erosion gas, etc) places.

Storage Method;

- * Please don't stack the photodiode directly during storage.
- * Please don't use container which is static electricity.

Handling Precautions

General Handling Precautions:

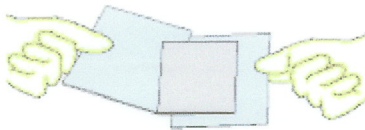
- * Silicon is hard, but fragile and easy to chip. If the crack caused by chipping reaches to the junction area (near Photo-sensitive area or electrode pattern), the dark current is increased extremely. Therefore, don't drop the chip and touch with hard or sharp materials.
- * If ionized material sticks on the silicon chip, the ion affects to photodiode P/N junction through the SiO₂ layer and deteriorates the characteristics. Because, the ion can move easily in the SiO₂ layer. So the current/voltage characteristic is changed with time. Therefore, it is very important to keep clean the silicon chip.

Assembly Process:

- * Surface of the silicon chip is very sensitive. So it is necessary to handle the chip in clean room and or clean bench with clean mask and clean gloves during assembly process.
- * Please don't put solder chips, etc on the silicon chip during soldering process.

Photodiode Shipped in Chip Form:

- * In case to grasp the photodiode chip by using tweezers, etc, please keep clean and handle softly.
- * The chip is easily scratched by hard metal tweezers, and it causes some damages. Please use wide tipped plastic tweezers.
- * The chip is sometimes damaged by static electricity. Please use the tweezers after remove electricity.
- * If PD is handled by the vacuum wand, please take attention so that the chip surface will not be damaged. The damaged chip surface may cause failure of photodiode.
- * It is also possible to handle PD by using of the dust-proof paper to be attached with the delivered chip.
As shown by following sketch, if 2 pieces of the dust-proof paper in each hand hold the back side of PD chip, it is possible to move the chip.



Cleaning:

- * If the chip is contaminated by some reasons, it should be removed by clean air-blow.
- * It is basically not good to wipe the dirt off from the silicon chip.
However, in unavoidable case to remove the dirt, please wipe the dirt off softly by using cotton with ethyl alcohol.