Durafuse® HR

A high-reliability alloy that can achieve voiding levels lower than SAC305

– Drop-in compatibility with most SAC reflow profiles (air reflow)
– No need for a vacuum reflow oven
– Continuously meets voiding specs, reduces waste, and increases throughput

Durafuse® HR is designed to withstand 3,000+ thermal cycles at -40°C/+125°C across different PCB finishes and component types

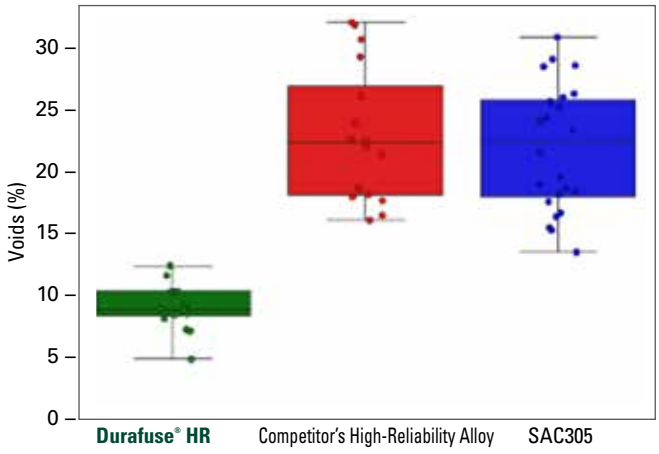
– Superior solder joint crack resistance
– Increased shear strength over time
– Longer characteristic lifetime compared to SAC305 and the competitor's high-reliability alloy

Durafuse® HR uses a novel, mixed-alloy technology to create homogeneous solder joints with intermetallic compounds that enhance its high-reliability properties. This alloy was designed for automotive applications that are looking to extend the mission profiles of their electronics.

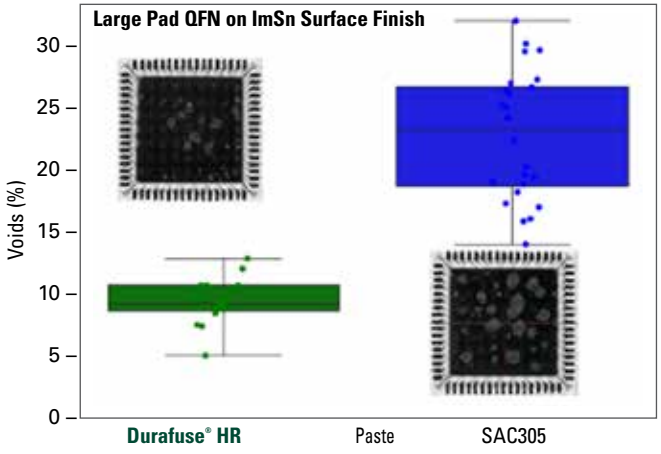
QFN Voiding Results

Durafuse® HR outperforms SAC305 and the competitor's high-reliability alloy on Immersion Tin Surface Finish

5mm QFN with full print coverage, 5mil stencil



10mm QFN with 3x3 window pane, 5mil stencil



Profile:
- 240°C Tpeak
- 0.7°C/s
- 65s TAL

indium.com/durafuse

Contact our engineer: info@indium.com

From One Engineer To Another®

All of Indium Corporation's solder paste and preform manufacturing facilities are IATF 16949:2016 certified. Indium Corporation is an ISO 9001:2015 registered company.

Form No. 100269 (A4) R0

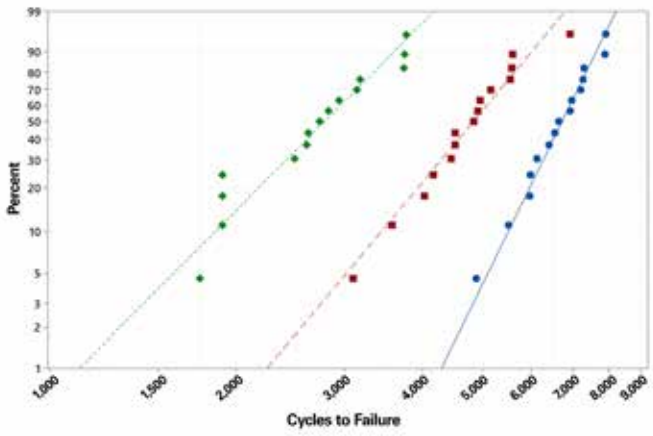
INDIUM CORPORATION®

Durafuse® HR

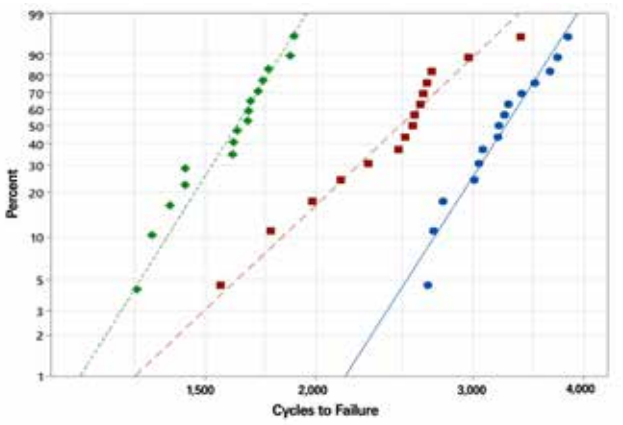
Durafuse® HR Outperforms SAC305 and the Competitor's High-Reliability Alloy

QFN TCT Results (-40°C/+125°C & -40°C/+150°C)

-40°C/125°C – QFN – ImSn Surface Finish

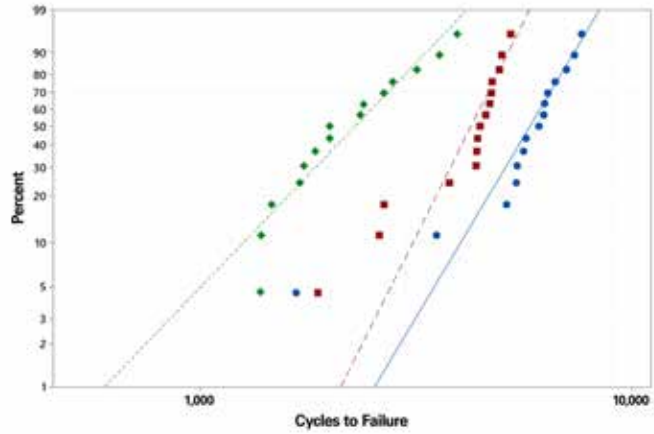


-40°C/150°C – QFN – ImSn Surface Finish

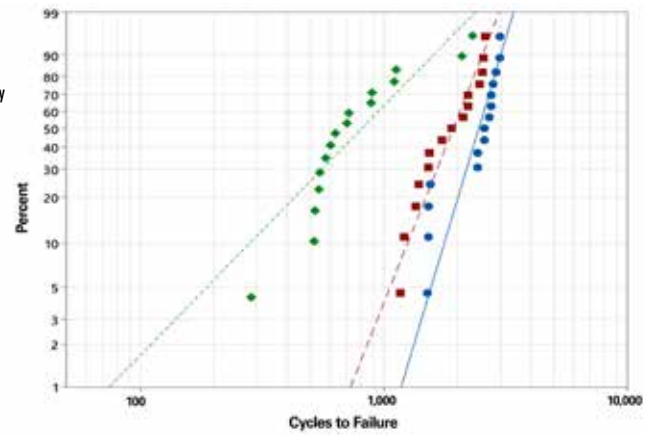


BGA TCT Results (-40°C/+125°C & -40°C/+150°C)

-40°C/125°C – BGA192 – ImSn Surface Finish

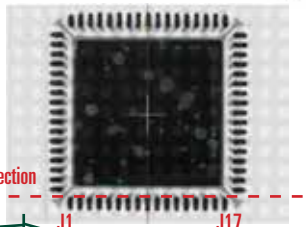


-40°C/150°C – BGA192 – ImSn Surface Finish



QFN Thermal Cycling -40°C/+125°C TCT QFN on ImSn Surface Finish 3,000 Cycles

Cracking visible primarily on component side



Representative cross sections J1-J3 shown below

SAC305

Massive cracking and complete failure on most joints at 3,000 cycles

Competitor's High-Rel. Alloy

Inconsistent performance with some complete failures around 3,000 cycles

Durafuse® HR

Minor cracking with zero failures up to 4,000 cycles

Contact our engineer: **info@indium.com**

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