

AXIAL LEADS

Cerlam®

GENERAL INFORMATION

SA Series

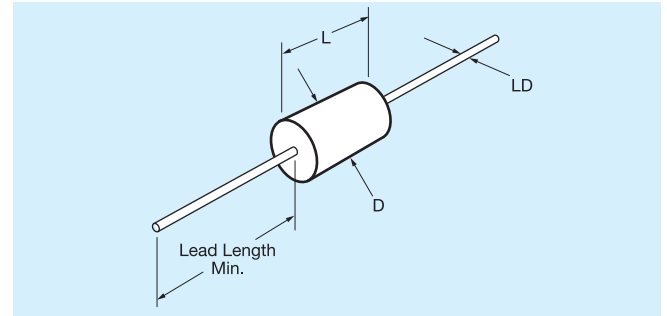
Molded Axial Leaded MLC

Temperature Coefficients: C0G (NP0), X7R, Z5U

50V, 100V and 200V

Case Material: Molded Epoxy

Lead Material: Solderable



HOW TO ORDER

MA10	5	E	104	Z	A	R
Molded Axial Size	Voltage	Dielectric	Capacitance	Capacitance Tolerance	Failure Rate	Leads
MA10 MA20 MA30 MA40 MA50 MA60	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): F = ±1% J = ±5% K = ±10% M = ±20% D = ±0.5pF <10pF only	X7R: J = ±5% K = ±10% M = ±20% Z5U: M = ±20% Z = +80% -20%	A = Not Applicable A = Standard

Not RoHS Compliant

‡ C tolerance available C0G (NP0) from 1.0 to 9.1 pF only. Minimum tolerance for values 10 pF - 100 pF is D or F whichever is greater.

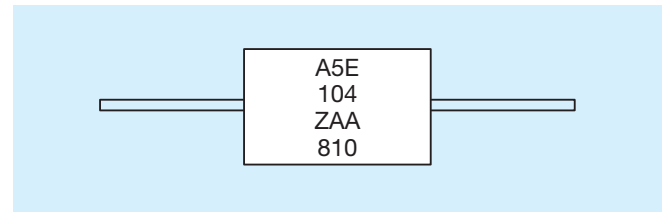
MARKING (EXAMPLE)

Line 1, A (for KYOCERA AVX), 5 = 50 Volts (V is optional),
E = TC Line 2, 104Z = Capacitance Code

Line 3, Tolerance, 2 digit Lot Code

Date Code: 8 = 2008
10 = Week

Four Digit Date Code Optional



MILITARY CROSS REFERENCE AND DIMENSIONS GUIDE

Per MIL-Spec				Case Size		
Style	MIL-C-11015	MIL-PRF-39014	MIL-PRF-20	Length (L)	Diameter (D)	Lead Diameter (LD)
MA10	CK12	CKR11	CCR75/CC75	4.07 ± .25 (.160" ± .010")	2.29 ± .25 (.090" ± .010")	.48 ± .05 (.019" ± .002")
MA20	CK13	CKR12	CCR76/CC76	6.35 ± .25 (.250" ± .010")	2.29 ± .25 (.090" ± .010")	.48 ± .05 (.019" ± .002")
MA40	CK14	CKR14	CCR77/CC77	9.91 ± .25 (.390" ± .010")	3.56 ± .25 (.140" ± .010")	.63 ± .05 (.025" ± .002")
MA50	CK15	CKR15	CCR78/CC78	12.7 ± .51 (.500" ± .020")	6.35 ± .38 (.250" ± .015")	.63 ± .05 (.025" ± .002")
MA60	CK16	CKR16	CCR79/CC79	17.53 ± .51 (.690" ± .020")	8.89 ± .51 (.350" ± .015")	.63 ± .05 (.025" ± .002")

For Military/Established Reliability Molded/Axial Lead see MIL-C-11015, MIL-PRF-39014, MIL-PRF-20 Section.

Dimensions: Millimeters (Inches)

AXIAL LEADS

Cerlam® – C0G (NP0) Dielectric



SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: Millimeters (Inches)



Style		MA10			MA20			MA30			MA40			MA50			MA60		
Length		4.07 ± .25 (.160" ± .010")			6.35 ± .25 (.250" ± .010")			6.09 ± .25 (.240" ± .010")			9.91 ± .25 (.390" ± .010")			12.7 ± .51 (.500" ± .020")			17.53 ± .51 (.690" ± .020")		
Diameter		2.29 ± .25 (.090" ± .010")			2.29 ± .25 (.090" ± .010")			3.30 ± .25 (.130" ± .010")			3.56 ± .25 (.140" ± .010")			6.35 ± .38 (.250" ± .015")			8.89 ± .51 (.350" ± .015")		
Lead Diameter		.48 ± .05 (.019" ± .002")			.48 ± .05 (.019" ± .002")			.48 ± .05 (.019" ± .002")			.63 ± .05 (.025" ± .002")			.63 ± .05 (.025" ± .002")			.63 ± .05 (.025" ± .002")		
Lead Length		25.4 (1.00")			25.4 (1.00")			25.4 (1.00")			25.4 (1.00")			25.4 (1.00")			25.4 (1.00")		
Cap. in. pF		WVDC			WVDC			WVDC			WVDC			WVDC			WVDC		
Typical Part Nos.		200	100	50	200	100	50	200	100	50	200	100	50	200	100	50	200	100	50
1.0	MA____5A1R0DAA																		
to																			
9.1	MA____5A9R1DAA																		
10	MA____5A100KAA																		
12	MA____5A120KAA																		
15	MA____5A150KAA																		
18	MA____5A180KAA																		
22	MA____5A220KAA																		
27	MA____5A270KAA																		
33	MA____5A330KAA																		
39	MA____5A390KAA																		
47	MA____5A470KAA																		
56	MA____5A560KAA																		
68	MA____5A680KAA																		
82	MA____5A820KAA																		
100	MA____5A101KAA																		
120	MA____5A121KAA																		
150	MA____5A151KAA																		
180	MA____5A181KAA																		
220	MA____5A221KAA																		
270	MA____5A271KAA																		
330	MA____5A331KAA																		
390	MA____5A391KAA																		
470	MA____5A471KAA																		
560	MA____5A561KAA																		
680	MA____5A681KAA																		
820	MA____5A821KAA																		
1000	MA____5A102KAA																		
1200	MA____5A122KAA																		
1500	MA____5A152KAA																		
1800	MA____5A182KAA																		
2200	MA____5A222KAA																		
2700	MA____5A272KAA																		
3300	MA____5A332KAA																		
3900	MA____5A392KAA																		
4700	MA____5A472KAA																		
5600	MA____5A562KAA																		
6800	MA____5A682KAA																		
8200	MA____5A822KAA																		
10,000	MA____5A103KAA																		
12,000	MA____5A123KAA																		
15,000	MA____5A153KAA																		
18,000	MA____5A183KAA																		
22,000	MA____5A223KAA																		
27,000	MA____5A273KAA																		
33,000	MA____5A333KAA																		
39,000	MA____5A393KAA																		
47,000	MA____5A473KAA																		
56,000	MA____5A563KAA																		
68,000	MA____5A683KAA																		
82,000	MA____5A823KAA																		
100,000	MA____5A104KAA																		
120,000	MA____5A124KAA																		
150,000	MA____5A154KAA																		

For other tolerances see Part No. Codes
For other voltages see Part No. Codes
Style

AXIAL LEADS

Cerlam® - X7R Dielectric

SIZE AND CAPACITANCE SPECIFICATIONS



Dimensions: Millimeters (Inches)

Style		MA10			MA20			MA30			MA40			MA50			MA60		
Length		4.07 ± .25 (.160" ± .010")			6.35 ± .25 (.250" ± .010")			6.09 ± .25 (.240" ± .010")			9.91 ± .25 (.390" ± .010")			12.7 ± .51 (.500" ± .020")			17.53 ± .51 (.690" ± .020")		
Diameter		2.29 ± .25 (.090" ± .010")			2.29 ± .25 (.090" ± .010")			3.30 ± .25 (.130" ± .010")			3.56 ± .25 (.140" ± .010")			6.35 ± .38 (.250" ± .015")			8.89 ± .51 (.350" ± .015")		
Lead Diameter		.48 ± .05 (.019" ± .002")			.48 ± .05 (.019" ± .002")			.48 ± .05 (.019" ± .002")			.63 ± .05 (.025" ± .002")			.63 ± .05 (.025" ± .002")			.63 ± .05 (.025" ± .002")		
Lead Length		25.4 (1.00")			25.4 (1.00")			25.4 (1.00")			25.4 (1.00")			25.4 (1.00")			25.4 (1.00")		
Cap. in. pF	Typical	WVDC			WVDC			WVDC			WVDC			WVDC			WVDC		
	Part Nos.	200	100	50	200	100	50	200	100	50	200	100	50	200	100	50	200	100	50
220	MA____5C221KAA																		
270	MA____5C271KAA																		
330	MA____5C331KAA																		
390	MA____5C391KAA																		
470	MA____5C471KAA																		
560	MA____5C561KAA																		
680	MA____5C681KAA																		
820	MA____5C821KAA																		
1000	MA____5C102KAA																		
1200	MA____5C122KAA																		
1500	MA____5C152KAA																		
1800	MA____5C182KAA																		
2200	MA____5C222KAA																		
2700	MA____5C272KAA																		
3300	MA____5C332KAA																		
3900	MA____5C392KAA																		
4700	MA____5C472KAA																		
5600	MA____5C562KAA																		
6800	MA____5C682KAA																		
8200	MA____5C822KAA																		
10,000	MA____5C103KAA																		
12,000	MA____5C123KAA																		
15,000	MA____5C153KAA																		
18,000	MA____5C183KAA																		
22,000	MA____5C223KAA																		
27,000	MA____5C273KAA																		
33,000	MA____5C333KAA																		
39,000	MA____5C393KAA																		
47,000	MA____5C473KAA																		
56,000	MA____5C563KAA																		
68,000	MA____5C683KAA																		
82,000	MA____5C823KAA																		
100,000	MA____5C104KAA																		
120,000	MA____5C124KAA																		
150,000	MA____5C154KAA																		
180,000	MA____5C184KAA																		
220,000	MA____5C224KAA																		
270,000	MA____5C274KAA																		
330,000	MA____5C334KAA																		
390,000	MA____5C394KAA																		
470,000	MA____5C474KAA																		
560,000	MA____5C564KAA																		
680,000	MA____5C684KAA																		
820,000	MA____5C824KAA																		
1.0 µF	MA____5C105KAA																		
1.2 µF	MA____5C125KAA																		
1.5 µF	MA____5C155KAA																		
1.8 µF	MA____5C185KAA																		
2.2 µF	MA____5C225KAA																		
2.7 µF	MA____5C275KAA																		
3.3 µF	MA____5C335KAA																		
3.9 µF	MA____5C395KAA																		

For other tolerances see Part No. Codes
For other voltages see Part No. Codes
Style

AXIAL LEADS

Cerlam® - Z5U Dielectric

SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: Millimeters (Inches)

Style		MA10			MA20			MA30			MA40			MA50			MA60		
Length		4.07 ± .25 (.160" ± .010")			6.35 ± .25 (.250" ± .010")			6.09 ± .25 (.240" ± .010")			9.91 ± .25 (.390" ± .010")			12.7 ± .51 (.500" ± .020")			17.53 ± .51 (.690" ± .020")		
Diameter		2.29 ± .25 (.090" ± .010")			2.29 ± .25 (.090" ± .010")			3.30 ± .25 (.130" ± .010")			3.56 ± .25 (.140" ± .010")			6.35 ± .38 (.250" ± .015")			8.89 ± .51 (.350" ± .015")		
Lead Diameter		.48 ± .05 (.019" ± .002")			.48 ± .05 (.019" ± .002")			.48 ± .05 (.019" ± .002")			.63 ± .05 (.025" ± .002")			.63 ± .05 (.025" ± .002")			.63 ± .05 (.025" ± .002")		
Lead Length		25.4 (1.00")			25.4 (1.00")			25.4 (1.00")			25.4 (1.00")			25.4 (1.00")			25.4 (1.00")		
Cap. in. pF	Typical	WVDC			WVDC			WVDC			WVDC			WVDC			WVDC		
	Part Nos.	200	100	50	200	100	50	200	100	50	200	100	50	200	100	50	200	100	50
1000	MA.....5E102ZAA																		
1200	MA.....5E122ZAA																		
1500	MA.....5E152ZAA																		
1800	MA.....5E182ZAA																		
2200	MA.....5E222ZAA																		
2700	MA.....5E272ZAA																		
3300	MA.....5E332ZAA																		
3900	MA.....5E392ZAA																		
4700	MA.....5E472ZAA																		
5600	MA.....5E562ZAA																		
6800	MA.....5E682ZAA																		
8200	MA.....5E822ZAA																		
10,000	MA.....5E103ZAA																		
12,000	MA.....5E123ZAA																		
15,000	MA.....5E153ZAA																		
18,000	MA.....5E183ZAA																		
22,000	MA.....5E223ZAA																		
27,000	MA.....5E273ZAA																		
33,000	MA.....5E333ZAA																		
39,000	MA.....5E393ZAA																		
47,000	MA.....5E473ZAA																		
56,000	MA.....5E563ZAA																		
68,000	MA.....5E683ZAA																		
82,000	MA.....5E823ZAA																		
100,000	MA.....5E104ZAA																		
120,000	MA.....5E124ZAA																		
150,000	MA.....5E154ZAA																		
180,000	MA.....5E184ZAA																		
220,000	MA.....5E224ZAA																		
270,000	MA.....5E274ZAA																		
330,000	MA.....5E334ZAA																		
390,000	MA.....5E394ZAA																		
470,000	MA.....5E474ZAA																		
560,000	MA.....5E564ZAA																		
680,000	MA.....5E684ZAA																		
820,000	MA.....5E824ZAA																		
1.0 µF	MA.....5E105ZAA																		
1.2 µF	MA.....5E125ZAA																		
1.5 µF	MA.....5E155ZAA																		
1.8 µF	MA.....5E185ZAA																		
2.2 µF	MA.....5E225ZAA																		
2.7 µF	MA.....5E275ZAA																		
3.3 µF	MA.....5E335ZAA																		
3.9 µF	MA.....5E395ZAA																		
4.7 µF	MA.....5E475ZAA																		
5.6 µF	MA.....5E565ZAA																		
6.8 µF	MA.....5E685ZAA																		
8.2 µF	MA.....5E825ZAA																		

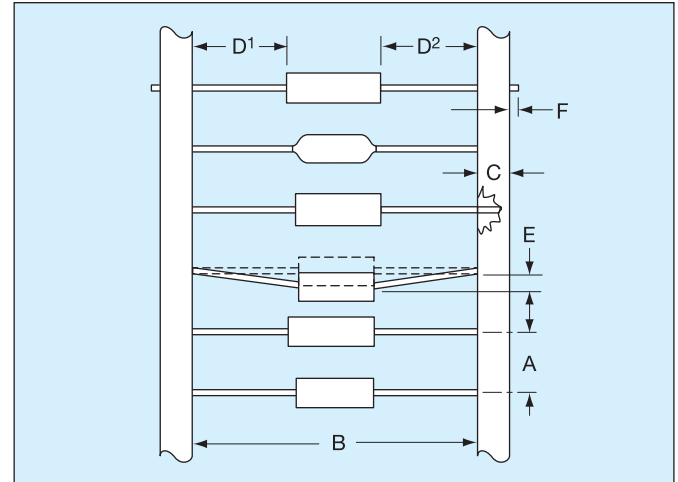
For other tolerances see Part No. Codes
For other voltages see Part No. Codes
Style

AXIAL LEADS

Packaging

TAPE AND REEL

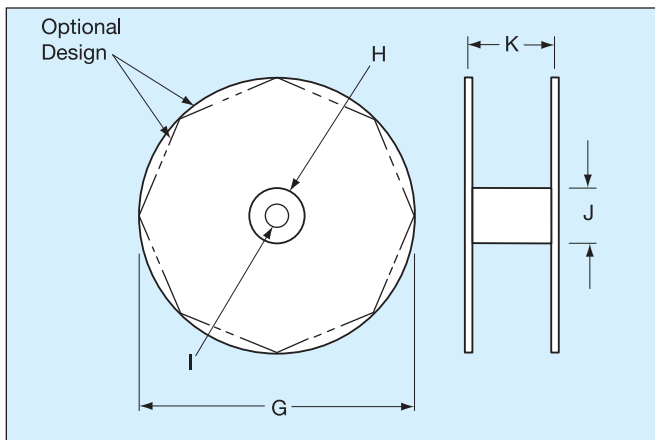
CLASS I / RS-296	
A.	5mm ± 0.5mm (.200" ± 0.020")
B*.	52.4mm ± 1.5mm (2.063" ± 0.059")
C.	6.35mm ± 0.4mm (0.250" ± 0.016")
D1-D2.	1.4mm (0.055" MAX.)
E.	1.2mm (0.047" MAX.)
F.	1.6mm (0.063" MAX.)
G.	356mm (14.00")
H.	76mm (3.000")
I.	25.4mm (1.000")
J.	84mm (3.300")
K.	70mm (2.750")



Leader Tape: 300mm min. (12")

Splicing: Tape Only

Missing Parts: 0.25% of component count max.-
No consecutive missing parts



REEL QUANTITIES (MAX.) ‡

SA05	7,500 pcs.	MA10	5,000 pcs.
SA10	7,500 pcs.	MA20	5,000 pcs.
SA11	5,000 pcs.	MA30	3,000 pcs.
SA20	5,000 pcs.	MA40	3,000 pcs.
SA30	5,000 pcs.	MA50	950 pcs.
SA40	5,000 pcs.	MA60	650 pcs.

‡ 1000 pc. reels available for distribution pack only in ±1% and ±2% tolerance.

* Standard Tape Spacing Shown. Also available in 26.0mm + 1.5mm, - 0mm, (1.023 in. + .059 in. - 0 in.) for SpinGuards only. EIA Class I, II and III tape spacings are available for molded axials. Tape spacing for Class II is 63.5mm ± 1.5mm (2.50 in ± .059 in), and for Class III 73mm ± 1.5mm (2.87 in ± .059 in)

ADDITIONAL PACKAGING AVAILABLE

AMMO PACK

Tape Spacing	SA05, SA10 SA20	SA11 SA30	SA40	BOX SIZES (Nominal)		
				L	W	H
52.4mm ± 1.5mm (2.062" ± .059")	4,000 pcs.	2000	2,000 pcs.	255mm (10.039")	73mm (2.874")	93mm (3.661")
26.0mm + 1.5mm - 0mm (1.023" + .059" - 0")	4,000 pcs.*	2000	2,000 pcs.*	255mm (10.039")	48mm (1.889")	113mm (4.448")

*SpinGuard only

BULK PACK (MOLDED AXIALS ONLY)

MA10 MA20 MA30 MA40	100 pcs. (bag)
MA50 MA60	50 pcs. (bag)

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

KYOCERA AVX:

[MA205A152JAA](#) [MA105E473ZAA](#) [MA401C104KAA](#) [MA405A103JAA](#) [MA605A104FAA](#) [MA405A103FAA](#)
[MA101A181JAA](#) [MA101A271JAA](#) [MA302C103KAA](#) [MA502E154MAATR1](#) [MA605A104GAA](#) [MA101A101JAA-BULK](#)
[MA205E104MAA](#) [MA401C104KAA-BULK](#) [MA205C473MAA](#) [MA101A1R0CAA](#) [MA101A1R5DAA](#)
[MA101A1R5DAAAP1](#) [MA101A100JAA](#) [MA101A2R2CAA](#) [MA101A200JAA](#) [MA101A220JAA](#) [MA101A220KAA](#)
[MA101A220KAC](#) [MA101A220MAA](#) [MA101A251JAA](#) [MA101A270KAA](#) [MA101A271KAA](#) [MA101A3R3CAA](#)
[MA101A300JAA](#) [MA101A300KAA](#) [MA101A301MAA-BULK](#) [MA101A330JAA-BULK](#) [MA101A330KAA](#)
[MA101A331KAA](#) [MA101A471FAA-BULK](#) [MA101A471JAA](#) [MA101A471JAA-BULK](#) [MA101A5R0DAA](#) [MA101A510JAA](#)
[MA101A560JAA](#) [MA101A620JAA](#) [MA101A680JAA](#) [MA101A681JAA](#) [MA101A681KAA](#) [MA101A8R2DAA-BULK](#)
[MA101A821JAA](#) [MA101C102MAA](#) [MA101C103KAA](#) [MA101C103KAA-BULK](#) [MA101C122KAA-BULK](#)
[MA101C391KAA](#) [MA101C561KAA](#) [MA101C681KAA](#) [MA101C681MAA](#) [MA101C821KAA](#) [MA101E102MAA](#)
[MA102A101JAA](#) [MA102A3R3DAA](#) [MA102A4R7DAA](#) [MA102A6R8DAA](#) [MA102C271KAA](#) [MA105A100JAA](#)
[MA105A101FAA](#) [MA105A102FAA](#) [MA105A102JAA](#) [MA105A220JAA](#) [MA105A221KAA](#) [MA105A330FAA](#)
[MA105A330KAA](#) [MA105A391JAA](#) [MA105A471FAA](#) [MA105A681FAA](#) [MA105C102JAA](#) [MA105C102KAA](#)
[MA105C103KAA](#) [MA105C103MAA](#) [MA105C152KAA](#) [MA105C153JAA](#) [MA105C222MAA](#) [MA105C223KAA](#)
[MA105C223MAA](#) [MA105E103MAA](#) [MA105E103ZAA](#) [MA105E563MAA](#) [MA107A1R0CAA](#) [MA201A102GAA](#)
[MA201A102JAA](#) [MA201A102KAA](#) [MA201A152GAA](#) [MA201C103KAA](#) [MA201C103KAA-BULK](#) [MA201C122JAA](#)
[MA201C152KAA](#) [MA201C821KAA-BULK](#) [MA205A152FAA-BULK](#) [MA205A152JAA-BULK](#) [MA205A182FAA](#)
[MA205A561KAA](#) [MA205C223KAA](#)