



Product Change Notification



Product Group: Film capacitors/ Feb 6, 2009/PCN-FC-005-2008 Rev 1

F1778 – 2 and F1778 - 3 series X2 capacitors upgrade to 310 Vac; 110°C range extended to 7.5 mm pitch and miniaturization of dimensions

DESCRIPTION OF CHANGE:

By this PCN we announce the upgrade of F1778 – 2 and F1778 - 3, X2 capacitors. The pitch compatibility is maintained and no changes to the PCB are needed. All safety approvals are available. CQC approvals are added.

Following changes are made

Capacitance range: Pitch 7.5 mm added: 1nF to 68nF.

Voltage rating: For Pitch 10mm to 27.5mm: For F1778 – 2: Increases from 275 Vac to 310 Vac.

For F1778 – 3: Increases from 305 Vac to 310 Vac

For pitch 37.5mm: For F1778 – 2: Increases from 275 Vac to 305 Vac.

For F1778 – 3: No change. Voltage remains at 305 Vac

Temperature rating: For pitch 10mm to 27.5 mm. Increases from 100°C to 110°C

Flammability Class: For pitch 10mm to 27.5 mm: Improves from CLASS 'C' to CLASS 'B'.

Epoxy changes from yellow to white color.

Box material : For pitch 10mm to 37.5 mm: Changes from PP (Polypropylene) to PBT(Polyester).

Improved to withstand higher soldering temperatures used in lead free soldering.

Dimensions are miniaturized. See annexure for details

CLASSIFICATION OF CHANGE: Upgrade of voltage, temperature, flammability class. Miniaturization and range extension. CQC approval added.

REASON FOR CHANGE: Product up gradation.

EXPECTED INFLUENCE ON QUALITY/RELIABILITY/PERFORMANCE: none

PRODUCT CATEGORY: Film capacitors.

PART NUMBERS/SERIES/FAMILIES AFFECTED: F1778 XXX X2XXXX

F1778 XXX X3XXXX

VISHAY BRAND(s): Vishay Roederstein.

TIME SCHEDULE:

Start Shipment date: April 7, 2009

Last Time Buy Date: n/a

Last Time Shipment Date: n/a

SAMPLE AVAILABILITY: yes

PRODUCT IDENTIFICATION:

Voltage: 310 V~ will be marked on capacitor and label.

Change in dimensions and lead diameter. See annexure. Epoxy color will change from yellow to white.

QUALIFICATION DATA: yes, on request

This PCN is considered approved, without further notification, unless we receive specific customer concerns before March 7, 2009 or as specified by contract

Annexure: OLD and NEW marking on capacitor.

OLD Marking

F1778 – 2: 275 Vac



F1778 – 3: 305 Vac



NEW Marking : F1778 – 310 Vac



Annexure

PCN-FC-005-2008 Rev 1

Change in dimensions and lead diameter of the F1778 2 and F1778 3 series

F1778.....	Cap (µF)	old dimension (mm)	old lead diameter (mm)	new dimension (mm)	new lead diameter (mm)
±20% tolerance		Pitch 7.5mm			
F1778210M*B***	0.001	NA	NA	4.0x9.0x10.0	0.5
F1778215M*B***	0.0015	NA	NA	4.0x9.0x10.0	0.5
F1778222M*B***	0.0022	NA	NA	4.0x9.0x10.0	0.5
F1778233M*B***	0.0033	NA	NA	4.0x9.0x10.0	0.5
F1778247M*B***	0.0047	NA	NA	4.0x9.0x10.0	0.5
F1778268M*B***	0.0068	NA	NA	4.0x9.0x10.0	0.5
F1778310M*B***	0.01	NA	NA	4.0x9.0x10.0	0.5
F1778315M*B***	0.015	NA	NA	4.0x9.0x10.0	0.5
F1778322M*B***	0.022	NA	NA	4.0x9.0x10.0	0.5
F1778333M*B***	0.033	NA	NA	4.0x9.0x10.0	0.5
F1778347M*B***	0.047	NA	NA	5.0x10.5x10.0	0.5
F1778368M*B***	0.068	NA	NA	6.0x11.5x10.0	0.5
±10% tolerance		Pitch 7.5mm			
F1778210K*B***	0.001	NA	NA	4.0x9.0x10.0	0.5
F1778212K*B***	0.0012	NA	NA	4.0x9.0x10.0	0.5
F1778215K*B***	0.0015	NA	NA	4.0x9.0x10.0	0.5
F1778218K*B***	0.0018	NA	NA	4.0x9.0x10.0	0.5
F1778222K*B***	0.0022	NA	NA	4.0x9.0x10.0	0.5
F1778227K*B***	0.0027	NA	NA	4.0x9.0x10.0	0.5
F1778233K*B***	0.0033	NA	NA	4.0x9.0x10.0	0.5
F1778239K*B***	0.0039	NA	NA	4.0x9.0x10.0	0.5
F1778247K*B***	0.0047	NA	NA	4.0x9.0x10.0	0.5
F1778256K*B***	0.0056	NA	NA	4.0x9.0x10.0	0.5
F1778268K*B***	0.0068	NA	NA	4.0x9.0x10.0	0.5
F1778282K*B***	0.0082	NA	NA	4.0x9.0x10.0	0.5
F1778310K*B***	0.01	NA	NA	4.0x9.0x10.0	0.5
F1778312K*B***	0.012	NA	NA	4.0x9.0x10.0	0.5
F1778315K*B***	0.015	NA	NA	4.0x9.0x10.0	0.5
F1778318K*B***	0.018	NA	NA	4.0x9.0x10.0	0.5
F1778322K*B***	0.022	NA	NA	4.0x9.0x10.0	0.5
F1778327K*B***	0.027	NA	NA	4.0x9.0x10.0	0.5
F1778333K*B***	0.033	NA	NA	5.0x10.5x10.0	0.5
F1778339K*B***	0.039	NA	NA	5.0x10.5x10.0	0.5
F1778347K*B***	0.047	NA	NA	6.0x11.5x10.0	0.5
F1778356K*B***	0.056	NA	NA	6.0x11.5x10.0	0.5
±20% tolerance		Pitch 10mm			
F1778310M*D***	0.01	3.8x8.8x12.8	0.6	4.0x10.0x12.5	0.6
F1778315M*D***	0.015	3.8x8.8x12.8	0.6	4.0x10.0x12.5	0.6
F1778322M*D***	0.022	4.2x9.4x12.8	0.6	4.0x10.0x12.5	0.6
F1778333M*D***	0.033	5.3x10.3x12.8	0.6	4.0x10.0x12.5	0.6
F1778347M*D***	0.047	5.3x11.3x12.8	0.6	4.0x10.0x12.5	0.6
F1778368M*D***	0.068	6.4x12.5x12.8	0.6	5.0x11.0x12.5	0.6
F1778410M*D***	0.1	6.4x12.5x12.8	0.6	6.0x12.0x12.5	0.6

±10% tolerance	Pitch 10mm				
F1778310K*D***	0.01	3.8x8.8x12.8	0.6	4.0x10.0x12.5	0.6
F1778312K*D***	0.012	3.8x8.8x12.8	0.6	4.0x10.0x12.5	0.6
F1778315K*D***	0.015	3.8x8.8x12.8	0.6	4.0x10.0x12.5	0.6
F1778318K*D***	0.018	4.2x9.4x12.8	0.6	4.0x10.0x12.5	0.6
F1778322K*D***	0.022	4.2x9.4x12.8	0.6	4.0x10.0x12.5	0.6
F1778327K*D***	0.027	5.3x10.3x12.8	0.6	4.0x10.0x12.5	0.6
F1778333K*D***	0.033	5.3x10.3x12.8	0.6	4.0x10.0x12.5	0.6
F1778339K*D***	0.039	5.3x11.3x12.8	0.6	4.0x10.0x12.5	0.6
F1778347K*D***	0.047	6.3x11.3x12.8	0.6	4.0x10.0x12.5	0.6
F1778368K*D***	0.068	6.4x12.5x12.8	0.6	5.0x11.0x12.5	0.6
±20% tolerance	Pitch 15mm				
F1778322M*F***	0.022	5.3x10.3x17.8	0.8	5.0 x 11.0 x 17.5	0.6
F1778333M*F***	0.033	5.3x10.3x17.8	0.8	5.0 x 11.0 x 17.5	0.6
F1778347M*F***	0.047	5.3x10.3x17.8	0.8	5.0 x 11.0 x 17.5	0.6
F1778368M*F***	0.068	5.3x10.3x17.8	0.8	5.0 x 11.0 x 17.5	0.6
F1778410M*F***	0.1	5.3x10.3x17.8	0.8	5.0 x 11.0 x 17.5	0.6
F1778415M*F***	0.15	6.0x12.0x17.9	0.8	6.0 x 12.0 x 17.5	0.6
F1778422M*F***	0.22	8.3x14.3x17.8	0.8	7.0 x 13.5 x 17.5	0.8
F1778433M*F***	0.33	10.0x16.0x17.9	0.8	8.5 x 15.0 x 17.5	0.8
F1778447M*F***	0.47	10.3x17.3x17.8	0.8	10.0 x16.5 x 17.5	0.8
±10% tolerance	Pitch 15mm				
F1778322K*F***	0.022	5.3x10.3x17.8	0.8	5.0 x 11.0 x 17.5	0.6
F1778333K*F***	0.033	5.3x10.3x17.8	0.8	5.0 x 11.0 x 17.5	0.6
F1778347K*F***	0.047	5.3x10.3x17.8	0.8	5.0 x 11.0 x 17.5	0.6
F1778356K*F***	0.056	5.3x10.3x17.8	0.8	5.0 x 11.0 x 17.5	0.6
F1778368K*F***	0.068	5.3x10.3x17.8	0.8	5.0 x 11.0 x 17.5	0.6
F1778382K*F***	0.082	5.3x10.3x17.8	0.8	5.0 x 11.0 x 17.5	0.6
F1778410K*F***	0.1	6.0x12.0x17.9	0.8	5.0 x 11.0 x 17.5	0.6
F1778412K*F***	0.12	6.0x12.0x17.9	0.8	6.0 x 12.0 x 17.5	0.6
F1778415K*F***	0.15	7.3x13.3x17.8	0.8	6.0 x 12.0 x 17.5	0.6
F1778418K*F***	0.18	8.3x17.3x17.8	0.8	7.0 x 13.5 x 17.5	0.8
F1778422K*F***	0.22	8.3x14.3x17.8	0.8	7.0 x 13.5 x 17.5	0.8
F1778433K*F***	0.33	10.0x16.0x17.9	0.8	8.5 x 15.0 x 17.5	0.8
F1778439K*F***	0.39	10.8x18.3x17.8	0.8	10.0 x16.5 x 17.5	0.8
F1778447K*F***	0.47	10.8x18.3x17.8	0.8	10.0 x16.5 x 17.5	0.8
±20% tolerance	Pitch 22.5mm				
F1778415M*I***	0.15	6.3x14.3x26.3	0.8	6.0 x 15.5 x 26.0	0.8
F1778422M*I***	0.22	6.3x14.3x26.3	0.8	6.0 x 15.5 x 26.0	0.8
F1778433M*I***	0.33	7.3x15.3x26.2	0.8	6.0 x 15.5 x 26.0	0.8
F1778447M*I***	0.47	8.3x16.3x26.2	0.8	7.0 x 16.5 x 26.0	0.8
F1778468M*I***	0.68	10.3x18.3x26.2	0.8	8.5 x 18.0 x 26.0	0.8
F1778510M*I***	1	12.3x20.0x26.3	0.8	10.0 x19.5 x 26.0	0.8
±10% tolerance	Pitch 22.5mm				
F1778415K*I***	0.15	6.3x14.3x26.3	0.8	6.0 x 15.5 x 26.0	0.8
F1778422K*I***	0.22	6.3x14.3x26.3	0.8	6.0 x 15.5 x 26.0	0.8
F1778427K*I***	0.27	8.3x16.3x26.3	0.8	6.0 x 15.5 x 26.0	0.8
F1778433K*I***	0.33	8.3x16.3x26.3	0.8	6.0 x 15.5 x 26.0	0.8
F1778439K*I***	0.39	8.3x16.3x26.3	0.8	7.0 x 16.5 x 26.0	0.8
F1778447K*I***	0.47	8.8x16.8x26.3	0.8	7.0 x 16.5 x 26.0	0.8
F1778456K*I***	0.56	10.8x20.8x26.3	0.8	8.5 x 18.0 x 26.0	0.8
F1778468K*I***	0.68	10.8x20.8x26.3	0.8	10.0 x19.5 x 26.0	0.8

±20% tolerance	Pitch 27.5mm				
F1778447M*K***	0.47	8.8x16.8x31.3	0.8	9.0 x 19.0 x 31.5	0.8
F1778468M*K***	0.68	8.8x18.3x31.3	0.8	9.0 x 19.0 x 31.5	0.8
F1778510M*K***	1	11.0x20.3x31.3	0.8	11.0 x 21.0 x 31.0	0.8
F1778522M*K***	2.2	16.3x29.3x31.3	0.8	15.0 x 25.0 x 31.5	0.8
F1778533M*K***	3.3	17.8x32.3x31.3	0.8	18.0 x 28.0 x 31.5	0.8
±10% tolerance	Pitch 27.5mm				
F1778447K*K***	0.47	8.8x16.8x31.3	0.8	9.0 x 19.0 x 31.5	0.8
F1778456K*K***	0.56	8.8x16.8x31.3	0.8	9.0 x 19.0 x 31.5	0.8
F1778468K*K***	0.68	8.8x18.3x31.3	0.8	9.0 x 19.0 x 31.5	0.8
F1778482K*K***	0.82	11.0x20.3x31.3	0.8	11.0 x 21.0 x 31.0	0.8
F1778510K*K***	1	11.0x20.3x31.3	0.8	11.0 x 21.0 x 31.0	0.8
F1778512K*K***	1.2	13.0x23.3x31.3	0.8	11.0 x 21.0 x 31.0	0.8
F1778515K*K***	1.5	13.0x23.3x31.3	0.8	13.0 x 23.0 x 31.0	0.8
F1778518K*K***	1.8	16.3x29.3x31.3	0.8	15.0 x 25.0 x 31.5	0.8
F1778522K*K***	2.2	16.3x29.3x31.3	0.8	15.0 x 25.0 x 31.5	0.8
F1778533K*K***	3.3	19.5x34.8x31.3	0.8	21.0 x 31.0 x 31.0	0.8
±20% tolerance	Pitch 37.5mm				
F1778522M*P***	2.2	14.0x24.3x41.3	0.8	14.5x24.5x41.5	0.8
F1778533M*P***	3.3	15.5x28.3x41.3	0.8	16.0x28.5x41.5	0.8
F1778547M*P***	4.7	17.8x32.3x41.3	0.8	18.0x32.5x41.5	0.8
±10% tolerance	Pitch 37.5mm				
F1778522K2P***	2.2	14.0x24.3x41.3	0.8	14.5x24.5x41.5	0.8

NA - Not Available

***** Last three digits indicate Lead Length and packing**

Digit 12	Digit 13	Digit 14
*	*	*
e.g. 0 (zero) = spaceholder S=3.5-0.5mm P=3.5±0.3mm B=4-1mm M=5-1mm C=6-1mm E=10-1mm T=11-1mm D=15-1mm F=19-1mm H=20+5mm L=30+5mm K=40+5mm N=45-2mm other = special version	Packaing of specialities 0 (zero) = spaceholder B= bulk/loose M= magazine T= tray/pallet U= Tape and Reel (H:16.5mm; dia 350mm) R= Tape and Reel (H:16.5mm; dia 500mm) V= Tape and Reel H:18.5mm; dia 350m) W= Tape and Reel (H:18.5mm; dia 500mm) Z=leaded wound element (unencapsulated) other = special version	Special internal code 0 (zero) = spaceholder R= discharging resistor C= deal with CoC other = special version