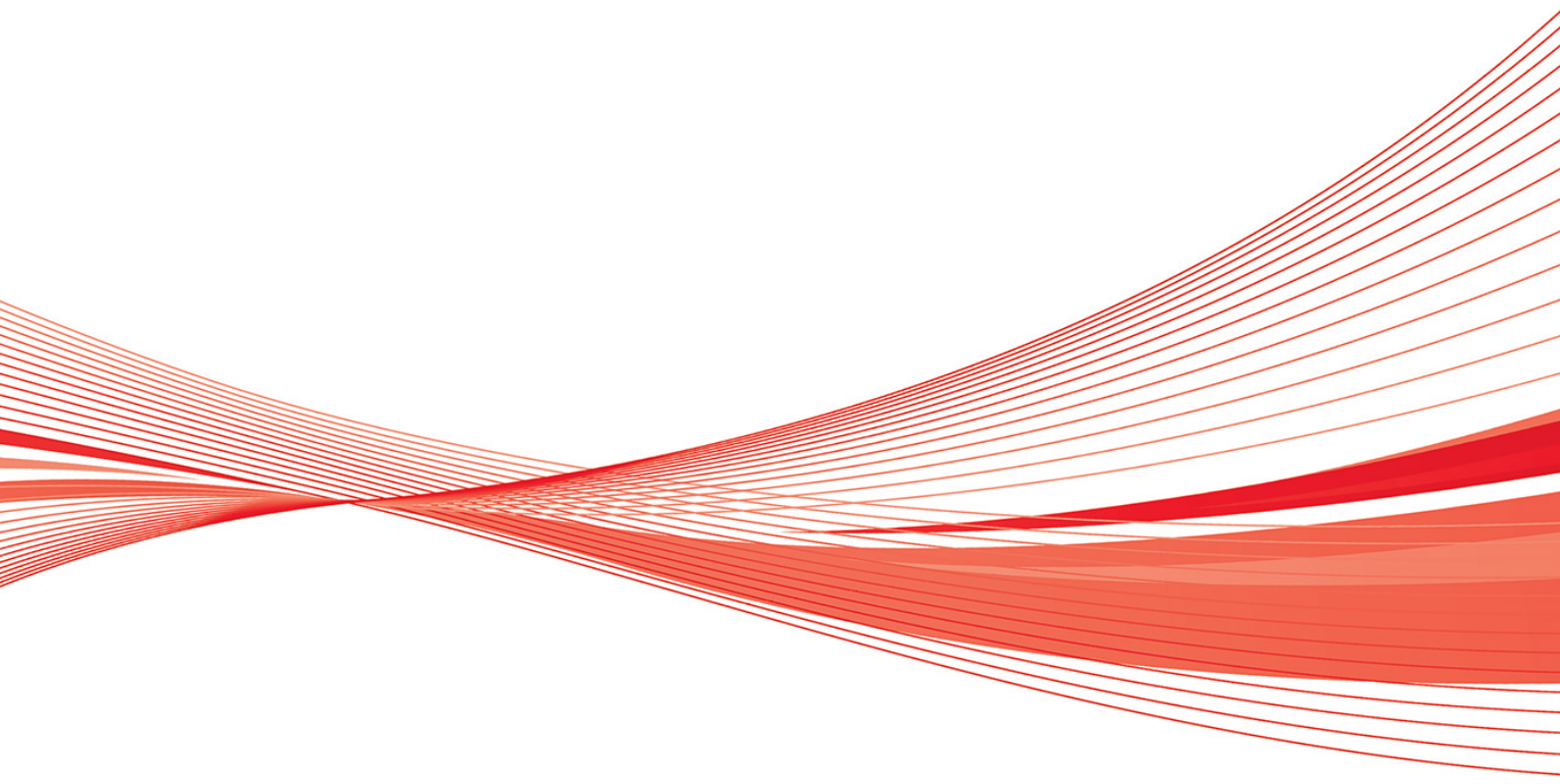
Harwin Test Report Summary

HT06901

Gecko Cable Assembly
Backpotting Temperature Testing



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1. Introduction.

1.1. Description and Purpose.

The purpose of this test is to validate the current maximum operating temperature of Gecko (G125 series) cable assemblies with regards to the epoxy resin (Stycast 2651MM with Catalyst 9) used for backpotting. The manufacturer of this epoxy compound mixture currently rates it for continuous use at +120°C and intermittent use at +150°C.

1.2. Conclusion.

The following data has been collated from Harwin test report 1884. This testing showed that there were no identifiable changes to the epoxy resin compound once testing had been completed at higher temperatures. Note, the green housings turn black after extended temperature exposure – this is a known effect and does not affect the properties of the material.

2. Test Method, Requirements and Results.

2.1. List of Test Samples.

a) G125-MC10605L4-0300M – Gecko Male to Male Crimp Cable Assembly, 6-contact
b) G125-FC11005L0-0150F – Gecko Female to Female Crimp Cable Assembly, 10-contact
c) G125-FC11205L0-0150F – Gecko Female to Female Crimp Cable Assembly, 12-contact
d) G125-FC11605L0-0150F – Gecko Female to Female Crimp Cable Assembly, 16-contact
e) G125-FC12005L0-0300F – Gecko Female to Female Crimp Cable Assembly, 20-contact
f) G125-MC12605L4-0150F – Gecko Male to Female Crimp Cable Assembly, 26-contact
g) G125-FC13405F1-0300F1 – Gecko-SL Female to Female Crimp Cable Assembly, 34-contact
h) G125-FC15005F1-0300F1 – Gecko-SL Female to Female Crimp Cable Assembly, 50-contact

2.2. Specification Parameters.

The performed testing required an Operating Temperature Range = -65°C to +150°C (In accordance with EIA-364-17B:2000 – Method A, Test Condition 10 and Test Time Conditions A, B and D).

2.3. Test Method and Results

a) Elevated temperature

The 6-positon cable assembly (G125-MC10606L4-0300M) and 50-position cable assembly (G125-FC105005F1-0300F1) were initially placed within an industrial oven at +150°C and elevated to +190°C max. over a period of 10 hours. The samples were visually inspected prior to testing to identify any imperfections. They were then re-inspected visually at each 10 degree temperature rise, and once the testing had been completed. No significant visual changes were noted.

Cable Assembly	1 hour, +150°C	1 hour, +160°C	2 hours, +170°C	2 hours, +180°C	2 hours, +190°C
G125-MC10605L4-0300M	PASS	PASS	PASS	PASS	PASS
G125-FC15005F1-0300F1	PASS	PASS	PASS	PASS	PASS

b) Extended temperature exposure

To ensure the aable assemblies are capable of withstanding the temperature requirements of the Gecko Component Specification C125XX, the samples were subjected to +150°C for 100, 250 and 1000 hours.

A visual inspection was carried out before and after each test to determine if the potting compound had deformed or changed significantly as a result of the temperature testing.

The compound appearance became dull but remained uncracked and unblistered.

Cable Assembly	100 hours, +150°C
G125-FC11005L0-0150F	PASS
G125-FC11205L0-0150F	PASS
G125-FC11605L0-0150F	PASS
G125-FC12005L0-0300F	PASS
G125-MC12605L4-0150F	PASS
G125-FC13405F1-0300F1	PASS

Cable Assembly	250 hours, +150°C
G125-FC11005L0-0150F	PASS
G125-FC11205L0-0150F	PASS
G125-FC11605L0-0150F	PASS
G125-FC12005L0-0300F	PASS
G125-MC12605L4-0150F	PASS
G125-FC13405F1-0300F1	PASS

Cable Assembly	1000 hours, +150°C
G125-FC11005L0-0150F	PASS
G125-FC11205L0-0150F	PASS
G125-FC11605L0-0150F	PASS
G125-FC12005L0-0300F	PASS
G125-MC12605L4-0150F	PASS
G125-FC13405F1-0300F1	PASS

Figure 1– Arrangement of samples within the Industrial Oven.

Figure 2– G125-FC12005L0-0300F prior to testing.

Figure 3– G125-FC12005L0-0300F after 100 hours at +150°C.

Figure 4 – G125-FC11605L0-0150F prior to testing.

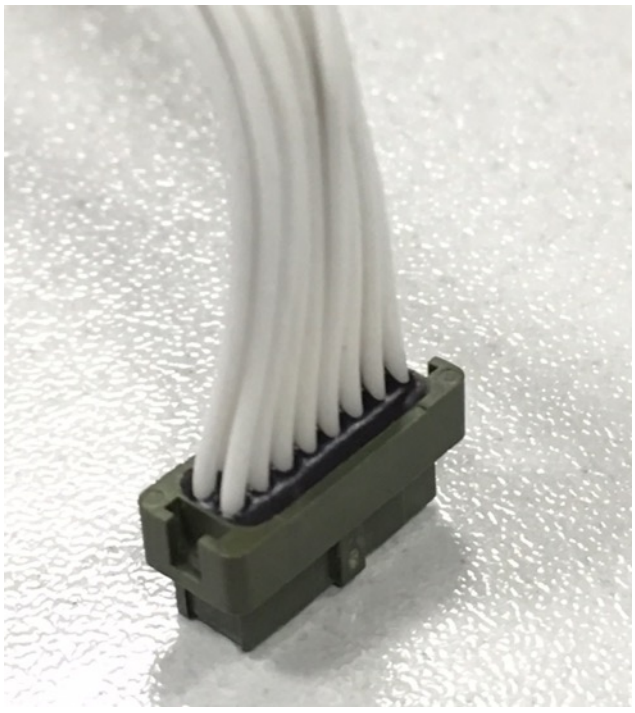

Figure 5 – G125-FC11605L0-0150F after 250 hours at +150°C.

Figure 6– G125-FC13405F1-0300F1 prior to testing.

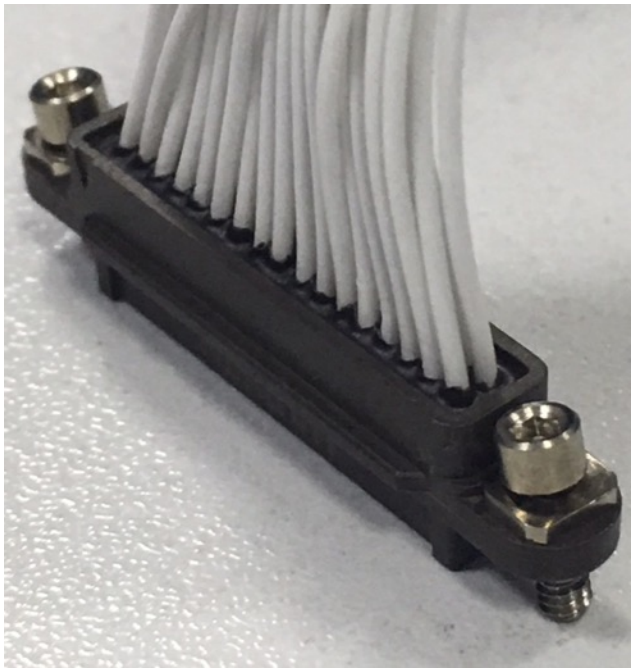

Figure 7– G125-FC13405F1-0300F1 after 1000 hours at +150°C.

Figure 8 – G125-FC12605F1-0150F prior to testing.

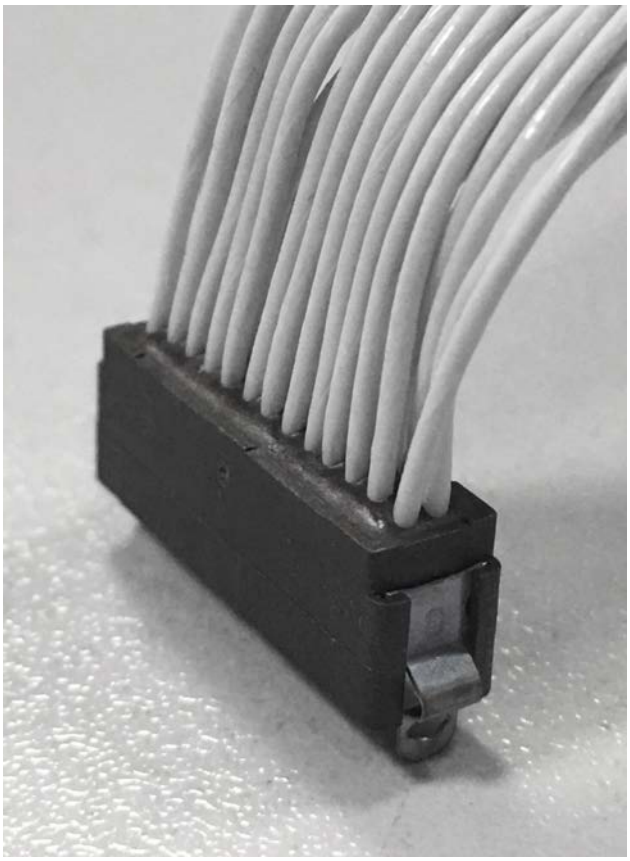

Figure 9 – G125-FC12605F1-0150F after 1000 hours at +150°C.