GENERAL INFORMATION

AVX MR Series

Molded Radial Leaded MLC

Temperature Coefficients: C0G (NP0), X7R, Z5U
50, 100, 200 Volts

Case Material: Molded Epoxy

Lead Material: Solderable

HOW TO ORDER

MR05	1	A	561	J	A	A
AVX Style	**Voltage**	**Dielectric**	**Capacitance**	**Capacitance Tolerance**	**Failure Rate**	**Leads**
MR04 MR05 MR06 MR07 MR08	5 = 50V 1 = 100V 2 = 200V	A = C0G (NP0) C = X7R E = Z5U	First two digits are the significant figures of capacitance. Third digit indicates the additional number of zeros. For example, order 100,000 pF as 104. (For values below 10pF use "R" in place of decimal point, e.g., 1R4 = 1.4pF.)	C0G (NP0): D = ±.5pF (>10pF only) F = ±1% (>50pF only) G = ±2% (>25pF only) J = ±5% K = ±10% X7R: J = ±5% K = ±10% M = ±20% Z5U: M = ±20% Z = +80% -20%	A = Not Applicable T = CECC	A = Standard Solderable (SnPb) T[1] = Trimmed Leads .230" ± .030"

Not RoHS Compliant

[1] Trimmed lead length for the MR05 style will be measured from the bend in the lead (seating plane).

MARKING

Marking is as size permits.
(For code identification, see HOW TO ORDER section.)

— AVX
— Capacitance Tolerance
— Voltage Rating
— Temperature Coefficient
— Date Code
— Lot Code

PACKAGING REQUIREMENTS

Bulk Packaging: 1000 pcs. per sealed package except MR07/MR08 (300 pcs.).

Tape and Reel: Available on MR04, MR05, and MR06 only (2500 pcs./reel).

Ammo Packaging: Available on special request.

Radial Leads/Ceralam®

C0G (NP0)

SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: Millimeters (Inches)

	AVX Style	MR04			MR05			MR06			MR07			MR08		
	Length*	4.83 (.190")			4.83 (.190")			7.36 (.290")			12.44 (.490")			12.44 (.490")		
	Width*	4.83 (.190")			4.83 (.190")			7.36 (.290")			12.44 (.490")			12.44 (.490")		
	Thickness*	2.28 (.090")			2.28 (.090")			2.28 (.090")			3.55 (.140")			6.09 (.240")		
	Lead Spacing*	2.54 (.100")			5.08 (.200")			5.08 (.200")			10.16 (.400")			10.16 (.400")		
	Lead Diameter*	.635 (.025")			.635 (.025")			.635 (.025")			.635 (.025")			.635 (.025")		
Cap. in pF	**Typical AVX Part Nos.**	**WVDC 200**	**100**	**50**	**WVDC 200**	**100**	**50**	**WVDC 200**	**100**	**50**	**WVDC 200**	**100**	**50**	**WVDC 200**	**100**	**50**
1.0 to 9.1	MR-----5A1R0DAA MR-----5A9R1DAA															
10 12 15	MR-----5A100KAA MR-----5A120KAA MR-----5A150KAA															
18 22 27	MR-----5A180KAA MR-----5A220KAA MR-----5A270KAA															
33 39 47	MR-----5A330KAA MR-----5A390KAA MR-----5A470KAA															
56 68 82	MR-----5A560KAA MR-----5A680KAA MR-----5A820KAA															
100 120 150	MR-----5A101KAA MR-----5A121KAA MR-----5A151KAA															
180 220 270	MR-----5A181KAA MR-----5A221KAA MR-----5A271KAA															
330 390 470	MR-----5A331KAA MR-----5A391KAA MR-----5A471KAA															
560 680 820	MR-----5A561KAA MR-----5A681KAA MR-----5A821KAA															
1000 1200 1500	**MR-----5A102KAA** MR-----5A122KAA MR-----5A152KAA															
1800 2200 2700	MR-----5A182KAA MR-----5A222KAA MR-----5A272KAA															
3300 3900 4700	MR-----5A332KAA MR-----5A392KAA MR-----5A472KAA															
5600 6800 8200	MR-----5A562KAA MR-----5A682KAA MR-----5A822KAA															
10,000 12,000 15,000	**MR-----5A103KAA** MR-----5A123KAA MR-----5A153KAA															
18,000 22,000 27,000	MR-----5A183KAA MR-----5A223KAA MR-----5A273KAA															
33,000 39,000 47,000	MR-----5A333KAA MR-----5A393KAA MR-----5A473KAA															
56,000 68,000 82,000	MR-----5A563KAA MR-----5A683KAA MR-----5A823KAA															
100,000 120,000 150,000	**MR-----5A104KAA** MR-----5A124KAA MR-----5A154KAA															

For trimmed leads see "How To Order".
For other tolerances see "How To Order".
For other voltages see "How To Order".

= **Industry preferred values**

*Length, width and thickness dimensions are ±.254 mm (±.010"). Lead diameter is ±.05 mm (±.002"). Lead spacing is ±.381 mm (±.015").

Radial Leads/Ceralam®

X7R

SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: Millimeters (Inches)

	AVX Style	MR04			MR05			MR06			MR07			MR08		
	Length*	4.83 (.190")			4.83 (.190")			7.36 (.290")			12.44 (.490")			12.44 (.490")		
	Width*	4.83 (.190")			4.83 (.190")			7.36 (.290")			12.44 (.490")			12.44 (.490")		
	Thickness*	2.28 (.090")			2.28 (.090")			2.28 (.090")			3.55 (.140")			6.09 (.240")		
	Lead Spacing*	2.54 (.100")			5.08 (.200")			5.08 (.200")			10.16 (.400")			10.16 (.400")		
	Lead Diameter*	.635 (.025")			.635 (.025")			.635 (.025")			.635 (.025")			.635 (.025")		
Cap. in pF	Typical AVX Part Nos.	WVDC 200	WVDC 100	WVDC 50	WVDC 200	WVDC 100	WVDC 50	WVDC 200	WVDC 100	WVDC 50	WVDC 200	WVDC 100	WVDC 50	WVDC 200	WVDC 100	WVDC 50
100	MR____5C101KAA															
120	MR____5C121KAA															
150	MR____5C151KAA															
180	MR____5C181KAA															
220	MR____5C221KAA															
270	MR____5C271KAA															
330	MR____5C331KAA															
390	MR____5C391KAA															
470	MR____5C471KAA															
560	MR-----5C561KAA															
680	MR-----5C681KAA															
820	MR-----5C821KAA															
1000	**MR____5C102KAA**															
1200	MR____5C122KAA															
1500	MR____5C152KAA															
1800	MR____5C182KAA															
2200	MR____5C222KAA															
2700	MR____5C272KAA															
3300	MR____5C332KAA															
3900	MR____5C392KAA															
4700	MR____5C472KAA															
5600	MR____5C562KAA															
6800	MR____5C682KAA															
8200	MR____5C822KAA															
10,000	**MR____5C103KAA**															
12,000	MR____5C123KAA															
15,000	MR____5C153KAA															
18,000	MR____5C183KAA															
22,000	MR____5C223KAA															
27,000	MR____5C273KAA															
33,000	MR____5C333KAA															
39,000	MR____5C393KAA															
47,000	MR____5C473KAA															
56,000	MR____5C563KAA															
68,000	MR____5C683KAA															
82,000	MR____5C823KAA															
100,000	**MR____5C104KAA**															
120,000	MR____5C124KAA															
150,000	MR____5C154KAA															
180,000	MR____5C184KAA															
220,000	MR____5C224KAA															
270,000	MR____5C274KAA															
330,000	MR____5C334KAA															
390,000	MR____5C394KAA															
470,000	MR____5C474KAA															
560,000	MR____5C564KAA															
680,000	MR____5C684KAA															
820,000	MR____5C824KAA															
1.0 µF	**MR____5C105KAA**															
1.2 µF	MR____5C125KAA															
1.5 µF	MR____5C155KAA															
1.8 µF	MR____5C185KAA															
2.0 µF	MR____5C205KAA															
2.2 µF	MR____5C225KAA															
2.7 µF	MR____5C275KAA															
3.3 µF	MR____5C335KAA															
3.9 µF	MR____5C395KAA															
4.7 µF	**MR____5C475KAA**															

For trimmed leads see "How To Order".
For other tolerances see "How To Order".
For other voltages see "How To Order".

= **Industry preferred values**

*Length, width and thickness dimensions are ±.254 mm (±.010"). Lead diameter is ±.05 mm (±.002"). Lead spacing is ±.381 mm (±.015").

Radial Leads/Ceralam®

Z5U

SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: Millimeters (Inches)

	AVX Style	MR04		MR05		MR06		MR07		MR08	
	Length*	4.83 (.190")		4.83 (.190")		7.36 (.290")		12.44 (.490")		12.44 (.490")	
	Width*	4.83 (.190")		4.83 (.190")		7.36 (.290")		12.44 (.490")		12.44 (.490")	
	Thickness*	2.28 (.090")		2.28 (.090")		2.28 (.090")		3.55 (.140")		6.09 (.240")	
	Lead* Spacing	2.54 (.100")		5.08 (.200")		5.08 (.200")		10.16 (.400")		10.16 (.400")	
	Lead* Diameter	.635 (.025")		.635 (.025")		.635 (.025")		.635 (.025")		.635 (.025")	
Cap. in pF	**Typical AVX Part Nos.**	**WVDC 100**	**50**	**WVDC 100**	**50**	**WVDC 100**	**50**	**WVDC 100**	**50**	**WVDC 100**	**50**
10,000	**MR____5E103ZAA**										
12,000	MR____5E123ZAA										
15,000	MR____5E153ZAA										
18,000	MR____5E183ZAA										
22,000	MR____5E223ZAA										
27,000	MR____5E273ZAA										
33,000	MR____5E333ZAA										
39,000	MR____5E393ZAA										
47,000	MR____5E473ZAA										
56,000	MR____5E563ZAA										
68,000	MR____5E683ZAA										
82,000	MR____5E823ZAA										
100,000	**MR____5E104ZAA**										
120,000	MR____5E124ZAA										
150,000	MR____5E154ZAA										
180,000	MR____5E184ZAA										
220,000	MR____5E224ZAA										
270,000	MR____5E274ZAA										
330,000	MR____5E334ZAA										
390,000	MR____5E394ZAA										
470,000	**MR____5E474ZAA**										
560,000	MR____5E564ZAA										
680,000	MR____5E684ZAA										
820,000	MR____5E824ZAA										
1.0 µF	**MR____5E105ZAA**										
1.2 µF	MR____5E125ZAA										
1.5 µF	MR____5E155ZAA										
1.8 µF	MR____5E185ZAA										
2.2 µF	MR____5E225ZAA										
2.7 µF	MR____5E275ZAA										
3.3 µF	MR____5E335ZAA										
3.9 µF	MR____5E395ZAA										
4.7 µF	**MR____5E475ZAA**										
5.6 µF	MR____5E565ZAA										
6.8 µF	MR____5E685ZAA										
8.2 µF	MR____5E825ZAA										
10.0 µF	**MR____5E106ZAA**										

For trimmed leads see "How To Order".
For other tolerances see "How To Order".
For other voltages see "How To Order".

= Industry preferred values

*Length, width and thickness dimensions are ±.254 mm (±.010"). Lead diameter is ±.05 mm (±.002"). Lead spacing is ±.381 mm (±.015).

Radial Leads/Packaging

Tape and Reel

GENERAL INFORMATION

1. Standard reel diameter is 355 millimeters (14 inches) maximum.

2. Reeling standard (#1 or #2) should be specified when ordering.

HOW TO ORDER

To specify tape and reel packaging, add TR1, TR2 or TRX to the end of the AVX 12 digit part number.

Examples:

SR215C104KARTR1
SR305E105MARTR2
SR215C103JARTRX

THE INSERTABLES

STANDARD 1

STANDARD 2

STANDARD 1

Dimensions in Millimeters

STANDARD 2

Dimensions in Millimeters

DESCRIPTION	DIMENSIONS (MM)
A. Feed Hole Pitch	12.70 ± .20
B. Feed Hole Diameter	3.99 ± .20
C. Feed Hole Location	9.02 ± .51
D. Component Lead Spacing	$5.00^{+.79}_{-.20}$ or $2.54^{+.79}_{-.20}$
E. Component Lead Location	3.81 ±.51 or 5.00 ±.51 for 2.54 lead spacing
F. Component Lead Protrusion (edge of carrier to cut end of lead)	2.00 maximum
K. Component Body Location	6.35 ±.41
L. Carrier Tape Width	$18.01^{+1.02}_{-.51}$
M. Carrier Tape Assembly Thickness	.71 ± .20
N. Carrier Tape Spliced Thickness	1.42 maximum
O. Carrier Tape Spliced Length	50.80 - 88.90
Q. Adhesive Tape Border	3.00 maximum
R. Component Bent Leads (either direction)	.79 maximum
S. Component Misalignment	.99 maximum
T. Component Pitch	12.70 ±.99
W. Adhesive Tape Width	5.00 minimum
X. Carrier Tape Thickness	.51 ±.10
Y. Cumulative Pitch over 20 Pitches	254 ±2.00

Radial Leads/Packaging

QUANTITY PER REEL SR/AR	
PART	**PCS**
SR15, 07, 12	3500
SR20, 21, 23, 28 13, 29, 59, 62, 89	3000
SR30, 32, 40, 63, 64 65, 75	2000
MR05, 06	2500

*SL style available in all SR configurations.

DESCRIPTION	DIMENSIONS (MM)
A – Reel Diameter	304.80 - 355
B – Reel Outside Width	50.80 maximum
C – Reel Inside Width	38.10 - 46.02
D – Core Diameter (O.D.)	102.01 maximum
E – Hub Recess Diameter	86.36 maximum
F – Hub Recess Depth	9.50 minimum
G – Arbor Hole Diameter	25.40 - 30.48

CONVERSION TABLE

MM	IN	MM	IN	MM	IN	MM	IN	MM	IN
.10	.004	1.52	.060	5.00	.197	9.91	.390	32.00	1.260
.20	.007	2.00	.079	5.08	.200	10.03	.395	38.10	1.500
.38	.015	2.54	.100	6.22	.245	10.16	.400	46.02	1.812
.41	.016	3.00	.118	6.35	.250	11.68	.460	50.80	2.000
.51	.020	3.18	.125	6.60	.260	12.50	.492	86.36	3.400
.71	.028	3.48	.137	6.99	.275	12.70	.500	88.90	3.500
.79	.031	3.81	.150	7.62	.300	16.00	.630	102.01	4.016
.99	.039	3.99	.157	8.89	.350	18.01	.709	254.00	10.000
1.02	.040	4.45	.175	9.02	.355	25.40	1.000	304.80	12.000
1.42	.056	4.98	.196	9.50	.374	30.48	1.200	355.00	14.000

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