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Test Results for C30642 LSC Diode Elements

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1 Introduction

Measurements were taken to quantify series capacitance and series resistance for the C30642 InGAs, 2mm photodiodes used in the LSC RF Photodetector. Data taken in January of 2003 is included for comparison.

All measurements were taken using an HP4195A and associated Impedance Test Adapter. The data was taken at 24.5 MHz with 7 volts reverse bias applied

2 Diodes from LHO and LLO, November 2004

| Serial Number | Series Capacitance (pF) | Series Resistance, Ohms |
|------------------|-------------------------|-------------------------|
| A6578 | 105 | 11.9 |
| A6579 | 105 | 11.4 |
| A6580 | 105 | 11.6 |
| A6581 | 106 | 10.8 |
| A6582 | 105 | 11.8 |
| A6584 | 108 | 10.9 |
| A6585 | 106 | 11.3 |
| A6590 | 105 | 11.5 |
| A6591 | 105 | 11.7 |
| A6592 | 105 | 11.6 |
| A6594 | 107 | 10.6 |
| A6595 | 106 | 11.3 |
| A6596 | 105 | 11.4 |
| A6598 | 107 | 10.9 |
| A6603 | 107 | 10.6 |
| A6604 | 106 | 11.5 |
| A6605 | 107 | 10.7 |
| A6606 | 105 | 11.9 |
| A6607 | 106 | 11.1 |
| Average | 105.8421053 | 11.28947368 |
| Std. Dev. | 0.932633955 | 0.420394222 |

3 C30642 Diodes from CIT measured in January 2003

| Serial Number | Series Capacitance (pF) | Series Resistance, Ohms |
|-----------------|-------------------------|-------------------------|
| Cut off | 137 | 7.6 |
| Cut off | 138 | 7.4 |
| Cut off | 69 | 15.4 |
| Cut off | 138 | 7.5 |
| Cut off | 138 | 7.6 |
| Cut off | 138 | 7.4 |
| Cut off | 137 | 7.3 |
| A5890 | 139 | 7.5 |
| A5898 | 139 | 9.1 |
| A2486 | 95 | 11.6 |
| A5897 | 139 | 7.4 |
| Cut off | 136 | 8.8 |
| A5910 | 138 | 7.6 |
| A5947 | 137 | 7.4 |
| Average | 129.8571429 | 8.542857143 |
| Std. Dev | 20.16311039 | 2.209626434 |

4 GAP2000 Diodes measured in January 2003. Units have no serial numbers

| Capacitance | Resistance |
|-------------|------------|
| 193 | 9.5 |
| 211 | 8.8 |
| 209 | 9.1 |
| 202 | 8.9 |
| 205 | 8.9 |
| 200 | 9 |
| 200 | 8.6 |
| 191 | 8.4 |
| 197 | 8.5 |
| 201 | 8.9 |
| 215 | 8.7 |
| 192 | 8.4 |
| 192 | 8.5 |
| 197 | 8.5 |
| 201 | 8.9 |
| 191 | 8.5 |
| 195 | 8.4 |
| 192 | 8.2 |
| 189 | 8.3 |
| 189 | 8.3 |
| 195 | 8.5 |
| 196 | 8.5 |
| 191 | 8.4 |
| 199 | 8.5 |
| 197 | 8.7 |
| 197 | 8.5 |
| 202 | 8.7 |
| 190 | 8.4 |
| 189 | 8.3 |
| 192 | 8.4 |

| | |
|-----|-----|
| 201 | 8.6 |
| 211 | 8.9 |
| 197 | 8.5 |
| 200 | 8.9 |
| 192 | 8.5 |
| 206 | 8.7 |
| 199 | 8.9 |
| 215 | 8.7 |
| 214 | 8.6 |
| 198 | 8.8 |
| 196 | 8.8 |
| 191 | 8.6 |
| 195 | 8.7 |
| 213 | 9.2 |
| 200 | 9.3 |
| 213 | 9.1 |

5 C30462 Capacitance vs Voltage Ser. Number A5437. 116pF, 13 Ohms

