

July 1, 2017

Issue: 954

Product Change Notice:

3M™ Embedded Capacitance Materials (ECM) C2006R and C4003R

Dear Valued Customer:

This letter is to inform you of a product change to 3M™ Embedded Capacitance Materials C2006R and C4003R. The reason for the product change is to improve the copper foil for enhanced quality and reliability. Additional information on the product change can be found below:

I. Description of Change

Modification to the copper foil surface utilizing proprietary processing techniques.

II. 3M Test Data

3M has performed testing to confirm that Gen 2 copper:

- Meets all the outgoing requirements (see Attachments A & B)
- Has equivalent or enhanced product reliability performance
- Meets IPC/JEDEC J-STD-020 (moisture/reflow sensitivity classification for nonhermetic solid state surface mount devices);
- Meets JEDEC JES22-A101 (Steady state temperature humidity bias life test);
- EU RoHS compliant* and halogen free**

* "RoHS compliant" means that the product or part meets RoHS Directive 2011/65/EU and does not contain any of the following substances in excess of the following maximum concentration values in any homogeneous material, unless the substance is in an application that is exempt under RoHS: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M's knowledge and belief based on information provided by third party suppliers to 3M.

** Halogen free is defined as having maximum 900ppm bromine, maximum 900ppm chlorine, and maximum 1500ppm total bromine and chlorine, per 61429-2-21.

III. Schedule of Implementation

The effective date of change is July 1, 2017. Affected product manufacturing lot numbers will be communicated specifically to customers. 3M is prepared to provide material for evaluation purposes upon request. Please contact John Geissinger (contact info is listed below) for such materials.

IV. Additional Information

Please direct all correspondence on this matter to John Geissinger:

John Geissinger

512-984-5859

Jdgeissinger1@mmm.com

Best regards,

Mike Giesler

Business Manager, 3M EMSD

Product Change Notice: 3M™ Embedded Capacitance Materials (ECM) C2006R and C4003R

Attachment A – IPC/JEDEC J-STD-020

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Moisture/reflow sensitivity classification for nonhermetic solid state surface mount devices.	
Material	JEDEC Level 1*
C2006R & C4003R with Gen 1 copper	PASS
C2006R & C4003R with Gen 2 copper	PASS

*Stored at 85°C/90% RH for 168 hours followed by 3X reflow at 260°C peak temperature.

Attachment B

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Standard manufacturing lot test results				
Product Number	Material Property	Gen 1 Copper *	Gen 2 Copper **	Specification
3M ECM C2006R	Capacitance Density (nF/in ²)	Meets Spec	Meets Spec	20.0 nominal
	Dissipation Factor	Meets Spec	Meets Spec	0.02 max
	Adhesion (lbs/in)	Meets Spec	Meets Spec	3.0 min
3M ECM C4003R	Capacitance Density (nF/in ²)	Meets Spec	Meets Spec	40.0 nominal
	Dissipation Factor	Meets Spec	Meets Spec	0.02 max
	Adhesion (lbs/in)	Meets Spec	Meets Spec	3.0 min

Attachment C

C4003R copper visual appearance, Gen 1 copper vs. Gen 2 copper



Product Change Notice: 3M™ Embedded Capacitance Materials (ECM) C2006R and C4003R

Regulatory: For regulatory information about this product, contact your 3M representative.

Technical Information: The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use: Many factors beyond 3M's control and uniquely within user's control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

Warranty, Limited Remedy, and Disclaimer: Unless an additional warranty is specifically stated on the applicable 3M product packaging or product literature, 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OR TRADE. If the 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.

3M Electronics Materials Solutions Division

6801 River Place Blvd.
Austin, TX 78726-9000
1-800-225-5373

3M.com/interconnect