

Microwave SLC's

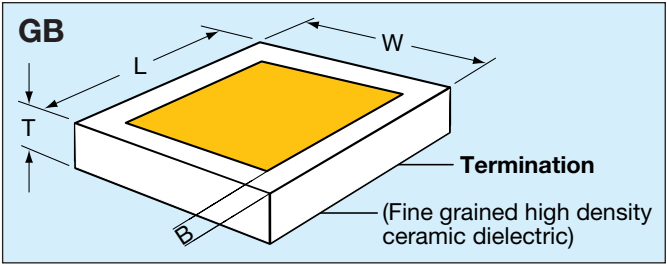
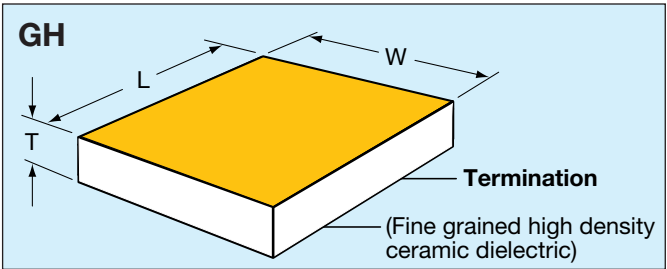
Single Layer Capacitor Series



GENERAL INFORMATION

AVX offers a complete line of SLC's (Single Layer Capacitors). These SLC's are thin-film gold metallized (100μ inches) ceramic capacitors uniquely suited to stripline width matching in microwave circuitry. A wide variety of standard and special sizes are available. This, coupled with numerous dielectric materials, can meet the most complex application.

AVX is capable of meeting or exceeding the environmental and mechanical specifications of the following:



CASE CODES

Inches (millimeters)

Type Code	Code	L Length	W Width	T Thickness	B Border
GH	10	0.010±0.003 (.254±.076)	0.010±0.003 (.254±.076)	0.005 + 0.002 - 0.001 (.127±.051)	0.001 (.025)
GB	15	0.015±0.005 (.381±.127)	0.015 ± 0.003 (.381 + .000 - .076)	0.005 + 0.002 - 0.001 (.127±.051)	0.002±0.001 (.051±.025)
	20	0.020±0.005 (.508±.127)	0.020 ± 0.003 (.508 + .000 - .076)	0.005 + 0.002 - 0.001 (.127±.051)	0.002±0.001 (.051±.025)
	25	0.025±0.005 (.635±.127)	0.025 ± 0.003 (.635 + .000 - .076)	0.005 + 0.002 - 0.001 (.127±.051)	0.002±0.001 (.051±.025)
	35	0.035±0.005 (.889±.127)	0.035±0.005 (.889±.127)	0.005 + 0.002 - 0.001 (.127±.051)	0.002±0.001 (.051±.025)
	50	0.050±0.010 (1.27±.254)	0.050±0.010 (1.27±.254)	0.005 + 0.002 - 0.001 (.127±.051)	0.002±0.001 (.051±.025)
	70	0.070±0.010 (1.78±.254)	.070±.010 (1.78±.254)	.007±.002 (.178±.051)	0.002±0.001 (.051±.025)
	90	0.090±0.010 (2.29±.254)	0.090±0.010 (2.29±.254)	0.005 + 0.002 - 0.001 (.127±.051)	0.002±0.001 (.051±.025)

MIL Ref.	Parameter	Method or Paragraph
MIL-STD-883	Bond Strength	2011.7
MIL-STD-883	Shear Strength	2019
MIL-C-55681	Voltage Conditioning	3.6
MIL-C-55681	Insulation Resistance	3.9
MIL-C-55681	Thermal Shock	3.14
MIL-C-55681	Voltage Temp. Limits	3.13
MIL-C-55681	Life Test	3.17
MIL-C-49464	All	—

HOW TO ORDER

GH Type Code GH = No Border GB = With Border	35 Case Code	5 Working Voltage Code 5 = 50WVDC 1 = 100WVDC	A Dielectric See Capacitor Selection Chart (Dielectric codes see page 66)	6R8 Capacitance EIA Capacitance Code in pF. First two digits = significant figures or "R" for decimal place. Third digit = number of zeros or after "R" significant figures.	K Capacitance Tolerance Code <10pF A = ±0.05pF (special order) B = ±0.1pF C = ±0.25pF D = ±0.5pF >10pF J = ±5% K = ±10% M = ±20%	A Termination Code A = 99.99% pure sputtered gold over Titanium Tungsten (~1000 Å thickness). Other terminations available upon request.	6N Packaging Code 6N = Antistatic Waffle Pack
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DIELECTRIC CODES AND TYPES

	Dielectric Code & Type	Dielectric Constant (K)	Temperature Coefficient Typical	Temperature Range	Maximum D.F.	I.R. Min. @ 25°C
Temperature Compensation	A	14	0±30ppm/°C	-55°C to +125°C	.6% @ 1MHz	10 ¹¹ Ω
		35	0±30ppm/°C	-55°C to +125°C	.6% @ 1MHz	10 ¹¹ Ω
		80	0±30ppm/°C	-55°C to +125°C	.7% @ 1MHz	10 ¹¹ Ω
	4	205	-1500±250ppm/°C	-55°C to +125°C	.25% @ 1MHz	10 ¹¹ Ω
	7	370	-3300±1000ppm/°C	-55°C to +125°C	1.0% @ 1MHz	10 ¹⁰ Ω
	Y	650	-4700±1000ppm/°C	-55°C to +125°C	1.0% @ 1MHz	10 ¹¹ Ω
X7R	C	1,200	±15%	-55°C to +125°C	2.5% @ 1KHz	10 ¹¹ Ω
		2,200	±15%	-55°C to +125°C	2.5% @ 1KHz	10 ¹⁰ Ω
		5,000	±15%	-55°C to +125°C	2.5% @ 1KHz	10 ¹⁰ Ω
Z5U/X7U	B	5,000	+22% to -56%	-55°C to +125°C	2.5% @ 1KHz	10 ¹⁰ Ω
	E	9,000	+22% to -56%	+10°C to +85°C	4% @ 1KHz	10 ¹⁰ Ω
Y5V	G	14,000	+22% to -82%	-30°C to +85°C	5% @ 1KHz	10 ¹⁰ Ω
Maxi	8 (Maxi)	20,000	±15%	-55°C to +125°C	2.5% @ 1KHz	10 ¹⁰ Ω
Plus	9 Maxi Plus	30,000	±15%	-55°C to +125°C	2.5% @ 1KHz	10 ¹⁰ Ω

*See Maxi SLC section - page 69

Microwave SLC's



Single Layer Capacitor Series with or without Borders

GH SERIES: SINGLE LAYER CAPACITOR WITHOUT BORDERS

inches (millimeters)

				GH10 L= 0.010±0.003 (.254±.076) W= 0.010±0.003 (.254±.076) T= 0.005 +0.002; -0.001 (.127 +.051; -.025)		GH15 L= 0.015±0.005 (.381±.127) W= 0.015 +.000; -.003 (.381 +.000; -.076) T= 0.005 +0.002; -0.001 (.127 +.051; -.025)		GH20 L= 0.020±0.005 (.508±.127) W= 0.020 +.000; -.003 (.508 +.000; -.076) T= 0.005 +0.002; -0.001 (.127 +.051; -.025)	
Dielectric Code		"K" Factor	Minimum Capacitance Tolerance	Cap Value (pF)		Cap Value (pF)		Cap Value (pF)	
				min	max	min	max	min	max
Temperature Compensation	A	14	±0.1pF	0.03	0.10	0.05	0.27	0.10	0.47
		35	±0.1pF	0.07	0.28	0.15	0.68	0.28	1.00
		80	±0.1pF	0.15	0.60	0.30	1.50	0.68	2.40
	4	205	±0.25pF	0.45	1.65	0.75	3.90	1.60	6.00
	7	370	±0.25pF	0.75	3.00	1.50	7.50	3.00	11.00
	Y	650	±0.25pF	1.30	5.00	2.50	13.00	5.20	18.00
X7R	C	1200	±10%	2.50	10.00	4.50	24.00	10.00	36.00
		2200	±10%	4.50	18.00	8.50	47.00	18.00	65.00
		5000	±10%	10.50	40.00	20.00	100.00	42.00	150.00
X7U	B	5000	±10%	10.50	40.00	20.00	100.00	42.00	150.00
Z5U	E	9000	±20%	18.00	75.00	35.00	180.00	75.00	265.00
Y5V	G	14000	±20%	28.00	110.00	52.00	270.00	115.00	415.00

GB SERIES: SINGLE LAYER CAPACITOR WITH BORDERS

inches (millimeters)

				GB10 B= 0.002±.001 (.050±.025) L= 0.010±0.003 (.254±.076) W= 0.010±0.003 (.254±.076) T= 0.005 +0.002; -0.001 (.127 +.051; -.025)		GB15 B= 0.002±0.001 (.050±.025) L= 0.015±0.005 (.381±.127) W= 0.015 +.000; -.003 (.381 +.000; -.076) T= 0.005 +0.002; -0.001 (.127 +.051; -.025)		GB20 B= 0.002±0.001 (.050±.025) L= 0.020±0.005 (.508±.127) W= 0.020 +.000; -.003 (.508 +.000; -.076) T= 0.005 +0.002; -0.001 (.127 +.051; -.025)	
Dielectric Code		"K" Factor	Minimum Capacitance Tolerance	Cap Value (pF)		Cap Value (pF)		Cap Value (pF)	
				min	max	min	max	min	max
Temperature Compensation	A	380	±0.25pF	0.10	0.50	0.20	1.10	0.50	2.00
X7U	B	5000	10%	5.6	27.0	15.00	52.00	60.00	90.00

Microwave SLC's



Single Layer Capacitor Series with or without Borders

GH SERIES: SINGLE LAYER CAPACITOR WITHOUT BORDERS

inches (millimeters)

		GH25		GH35		GH50		GH70		GH90	
		L= 0.025±0.005 (.635±.127)		L= 0.035±0.005 (.889±.127)		L= 0.050±0.010 (1.27±.254)		L= 0.070±0.010 (1.78±.254)		L= 0.090±0.010 (2.29±.254)	
		W= 0.025±0.000; -.003 (.635+.000; -.076)		W= 0.035±0.005 (.889±.127)		W= 0.050±0.010 (1.27±.254)		W= 0.070±0.010 (1.78±.254)		W= 0.090±0.010 (2.29±.254)	
		T= 0.005 +0.002; -0.001 (.127 +.051; -.025)		T= 0.005 +0.002; -0.001 (.127 +.051; -.025)		T= 0.005 +0.002; -0.001 (.127 +.051; -.025)		T= 0.007±0.002 (.178±.051)		T= 0.007±0.002 (.178±.051)	
Dielectric Code		Cap Value (pF)		Cap Value (pF)		Cap Value (pF)		Cap Value (pF)		Cap Value (pF)	
		min	max	min	max	min	max	min	max	min	max
Temperature Compensation	A	0.14	0.55	0.47	1.20	0.75	2.70	1.80	3.90	2.40	6.20
		0.35	1.50	1.10	3.00	1.85	6.20	4.30	10.00	5.60	15.00
		0.80	3.30	2.40	6.20	4.30	15.00	10.00	20.00	13.00	33.00
	4	2.05	8.20	6.20	18.00	11.00	39.00	24.00	56.00	33.00	88.00
	7	3.70	15.00	11.00	33.00	20.00	72.00	42.00	100.00	62.00	160.00
	Y	6.50	25.00	20.00	56.00	36.00	125.00	75.00	180.00	110.00	285.00
X7R	C	12.00	50.00	36.00	100.00	68.00	230.00	142.00	330.00	220.00	525.00
		22.00	85.00	68.00	185.00	120.00	430.00	260.00	615.00	360.00	965.00
		50.00	200.00	150.00	430.00	270.00	975.00	600.00	1400.00	820.00	2200.00
X7U	B	50.00	200.00	150.00	430.00	270.00	975.00	600.00	1400.00	820.00	2200.00
Z5U	E	90.00	360.00	270.00	750.00	475.00	1750.00	1100.00	2500.00	1475.00	3950.00
Y5V	G	275.00	470.00	560.00	1000.00	1000.00	2200.00	1600.00	2850.00	2850.00	4450.00

GB SERIES: SINGLE LAYER CAPACITOR WITH BORDERS

inches (millimeters)

		GB25		GB35		GB50		GB70		GB90	
		B= 0.002±.001 (.635±.127)		B= 0.002±.001 (.889±.127)		B= 0.002±.001 (1.27±.254)		B= 0.002±.001 (1.78±.254)		B= 0.002±.001 (2.29±.254)	
		L= 0.025±0.005 (.635±.127)		L= 0.035±0.005 (.889±.127)		L= 0.050±0.010 (1.27±.254)		L= 0.070±0.010 (1.78±.254)		L= 0.090±0.010 (2.29±.254)	
		W= 0.025±0.000; -.003 (.635+.000; -.076)		W= 0.035±0.005 (.889±.127)		W= 0.050±0.010 (1.27±.254)		W= 0.070±0.010 (1.78±.254)		W= 0.090±0.010 (2.29±.254)	
		T= 0.005 +0.002; -0.001 (.127 +.051; -.025)		T= 0.005 +0.002; -0.001 (.127 +.051; -.025)		T= 0.005 +0.002; -0.001 (.127 +.051; -.025)		T= 0.007±0.002 (.178±.051)		T= 0.007±0.002 (.178±.051)	
Dielectric Code		Cap Value (pF)		Cap Value (pF)		Cap Value (pF)		Cap Value (pF)		Cap Value (pF)	
		min	max	min	max	min	max	min	max	min	max
Temperature Compensation	A	1.00	3.10	2.00	7.00	3.75	15.00	7.00	18.50	12.00	31.00
X7U	B	60.00	140.00	175.00	325.00	325.00	750.00	525.00	950.00	950.00	1500.00