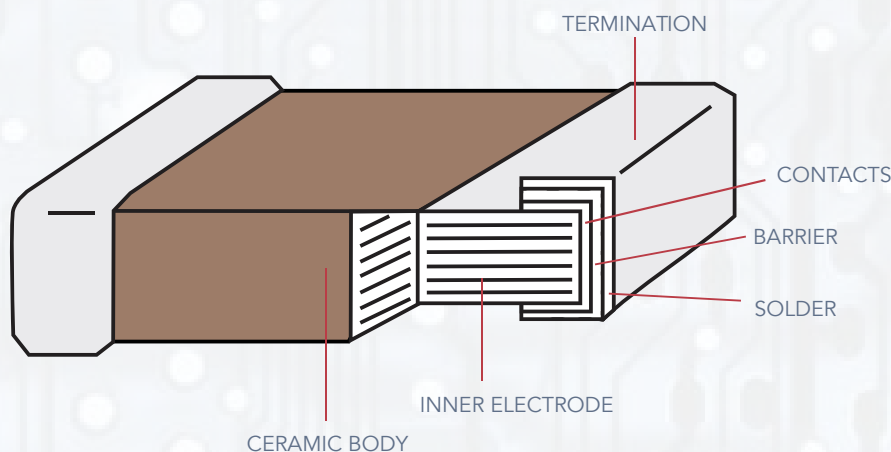


## PRODUCT IDENTIFICATION

- PRODUCT NAME                      Capacitor (MLCC)
- SERIES                                GMC31
- SIZE                                    1206
- DIALECTRIC                        C0G
- WEIGHT                                19.1 (max)
- MANUFACTURE NAME            Cal-Chip Electronics Inc.
- ADDRESS                             59 Steamwhistle Drive Ivyland, PA 18974
- RESPONSIBLE PERSON NAME    Frank Salamone
- TELEPHONE                         215.942.8900

## GENERAL COMPOSITION



PART	MATERIAL		WEIGHT (mg)	% OF PART	% OF COMPONENT	CAS NO.
Body	Inner Electrode	Ni	0.27	1.45	1.41	7440-02-0
	Dielectric	Calcium Magnesium Titanate	18.32	98.55	95.91	12032-30-3 7439-95-4 12049-50-2
SUBTOTAL			18.59	100	97.31	
Termination	Contact with Ceramic	Cu	0.337	65.70	1.77	7440-50-8
	Barrier Layer	Ni	0.035	6.82	0.18	7440-02-0
	Solder Platin	Sn	0.141	27.48	0.74	7440-31-5
SUBTOTAL			0.51	100	2.69	
ALL PARTS TOTAL			19.1		100	

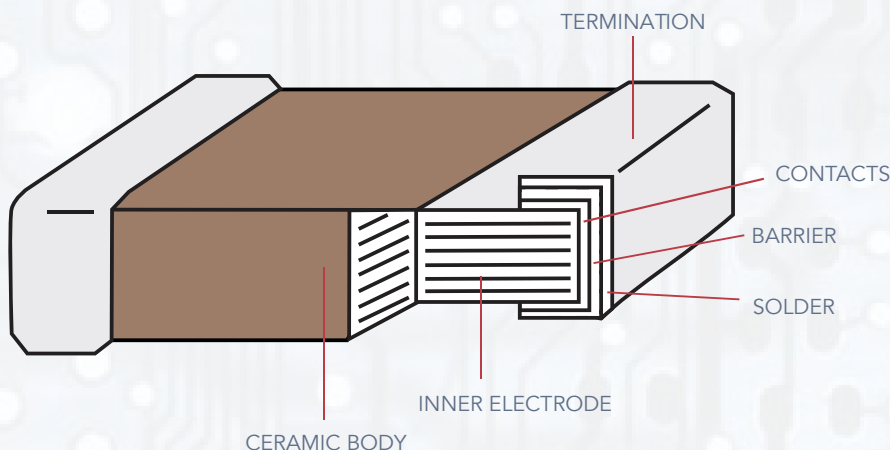
# MATERIAL DECLARATION

GMC31-X7R

## PRODUCT IDENTIFICATION

- PRODUCT NAME                      Capacitor (MLCC)
- SERIES                                GMC31
- SIZE                                    1206
- DIALECTRIC                         X7R
- WEIGHT                                21.5 (max)
- MANUFACTURE NAME            Cal-Chip Electronics Inc.
- ADDRESS                             59 Steamwhistle Drive Ivyland, PA 18974
- RESPONSIBLE PERSON NAME    Frank Salamone
- TELEPHONE                         215.942.8900

## GENERAL COMPOSITION



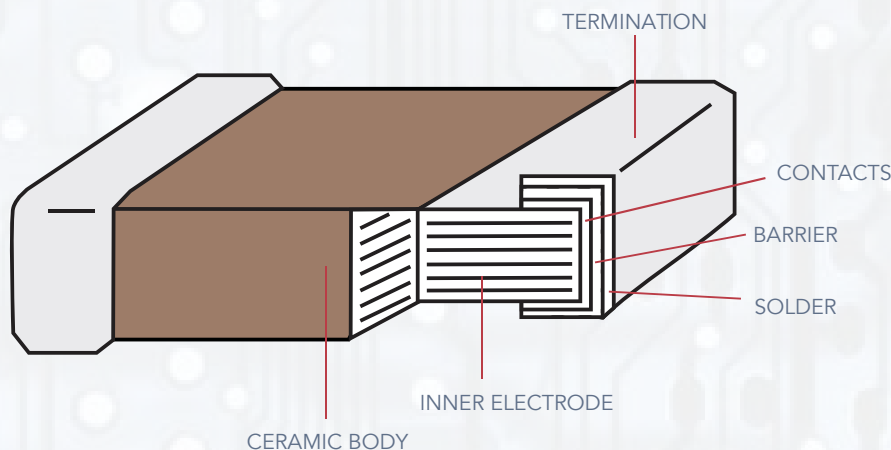
PART	MATERIAL		WEIGHT (mg)	% OF PART	% OF COMPONENT	CAS NO.
Body	Inner Electrode	Ni	0.96	4.57	4.47	7440-02-0
	Dielectric	BaTiO <sub>3</sub>	20.03	95.43	93.14	12047-27-7
SUBTOTAL			20.99	100	97.61	
Termination	Contact with Ceramic	Cu	0.337	65.45	1.57	7440-50-8
	Barrier Layer	Ni	0.037	7.18	0.17	7440-02-0
	Solder Platin	Sn	0.141	27.37	0.66	7440-31-5
SUBTOTAL			0.52	100	2.40	
ALL PARTS TOTAL			21.5		100	



## PRODUCT IDENTIFICATION

- PRODUCT NAME                      Capacitor (MLCC)
- SERIES                                GMC31
- SIZE                                    1206
- DIALECTRIC                         X7S
- WEIGHT                                21.5 (max)
- MANUFACTURE NAME            Cal-Chip Electronics Inc.
- ADDRESS                             59 Steamwhistle Drive Ivyland, PA 18974
- RESPONSIBLE PERSON NAME    Frank Salamone
- TELEPHONE                         215.942.8900

## GENERAL COMPOSITION

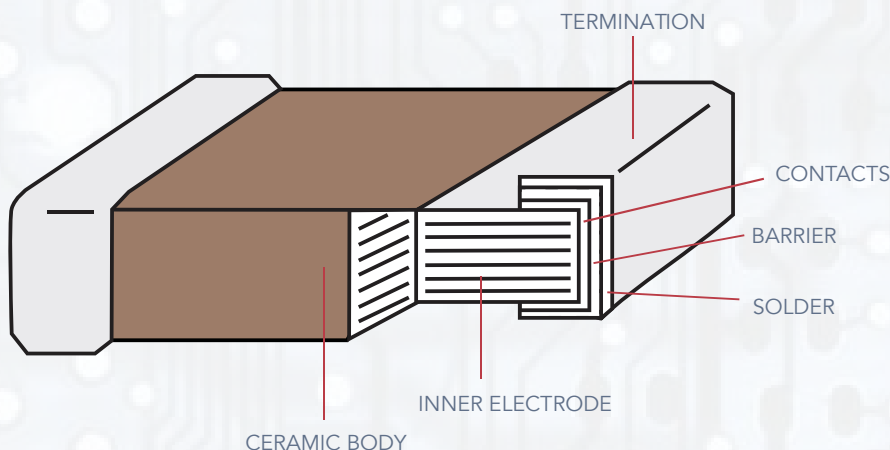


PART	MATERIAL		WEIGHT (mg)	% OF PART	% OF COMPONENT	CAS NO.
Body	Inner Electrode	Ni	0.96	4.57	4.47	7440-02-0
	Dielectric	BaTiO <sub>3</sub>	20.03	95.43	93.14	12047-27-7
SUBTOTAL			20.99	100	97.61	
Termination	Contact with Ceramic	Cu	0.337	65.45	1.57	7440-50-8
	Barrier Layer	Ni	0.037	7.18	0.17	7440-02-0
	Solder Platin	Sn	0.141	27.37	0.66	7440-31-5
SUBTOTAL			0.52	100	2.40	
ALL PARTS TOTAL			21.5		100	

## PRODUCT IDENTIFICATION

- PRODUCT NAME                      Capacitor (MLCC)
- SERIES                                GMC31
- SIZE                                    1206
- DIALECTRIC                        X6S
- WEIGHT                                51.1 (max)
- MANUFACTURE NAME            Cal-Chip Electronics Inc.
- ADDRESS                             59 Steamwhistle Drive Ivyland, PA 18974
- RESPONSIBLE PERSON NAME    Frank Salamone
- TELEPHONE                         215.942.8900

## GENERAL COMPOSITION



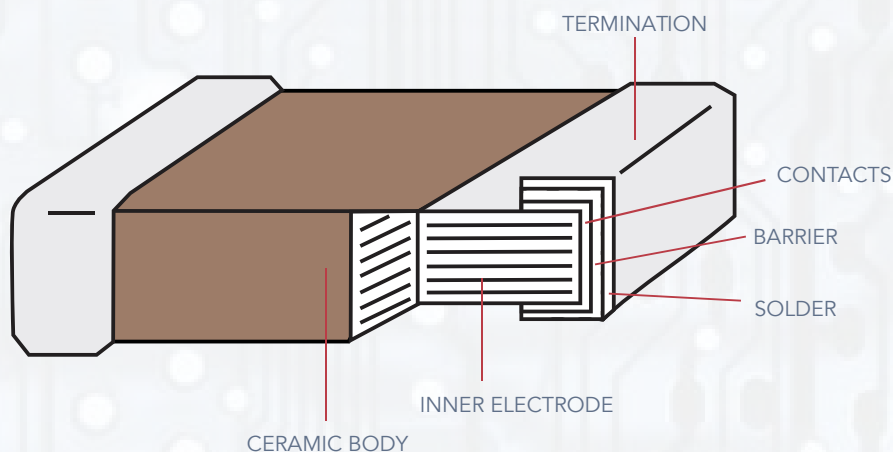
PART	MATERIAL		WEIGHT (mg)	% OF PART	% OF COMPONENT	CAS NO.
Body	Inner Electrode	Ni	14.98	29.76	29.31	7440-02-0
	Dielectric	BaTiO <sub>3</sub>	35.34	70.24	69.16	12047-27-7
SUBTOTAL			50.32	100	98.47	
Termination	Contact with Ceramic	Cu	0.603	77.21	1.18	7440-50-8
	Barrier Layer	Ni	0.037	4.74	0.07	7440-02-0
	Solder Platin	Sn	0.141	18.05	0.28	7440-31-5
SUBTOTAL			0.78	100	1.53	
ALL PARTS TOTAL			51.1		100	



## PRODUCT IDENTIFICATION

- PRODUCT NAME                      Capacitor (MLCC)
- SERIES                                GMC31
- SIZE                                    1206
- DIALECTRIC                        X5R
- WEIGHT                                51.1 (max)
- MANUFACTURE NAME            Cal-Chip Electronics Inc.
- ADDRESS                             59 Steamwhistle Drive Ivyland, PA 18974
- RESPONSIBLE PERSON NAME    Frank Salamone
- TELEPHONE                         215.942.8900

## GENERAL COMPOSITION



PART	MATERIAL		WEIGHT (mg)	% OF PART	% OF COMPONENT	CAS NO.
Body	Inner Electrode	Ni	14.98	29.76	29.31	7440-02-0
	Dielectric	BaTiO <sub>3</sub>	35.34	70.24	69.16	12047-27-7
SUBTOTAL			50.32	100	98.47	
Termination	Contact with Ceramic	Cu	0.603	77.21	1.18	7440-50-8
	Barrier Layer	Ni	0.037	4.74	0.07	7440-02-0
	Solder Platin	Sn	0.141	18.05	0.28	7440-31-5
SUBTOTAL			0.78	100	1.53	
ALL PARTS TOTAL			51.1		100	

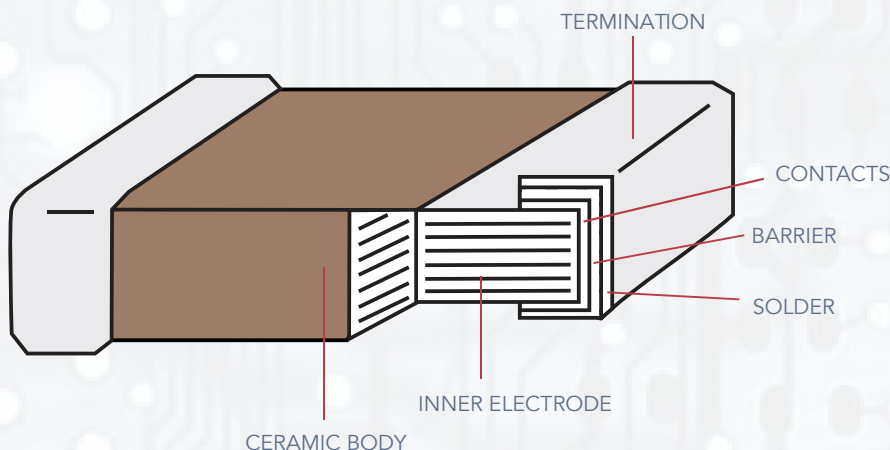
# MATERIAL DECLARATION

GMC31-Y5V

## PRODUCT IDENTIFICATION

- PRODUCT NAME                      Capacitor (MLCC)
- SERIES                                GMC31
- SIZE                                    1206
- DIALECTRIC                         Y5V
- WEIGHT                                21.53 (max)
- MANUFACTURE NAME            Cal-Chip Electronics Inc.
- ADDRESS                             59 Steamwhistle Drive Ivyland, PA 18974
- RESPONSIBLE PERSON NAME    Frank Salamone
- TELEPHONE                         215.942.8900

## GENERAL COMPOSITION



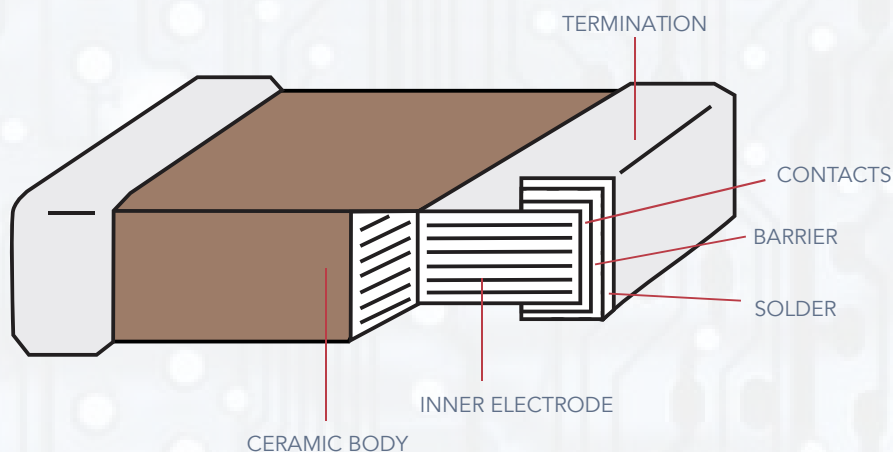
PART	MATERIAL		WEIGHT (mg)	% OF PART	% OF COMPONENT	CAS NO.
Body	Inner Electrode	Ni	3.76	18.02	17.48	7440-02-0
	Dielectric	BaTiO <sub>3</sub>	17.12	81.98	79.53	12047-27-7
SUBTOTAL			20.89	100	97.01	
Termination	Contact with Ceramic	Cu	0.445	68.97	2.06	7440-50-8
	Barrier Layer	Ni	0.059	9.15	0.27	7440-02-0
	Solder Platin	Sn	0.141	21.88	0.65	7440-31-5
SUBTOTAL			0.64	100	2.99	
ALL PARTS TOTAL			21.53		100	



## PRODUCT IDENTIFICATION

- PRODUCT NAME                      Capacitor (MLCC)
- SERIES                                GMC31
- SIZE                                    1206
- DIALECTRIC                         Z5U
- WEIGHT                                21.53 (max)
- MANUFACTURE NAME            Cal-Chip Electronics Inc.
- ADDRESS                             59 Steamwhistle Drive Ivyland, PA 18974
- RESPONSIBLE PERSON NAME    Frank Salamone
- TELEPHONE                         215.942.8900

## GENERAL COMPOSITION



PART	MATERIAL		WEIGHT (mg)	% OF PART	% OF COMPONENT	CAS NO.
Body	Inner Electrode	Ni	3.76	18.02	17.48	7440-02-0
	Dielectric	BaTiO <sub>3</sub>	17.12	81.98	79.53	12047-27-7
SUBTOTAL			20.89	100	97.01	
Termination	Contact with Ceramic	Cu	0.445	68.97	2.06	7440-50-8
	Barrier Layer	Ni	0.059	9.15	0.27	7440-02-0
	Solder Platin	Sn	0.1141	21.88	0.65	7440-31-5
SUBTOTAL			0.64	100	2.99	
ALL PARTS TOTAL			21.53		100	