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REFERENCE: Electro Migration Resistance Test (CAF) performed on N4000-13 coupons. Coupons manufactured according to Sun Microsystems design for Park Nelco by Speedy Circuits.

REQUIREMENTS: CAF resistance test performed per Tellabs method GR-78-CORE PAR. 13.1.5.

METHOD: Wire the CAF coupons per Sun Microsystem Test Vehicle #1, CAF TV1 6/15/00.

Place the terminated coupons in the chamber. Rout wires through to the outside of the chamber.

Close the chamber and allow the coupons to stabilize for 96 hours @ 65°C ± 1°C and 85% ± 1 RH. No voltage.

After a 96-hour stabilization period the initial insulation resistance measurements shall be made using 100V DC. Record resistance measurements ($IR_{initial}$).

Connect the samples to a power supply with a 1MΩ current limiting resistor in-circuit, and supply 10V DC for the duration of the test.

Every 125 hours disconnect the power supply and repeat resistance measurements while still in chamber.

Reconnect power supply and repeat until 500 hours of test is completed. Record the final insulation resistance measurement (IR_{final})

A passing coupon shall be determined according to the following formula.

$$\text{Pass} = \log IR_{initial} - \log_{final} IR \leq 1$$

RESULTS: At 500 hours there was one failure on one of the three coupons. When this coupon was reconditioned to room temperature the insulation resistance of this circuit returned to normal. Additionally, crosssectioning of the failed area did not reveal any evidence of filament formation. All three coupons are considered to pass 500 hours of insulation resistance testing.

DATA:

Date	01/16/01	01/19/01	01/23/01	01/26/01	01/29/01	02/02/01	02/06/01	02/12/01	
Hours	Ambient	0	96	168	240	336	432	576	
ID	-13 std red								
A1R	3.E+10	4.E+07	1.E+08	1.E+08	1.E+09	4.E+10	9.E+07	7.E+07	-0.24
A2Y	2.E+11	6.E+07	1.E+08	1.E+08	3.E+09	8.E+09	1.E+08	9.E+07	-0.18
A3B	2.E+11	5.E+07	6.E+07	7.E+07	3.E+09	2.E+09	1.E+08	7.E+07	-0.15
A4G	1.E+10	3.E+07	5.E+07	4.E+08	3.E+09	3.E+11	1.E+08	7.E+07	-0.37
B1Y	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	0.00
B2B	1.E+11	1.E+07	4.E+07	4.E+07	4.E+09	1.E+11	9.E+07	2.E+07	-0.30
B3G	1.E+11	3.E+07	7.E+07	4.E+07	3.E+09	3.E+11	8.E+07	2.E+07	0.18
B4BK	1.E+11	3.E+07	1.E+08	5.E+07	1.E+10	3.E+11	9.E+07	4.E+07	-0.12
C1B	1.E+11	3.E+08	5.E+08	2.E+08	7.E+10	2.E+11	2.E+07	3.E+07	1.00
C2G	1.E+11	5.E+08	1.E+09	5.E+11	2.E+11	2.E+09	1.E+09	6.E+08	-0.08
C3BK	3.E+11	4.E+08	1.E+09	5.E+11	2.E+11	2.E+09	9.E+08	5.E+08	-0.10
C4R	2.E+11	6.E+08	1.E+09	1.E+09	2.E+11	2.E+09	1.E+09	7.E+08	-0.07
D1G	1.E+11	2.E+08	1.E+09	5.E+11	2.E+11	1.E+09	1.E+09	6.E+08	-0.48
D2BK	1.E+11	2.E+08	2.E+09	5.E+11	5.E+11	2.E+09	1.E+09	9.E+08	-0.65
ID	-13 std white/blue								
A1R	1.E+10	1.E+10	2.E+10	5.E+07	5.E+07	5.E+07	4.E+11	5.E+11	-1.70
A2Y	1.E+10	1.E+10	8.E+10	6.E+07	6.E+07	7.E+07	5.E+11	6.E+11	-1.78
A3B	3.E+11	2.E+11	7.E+10	6.E+11	6.E+07	7.E+07	5.E+11	5.E+11	-0.40
A4G	1.E+11	4.E+11	5.E+10	6.E+11	5.E+07	7.E+07	5.E+11	5.E+11	-0.10
B1Y	4.E+09	2.E+11	7.E+11	6.E+11	5.E+11	6.E+07	5.E+11	6.E+11	-0.48
B2B	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	0.00
B3G	1.E+11	6.E+11	7.E+11	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	11.78
B4BK	1.E+11	4.E+11	7.E+11	6.E+11	7.E+07	8.E+09	5.E+11	5.E+11	-0.10
C1B	2.E+11	5.E+11	7.E+11	3.E+11	5.E+11	4.E+08	5.E+11	5.E+11	0.00
C2G	1.E+11	6.E+11	7.E+11	4.E+11	9.E+08	8.E+08	5.E+11	5.E+11	0.08
C3BK	1.E+11	5.E+11	7.E+11	7.E+11	9.E+08	5.E+08	5.E+11	5.E+11	0.00
C4R	1.E+11	5.E+11	7.E+11	5.E+11	4.E+08	3.E+08	5.E+11	5.E+11	0.00
D1G	1.E+11	7.E+11	7.E+11	3.E+11	5.E+11	1.E+09	6.E+11	6.E+11	0.07
D2BK	1.E+11	6.E+11	7.E+11	5.E+11	4.E+11	1.E+09	5.E+11	5.E+11	0.08
ID	-13 std red/blue								
A1R	1.E+10	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	0.00
A2Y	1.E+10	4.E+07	8.E+07	8.E+07	4.E+07	4.E+07	2.E+08	3.E+07	0.12
A3B	1.E+11	4.E+07	1.E+08	9.E+07	8.E+07	9.E+07	1.E+08	8.E+07	-0.30
A4G	1.E+11	4.E+07	1.E+08	1.E+08	9.E+07	1.E+08	1.E+08	4.E+07	0.00
B1Y	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	0.00
B2B	1.E+10	1.E+07	5.E+07	3.E+07	4.E+07	4.E+07	7.E+07	5.E+07	-0.70
B3G	1.E+11	3.E+07	1.E+08	6.E+10	7.E+07	7.E+07	1.E+08	6.E+07	-0.30
B4BK	1.E+10	5.E+07	1.E+08	9.E+07	9.E+07	9.E+07	1.E+08	7.E+07	-0.15
C1B	1.E+11	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	1.E+00	0.00
C2G	1.E+11	1.E+08	6.E+08	6.E+08	2.E+08	7.E+08	1.E+09	6.E+08	-0.78
C3BK	1.E+11	7.E+08	1.E+09	1.E+09	1.E+09	1.E+09	1.E+09	7.E+08	0.00
C4R	1.E+11	5.E+08	2.E+09	1.E+09	1.E+09	1.E+09	1.E+09	5.E+08	0.00
D1G	1.E+11	3.E+08	6.E+08	2.E+08	3.E+08	2.E+08	3.E+08	1.E+08	0.48
D2BK	1.E+11	7.E+08	2.E+09	1.E+09	1.E+09	1.E+09	2.E+09	1.E+09	-0.15