December 11, 2015

Product change
New soldering process for EPCOS PEC MKP AC capacitor terminals M6, M8 and M10

The soldering flux used for soldering the terminals of M6, M8 and M10 of EPCOS PEC MKP AC capacitors, which contains ammonium chloride, will be replaced by a flux without chloride in future.

Also, the length of the M6 screw terminals will be increased by 1 mm and a chamfer will be added. During soldering the screw terminals will be covered with a mask. In combination with the newly introduced chamfer this will prevent melted tin from flowing over the surface of the screw. The terminals M8 and M10 are not affected by this change.

For details please refer annex.

The changes will be implemented in the plants in Gravataí, Brazil, and Zhuhai, China.

Affected products

Ordering code
B32361*
B32352*
B32364*

Scheduled date of introduction: March 18, 2016 (earlier if customer requests)

Enclosure PCN (ID No. FILM P15-21)
Modified dimensions of M6 screw terminals
Tin soldering flux changed for M6, M8 and M10 screw terminals
Type tests qualification for improved M6, M8 and M10 screw terminals

Contact Ayse Kartal, CAP FILM P PM, Munich

Customers are asked to address inquiries directly to their sales contacts.

Product / Process Change Notification

1. ID No.: FILM P15-21		**2. Date of announcement:** December 11, 2015	
3. Product / product group: EPCOS PEC MKP AC capacitors	**Old ordering code:** B32361* B32362* B32364*	**New ordering code:** No change	**Customer part number:**

4. Description of change:

The soldering flux used for soldering the terminals of M6, M8 and M10 of EPCOS PEC MKP AC capacitors will be changed. Instead of the flux (ammonium chloride) presently used, a flux without chloride will be used in future.

Also, the M6 screw terminals will be increased by 1 mm and a chamfer will be added. During the soldering process the screw terminals will be covered by a mask. In combination with the newly introduced chamfer this will avoid that melted tin can flow over the surface of the screw. The terminals M8 and M10 are not affected by this change.

For details please refer annex.

The changes will be implemented in the plants Gravataí, Brazil, and Zhuhai, China.

5. Effect on the product or for the customer (benefit, quality, specification, lead time):

The changes will improve the quallity of screw terminals of PEC MKP AC capacitors.

6. Quality assurance measures / risk assessment:

Quality procedures will remain unchanged.

7. Scheduled date of change: March 18, 2016

8. Estimated date of first delivery of changed product: March 18, 2016; earlier if requested by the customer.

If EPCOS does not receive notification to the contrary within a period of 10 weeks, EPCOS assumes that the customer agrees to the change. For an interim period we cannot rule out that old as well as new products will be shipped.

Quality Management Name Manuela Alvarez	Signature signed by Manuela Alvarez
Product Marketing Name Ayse Kartal Tel. +49 89 54020 2482 Email ayse.kartal@epcos.com	Signature signed by Ayse Kartal

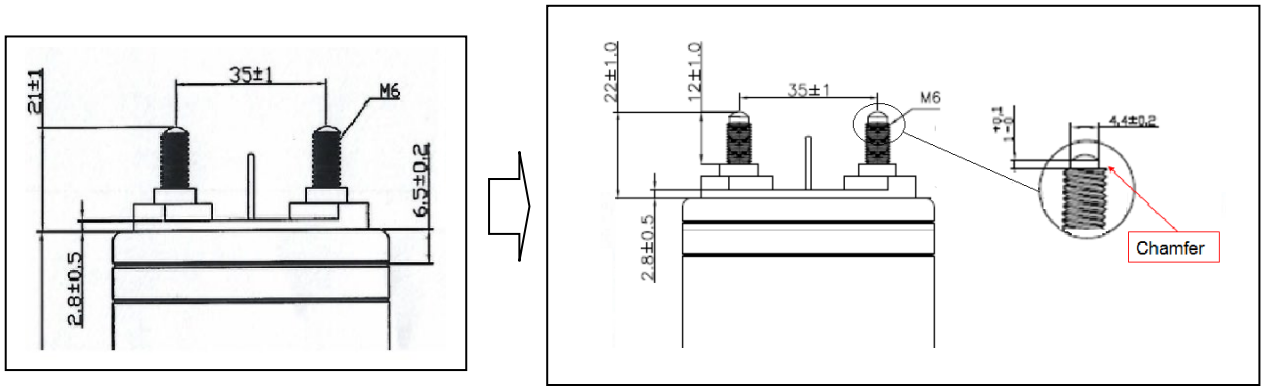
Customer feedback

Customer acknowledgement — Signature

Annex to UPtoDATE 151211PC2 and PCN FILM P15-21of December 11, 2015 /
New soldering process for EPCOS PEC MKP AC capacitor terminals M6, M8 and M10

1) Modified dimensions of M6 screw terminals

The length of M6 screw terminal has been increased by 1 mm and a chamfer has been added– Fig. 01 (b). The chamfer will work with a mask introduced in the process improvement to protect the screw thread during tin soldering process and prevent melted tin from flowing over to the surface of screw.



(a) (b)

Fig. 1 – Drawing of M6 screw terminal
(a) Current M6 terminal
(b) Improved M6 terminal with chamfer and increased length of 1 mm

2) Tin soldering flux changed for M6, M8 and M10 screw terminals

From urea base flux (ammonium-chloride) to rosin flux (no chlorine)

3) Type tests qualification for improved M6, M8 and M10 screw terminals

Item	Type test	Test specification	Approval criteria	Results
Screw terminal M6	Damp heat test	40 °C/93 % RH/1000 h	Capacitance variation max. 3%	Approved
	Salt spray test	As per ASTMB117 duration: 72 h	no oxidation	Approved
	Torque test	Torque≥4 N ·m	≥4 N ·m	Approved
	Leakage test	Temperature:80±5℃ Vacuum pressure≤0.5mbar	no leakage	Approved
Screw terminal M8	Damp heat test	40 °C /93 %RH/1000 h	Capacitance variation max. 3%	Approved
	Salt spray test	As per ASTMB117 duration: 72 h	no oxidation	Approved
	Torque test	Torque≥10 N ·m	≥10 N ·m	Approved
	Leakage test	Temperature:80±5 °C Vacuum pressure ≤ 0.5 mbar	no leakage	Approved
Screw terminal M10	Damp heat test	40 °C /93 %RH/1000 h	Capacitance variation max. 3%	Approved
	Salt spray test	As per ASTMB117 duration: 72 h	no oxidation	Approved
	Torque test	Torque ≥ 12 N ·m	≥12 N ·m	Approved
	Leakage test	Temperature:80±5 °C Vacuum pressure ≤ 0.5 mbar	no leakage	Approved