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3rd Apr 2020

PCN (Product Change Notification) reference: **2020/05**

Subject: Knowles 'Novacap' brand safety approved MLCC range to be NRND

Dear Customer,

The purpose of this notification is to advise the following changes affecting Knowles surface mount safety rated Multilayer Ceramic Capacitors sold under the 'Novacap' brand name

Since 2014, Novacap brand safety cap parts have been co-licenced versions of the parts sold under the Syfer brand name. Later this year, we anticipate launching a revised and expanded product range with enhanced ratings. This will only be launched under the Syfer brand name.

In anticipation of this launch, this PCN therefore advises that all Safety Approved capacitors sold under the Novacap brand are Not Recommended for New Designs.

We will continue to support the existing part numbers for existing customers, but the intention is to ultimately phase out these part numbers. The timescale for phase out is not yet determined. When this is determined a PDN will be issued.

If you require further information, please contact Knowles sales.

Yours sincerely,

Alice Liu
Quality Manager, Knowles Capacitors

PCN Details

PCN reference:	2020/05
PCN Issue Date:	03 Apr 2020
Implementation Schedule:	For new customer applications after 3rd Apr 2020
Product:	Novacap safety certified MLCC's X2 (LS style) and X1 & X1/Y2 (ES style)
PCN Description:	Parts Not Recommended for New Designs
Reasons for PCN:	Anticipated launch of enhanced range of MLCC's under the Syfer brand.
Changes to Form, Fit or Function:	None
Changes to Quality or Reliability:	None.
Changes to Part Numbers:	None.
Qualification Results:	N/A
Are Samples Available?	N/A

Refer to Novacap / Syfer Safety Certified MLCC Datasheet below.

Novacap™ brand Safety Certified capacitors - X2, X1, Y2

The X2 (LS style) and X1 & X1/Y2 (ES style) Class Compliant chip capacitors specifically designed for use in modem, facsimile, telephone and other electronic equipment where lightning or overvoltage surges can occur.

Both styles are rated at 250 Vac safety approved with C0G/NP0 and X7R dielectrics available (dependant on style).

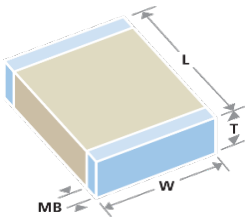
Note - Legacy range planned for obsolescence. Not for new designs. Superseded by Syfer brand safety certified capacitors. See cross reference below

Certification numbers

Dielectric	C0G					X7R				
Certificate number (TUV)	R 60108952					R 60108951				
	Type	Class	Impulse Voltage	Size	Range	Type	Class	Impulse Voltage	Size	Range
	ES1808	X1	4kV	1808	4.7pF to 390pF	ES1808	X1	4kV	1808	150pF to 1.5nF
	ES2211	Y2 / X1	5kV	2211	4.7pF to 1nF	LS1808	X2	2.5kV	1808	150pF to 4.7nF
	ES2215	Y2 / X1	5kV	2215	820pF to 1nF					
	LS1808	X2	2.5kV	1808	4.7pF to 1.5nF					
	LS1812	X2	2.5kV	1812	1nF to 2.2nF					

Dimensions - inches/mm

Size		LS 1808	LS 1812	ES 1808	ES 2211	ES 2215
	inches:	0.178±0.014	0.178±0.014	0.178±0.014	0.224±0.016	0.224±0.016
	mm:	4.50±0.35	4.50±0.35	4.50±0.35	5.70±0.40	5.70±0.40
	inches:	0.079±0.012	0.126±0.012	0.079±0.012	0.110±0.012	0.150±0.014
	mm:	2.00±0.30	3.20±0.30	2.00±0.30	2.79±0.30	3.81±0.35
	inches:	0.079 Max	0.100 Max	0.079 Max	0.100 Max	0.100 Max
	mm:	2.00 Max	2.54 Max	2.00 Max	2.54 Max	2.54 Max
B	inches:	0.010 to 0.032	0.010 to 0.032	0.010 to 0.032	0.010 to 0.032	0.010 to 0.032
	mm:	0.25 to 0.80	0.25 to 0.80	0.25 to 0.80	0.25 to 0.80	0.25 to 0.80
eepage	inches:	0.118 Min	0.118 Min	0.118 Min	0.158 Min	0.158 Min
	mm:	3.00 min	3.00 min	3.00 min	4.00 Min	4.00 Min



Cross reference Novacap brand to Syfer brand safety certified capacitors

	Novacap Brand					Syfer Brand				
Dielectric	**C0G**					**C0G**				
Certificate number (TUV)	**R 60108952**					**R 60096338**				
	Type	Class	Impulse Voltage	Size	Range	Type	Class	Impulse Voltage	Size	Range
	ES1808	X1	4kV	1808	4.7pF to 390pF	PY2	X1	4kV	1808	4.7pF to 390pF
	ES2211	Y2 / X1	5kV	2211	4.7pF to 1nF	SP	Y2 / X1	5kV	2211	7pF to 1nF
	ES2215	Y2 / X1	5kV	2215	820pF to 1nF	SP	Y2 / X1	5kV	2211	820pF to 1nF
	LS1808	X2	2.5kV	1808	4.7pF to 1.5nF	SP	X2	2.5kV	1808	4.7pF to 1.5nF
	LS1812	X2	2.5kV	1812	1nF to 2.2nF	-	-	-	-	-
	-	-	-	-	-	PY2	X1	4kV	1812	4.7pF to 390pF

	Novacap Brand					Syfer Brand				
Dielectric	**X7R**					**X7R**				
Certificate number (TUV)	**R 60108951**					**R 60116280**				
	Type	Class	Impulse Voltage	Size	Range	Type	Class	Impulse Voltage	Size	Range
	ES1808	X1	4kV	1808	150pF to 1.5nF	PY2	X1	4kV	1808	150pF to 1.5nF
	LS1808	X2	2.5kV	1808	150pF to 4.7nF	SP	X2	2.5kV	1808	150pF to 4.7nF
	-	-	-	-	-	PY2	X1	4kV	1812	150pF to 4.7nF
	-	-	-	-	-	SP	Y2 / X1	5kV	2211	100pF to 3.9nF
	-	-	-	-	-	SP	Y2 / X1	5kV	2215	2.7nF to 3.9nF
	-	-	-	-	-	B16	Y2 / X1	5kV	2220	150pF to 10nF
	-	-	-	-	-	B17	X2	2.5kV	2220	150pF to 22nF

Part number breakdown – Novacap™ Certified Safety Capacitors

LS	1808	N	122	K	302	N	-	T	M
STYLE LS = X^2 (X^1 or (X^1, Y^2)	SIZE ee Chart	DIELECTRIC N = C0G/NP0 B = X7R	CAPACITANCE Value in Picofarads. Two significant figures, followed by number of zeros: 121 = 120pF	TOLERANCE J = ± 5% K = ± 10% M = ± 20%	302 = LS (X^2) 2 = ES (X^1 or (X^1, Y^2)	TERMINATION = Nickel Barrier	HICKNESS OPTION Blank = Standard thickness	PACKING o suffix = Bulk = Tape & Reel	MARKING arts marked: NLS (X^2,) NY2 (X^1 & X^1, Y^2)

Ordering Information – Safety Certified capacitors – Syfer Brand Class SPU/SP ranges

1808	J	A25	0102	J	C	T	SP
Chip Size	**Termination**	**Rated Voltage**	**Capacitance in Pico farads (pF)**	**Capacitance Tolerance**	**Dielectric Codes**	**Packaging**	**Suffix code**
1808 **2211** **2215**	= nickel barrier (100% matte tin plating). RoHS compliant = FlexiCap™ termination base with Ni barrier (100% matte tin plating). RoHS compliant. 2211/2215 only = Ni barrier (Tin/lead plating with min. 10% lead). Not RoHS compliant. = FlexiCap™ termination base with Ni barrier (Tin/lead plating with min. 10% lead). Not RoHS compliant.	**A25** = 250Vac (SPU = 250Vac / 2500Vdc)	First digit is 0. Second and third digits are significant figures of capacitance code. The fourth digit is number of zeros following. Example: **0102** = 1.0nF	<10pF **B** = ±0.10pF **C** = ±0.25pF **D** = ±0.50pF ≥ 10pF **F** = ±1% **G** = ±2% **J** = ±5% **K** = ±10% **M** = ±20%	**C** = C0G/NP0 **X** = X7R **A** = C0G/NP0 AEC-Q200 **E** = X7R (2B1) AEC-Q200	= 178mm (7") reel = 330mm (13") reel = Bulk pack – tubs or trays	= Surge Protection capacitors (marked and approved) = Surge Protection capacitors (un-marked parts are in accordance with, but not certified)

Ordering Information – Safety Certified capacitors – Class PY2/SY2

1808	J	A25	0102	J	X	T	PY2
Chip Size	**Termination**	**Rated Voltage**	**Capacitance in Pico farads (pF)**	**Capacitance Tolerance**	**Dielectric Codes**	**Packaging**	**Suffix code**
1808 **1812**	= nickel barrier (100% matte tin plating). RoHS compliant = FlexiCap™ termination base with Ni barrier (100% matte tin plating). RoHS compliant.	**A25** = 250Vac (SY2 = 250Vac / 2500Vdc)	First digit is 0. Second and third digits are significant figures of capacitance code. The fourth digit is number of zeros following. Example: **0102** = 1.0nF	<10pF **B** = ±0.10pF **C** = ±0.25pF **D** = ±0.50pF ≥ 10pF **F** = ±1% **G** = ±2% **J** = ±5% **K** = ±10% **M** = ±20%	**C** = C0G/NP0 **X** = X7R **A** = C0G/NP0 AEC-Q200 **E** = X7R (2B1) AEC-Q200	= 178mm (7") reel = 330mm (13") reel = Bulk pack – tubs or trays	**2** = Safety tested Surge Protection capacitors (marked and approved) = Surge Protection capacitors (un-marked parts are in accordance with, but not certified)

Ordering Information – Safety Certified capacitors – Class B16/B17 ranges

2220	J	A25	0102	J	X	T	B16
Chip Size	**Termination**	**Rated Voltage**	**Capacitance in Pico farads (pF)**	**Capacitance Tolerance**	**Dielectric Codes**	**Packaging**	**Suffix code**
2220	= nickel barrier (100% matte tin plating). RoHS compliant = FlexiCap™ termination base with Ni barrier (100% matte tin plating). RoHS compliant. = Ni barrier (Tin/lead plating with min. 10% lead). Not RoHS compliant. = FlexiCap™ termination base with Ni barrier (Tin/lead plating with min. 10% lead). Not RoHS compliant.	**A25** = 250Vac (U16 = 250Vac / 2500Vdc) (U17 = 250Vac / 2500Vdc)	First digit is 0. Second and third digits are significant figures of capacitance code. The fourth digit is number of zeros following. Example: **0102** = 1.0nF	**J** = ±5% **K** = ±10% **M** = ±20%	**X** = X7R **E** = X7R (2B1) AEC-Q200 = X7R (BME)(4)	= 178mm (7") reel = 330mm (13") reel = Bulk pack – tubs or trays	**6** = Type A: X1/Y2 **17** = Type B: X2 **16** = Type A: (In accordance with, but not certified to, class X1/Y2) **17** = Type B: (In accordance with, but not certified to, class X2)

Dielectric code E (AEC-Q200 approved X7R Dielectric) available with terminations Y & H only

'J' dielectric code for B16 values ≤4.7nF only.

For full details of the Syfer brand safety capacitors, please refer to the website and safety capacitor family datasheet. Individual datasheets can be generated direct from the part number generator