

**european space agency
agence spatiale européenne**

Certificate of Qualification No. 109K

This is to certify that AVX/TPC, St Apollinaire, France has been qualified by ESA for the supply of Capacitors, Ceramic, Fixed, Chip, Type I , for use in ESA space programmes, according to ESCC Generic Specification 3009 and associated Detail Specifications 3009/003, 3009/004, 3009/005, 3009/006 and 3009/022 as recommended by the Space Components Steering Board.

This certificate is valid until June 2013.

**Head of Product Assurance
and Safety Department**

A handwritten signature in black ink, appearing to read 'L. B. O. H.'.


**Date
17 June 2011**

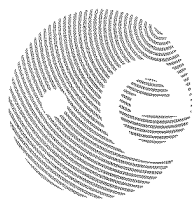
Types covered by similarity: Tolerance (\pm): 0.5pF; 2, 5, 20%	Remarks:
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Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3009 Detail ESCC 3009/003 3009/004 3009/005 3009/006 3009/022	AVX/TPC St Apollinaire France	Qualification Extension Requalification Extension Extension Extension Extension Extension Extension Requalification Extension Extension Extension	CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES	Feb 1983 Sep 1986 Apr 1992 Jan 1995 Jun 1998 Nov 2000 Jun 2003 Feb 2005 May 2007 Jun 2009 Jun 2011

Characteristics: Operating Temp. Range ($^{\circ}$ C), -55 to +125
Variants 01, 03 and 06 are qualified
Values covered by ESCC Specifications defined below.

Style	Model	Detail Spec.	Variants	Capacitance Range (pF)	Rated Volt. (V)	Tolerance ($\pm\%$)	TC (ppm/ $^{\circ}$ C)
0805	A_12C	3009/003	01, 03, 06	4.7 to 9.1 10 to 1 500	50, 100 50, 100	0.5pF 1, 2, 5, 10	± 30
1206	A_20C	3009/022	01, 03, 06	10 to 3 900	50, 100	1, 2, 5, 10	± 30
1210	A_13C	3009/004	01, 03, 06	22 to 6 800	50, 100	1, 2, 5, 10	± 30
1812	A_14C	3009/005	01, 03, 06	100 to 15 000	50, 100	1, 2, 5, 10	± 30
2220	A_15C	3009/006	01, 03, 06	470 to 33 000	50, 100	1, 2, 5, 10	± 30

 ESCC <small>European Space Components Coordination</small> QPL	CAPACITORS, CERAMIC, FIXED, CHIP, TYPE I	Current Validity of Qualification		Page
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Certificate of Qualification No. 110K


This is to certify that AVX/TPC, St Apollinaire, France has been qualified by ESA for the supply of Capacitors, Ceramic, Fixed, Chip, Type II, for use in ESA space programmes, according to ESCC Generic Specification 3009 and associated Detail Specifications 3009/008, 3009/009, 3009/010, 3009/011 and 3009/023 as recommended by the Space Components Steering Board.

This certificate is valid until June 2013.

**Head of Product Assurance
and Safety Department**

A handwritten signature in blue ink, appearing to read 'L. Voh'.

**Date
17 June 2011**

Types covered by similarity: Tolerance ($\pm\%$): 10, 20%		Remarks:		
Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3009 Detail ESCC 3009/008 3009/009 3009/010 3009/011 3009/023	AVX/TPC St Apollinaire France	Qualification Extension Requalification Extension Extension Extension Extension Extension Extension Requalification Extension Extension Extension	CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES	Feb 1983 Sep 1986 Oct 1992 Mar 1995 Jun 1998 Nov 2000 Jun 2003 Feb 2005 May 2007 Jun 2009 Jun 2011
Characteristics: See Table on next page Operating Temperature Range ($^{\circ}\text{C}$), -55 to +125				
	CAPACITORS, CERAMIC, FIXED, CHIP, TYPE II	Current Validity of Qualification		Page
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Characteristics:

Style	Model	Detail Spec.	Variants	Capacitance Range (pF)			Rated Volt. (V)	Tol. (±%)
0805	A_12G	3009/008	01, 03, 06	10 000	to	47 000	25	5, 10, 20
				3 900	to	27 000	50	5, 10, 20
				820	to	10 000	100	5, 10, 20
0805	A612Z	3009/008	07	27 000	to	100 000	25	5, 10, 20
				27 000	to	68 000	50	
				10 000	to	47 000	100	
1210	A_13G	3009/009	01, 03, 06	47 000	to	220 000	25	5, 10, 20
				33 000	to	120 000	50	5, 10, 20
				3 900	to	47 000	100	5, 10, 20
1210	A613Z	3009/009	07	100 000	to	470 000	25	5, 10, 20
				100 000	to	330 000	50	
				47 000	to	220 000	100	
1812	A_14G	3009/010	01, 03, 06	82 000	to	470 000	25	5, 10, 20
				56 000	to	270 000	50	5, 10, 20
				6 800	to	82 000	100	5, 10, 20
1812	A614Z	3009/010	07	220 000	to	1 000 000	25	5, 10, 20
				220 000	to	680 000	50	
				82 000	to	470 000	100	
2220	A_15G	3009/011	01, 03, 06	180 000	to	1 000 000	25	5, 10, 20
				100 000	to	680 000	50	5, 10, 20
				18 000	to	180 000	100	5, 10, 20
2220	A615Z	3009/011	07	470 000	to	2 200 000	25	5, 10, 20
				470 000	to	1 500 000	50	
				180 000	to	1 000 000	100	
1206	A_20G	3009/023	01, 03, 06	27 000	to	100 000	25	5, 10, 20
				12 000	to	68 000	50	5, 10, 20
				2 200	to	22 000	100	5, 10, 20
1206	A620Z	3009/023	07	47 000	to	220 000	25	5, 10, 20
				47 000	to	150 000	50	
				27000	to	100 000	100	



CAPACITORS,
CERAMIC, FIXED,
CHIP, TYPE II

Current Validity of Qualification

Certificate

110 K

Valid Until

June 2013

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