

RoHS Compliant

Features

- Maximum capacitance change of $\pm 15\%$ from -55°C to $+125^{\circ}\text{C}$
- Gold terminations 100μ inches over barrier layer
- Excellent bond strength (MIL-STD-883, method 2011.5)
- Available with and without borders

How to Order

GH 35 5 A 6R8 C A 6N
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Type Code

GH	No Border	GB	With Border
-----------	-----------	-----------	-------------

② Case Size

01 to 06	Maxi/ Maxi+/ Ultra Maxi	10 to 90	Standard
-----------------	-------------------------	-----------------	----------

③ Working Voltage Code

5	50WVDC	1	100WVDC
----------	--------	----------	---------

④ Temperature Coefficient

Dielectric code	Dielectric Kind & Ceff.	Temperature Coefficient
A	NP0	0 ± 30 ppm/ $^{\circ}\text{C}$
4	N1500	$\pm 7.5\%$ (non-linear)
7	N2000	-2000 ± 500 ppm/ $^{\circ}\text{C}$
Y	N4700	-4700 ± 1500 ppm/ $^{\circ}\text{C}$
C	X7R	$\pm 15\%$
Z	X7S	$\pm 22\%$
8 (Maxi)	X7R	$\pm 15\%$
9 (Maxi+)	X7R	
0 (Ultra Maxi)	X7R	

⑤ Capacitance

⑥ Capacitance Tolerance Code

K	$\pm 10\%$	Z	$+80$ to -20%
M	$\pm 20\%$	P	$+100$ to 0%

T= 0.178 ± 0.051

⑦ Termination Code

A	Ti/ W+Au	N	Ti/ W+Ni+Au
----------	----------	----------	-------------

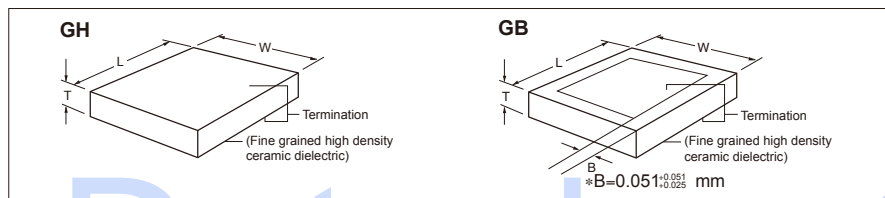
* N only for GB type

* N only for size 10 to 90

⑧ Packaging Code

6N	Antistatic Waffle Pack
-----------	------------------------

Case Dimensions



GH Series

Case Code/ Size		GH16			GH18			GH26			GH35			GH50			GH70			GH90		
Length & Width mm (inch)		0.381 \pm 0.076 (0.015 \pm 0.003)			0.457 \pm 0.076 (0.018 \pm 0.003)			0.635 \pm 0.127 (0.025 \pm 0.005)			0.889 \pm 0.127 (0.035 \pm 0.005)			1.27 \pm 0.254 (0.050 \pm 0.010)			1.78 \pm 0.254 (0.070 \pm 0.010)			2.29 \pm 0.254 (0.090 \pm 0.010)		
Thickness (Min/ Max)		0.114/ 0.305 (0.0045/ 0.012)																				
Code	k	Cap (pF)			Cap (pF)			Cap (pF)			Cap (pF)			Cap (pF)			Cap (pF)			Cap (pF)		
		Min.	Max.	Tol.	Min.	Max.	Tol.	Min.	Max.	Tol.	Min.	Max.	Tol.	Min.	Max.	Tol.	Min.	Max.	Tol.	Min.	Max.	Tol.
A	14	0.06	0.2	A	0.08	0.2	A	0.2	0.4	A	0.4	0.9	A	0.6	2	A	1.3	3.9	A	2.2	5.6	A
	31	0.1	0.4	A	0.2	0.5	A	0.4	1	A	0.7	2	A	1.5	4.7	B	3	8.2	B	5.1	13	C
	60	0.3	1	B	0.4	1.1	A	0.8	2	B	1.5	4.7	B	2.7	9.1	C	6.2	16	D	10	27	G
4	200	0.8	3	C	1.2	3.6	C	2.4	6.8	C	4.7	13	D	8.2	30	G	20	56	G	33	82	G
	420	1.5	5.6	J	2.2	6.2	D	4.3	12	D	8.2	22	J	15	51	G	33	91	G	56	150	G
7	650	2.7	10	K	4.3	11	D	7.5	22	J	15	43	J	27	100	G	62	180	G	110	270	G
	1100	3.3	15	K	6.8	18	J	13	36	J	27	75	J	47	160	J	100	300	J	180	470	J
C	2000	6.2	29	K	13	36	J	24	68	J	47	130	J	82	300	J	220	560	J	330	820	J
	4200	13	60	K	30	75	J	56	150	J	110	300	J	180	680	J	430	1200	J	750	1800	J

Case Code/ Size		GH01		GH02		GH03		GH04		GH05		GH06	
Length & Width mm (inch)		0.381 \pm 0.127 (0.015 \pm 0.005)		0.635 \pm 0.127 (0.025 \pm 0.005)		0.889 \pm 0.127 (0.035 \pm 0.005)		1.27 \pm 0.254 (0.050 \pm 0.010)		1.78 \pm 0.254 (0.070 \pm 0.010)		2.29 \pm 0.254 (0.090 \pm 0.010)	
Thickness (Min/ Max)		0.127/ 0.229 (0.005/ 0.009)											
Code	k	Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
8	20000	68	330	330	750	750	1200	1200	2700	2700	4700	4700	8200
9	30000	330	390	390	1000	1000	1800	1800	3300	3300	6800	6800	10000

Case Code/ Size		GH10		GH15		GH20		GH25		GH35		GH50		GH70		GH90	
Length mm (inch)		0.254 \pm 0.076 (0.010 \pm 0.003)		0.381 \pm 0.127 (0.015 \pm 0.005)		0.508 \pm 0.127 (0.020 \pm 0.005)		0.635 \pm 0.127 (0.025 \pm 0.005)		0.889 \pm 0.127 (0.035 \pm 0.005)		1.27 \pm 0.254 (0.050 \pm 0.010)		1.78 \pm 0.254 (0.070 \pm 0.010)		2.29 \pm 0.254 (0.090 \pm 0.010)	
Width mm (inch)		0.254 \pm 0.076 (0.010 \pm 0.003)		0.381 \pm 0.000, -0.076 (0.015 \pm 0.000, -0.003)		0.508 \pm 0.000, -0.076 (0.020 \pm 0.000, -0.003)		0.635 \pm 0.000, -0.076 (0.025 \pm 0.000, -0.003)		0.889 \pm 0.127 (0.035 \pm 0.005)		1.27 \pm 0.254 (0.050 \pm 0.010)		1.78 \pm 0.254 (0.070 \pm 0.010)		2.29 \pm 0.254 (0.090 \pm 0.010)	
Thickness (Min/ Max)		0.153/ 0.229 (0.006/ 0.009)															
Code	k	Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Z	2500 to 18000	8	90	11	170	23	290	39	440	90	970	130	2200	270	3400	470	5400

Case Code/ Size		GH01		GH02		GH03		GH04		GH05		GH06	
Length & Width mm (inch)		0.381 \pm 0.127 (0.015 \pm 0.005)		0.635 \pm 0.127 (0.025 \pm 0.005)		0.889 \pm 0.127 (0.035 \pm 0.005)		1.27 \pm 0.254 (0.050 \pm 0.010)		1.78 \pm 0.254 (0.070 \pm 0.010)		2.29 \pm 0.254 (0.090 \pm 0.010)	
Thickness (Min/ Max)		0.153/ 0.229 (0.006/ 0.009)											
Code	k	Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Z	2500 to 18000	20	200	35	470	80	800	150	2000	300	3000	500	4700



GB Series

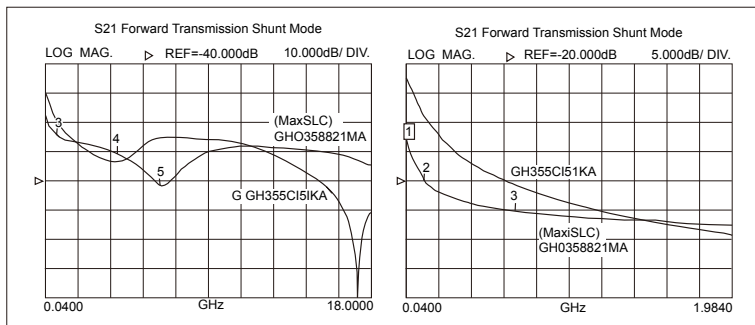
Case Code/ Size		GB15			GB20			GB25			GB30			GB35			GB40			GB50		
Length & Width mm (inch)		0.381±0.051 (0.015±0.002)			0.508±0.051 (0.020±0.002)			0.635±0.051 (0.025±0.002)			0.762±0.051 (0.030±0.002)			0.899±0.051 (0.035±0.002)			1.016±0.051 (0.040±0.002)			1.270±0.051 (0.050±0.002)		
Thickness (Min/ Max)		0.114/ 0.305 (0.0045/ 0.012)																				
(B) Border		0.051±0.051, -0.025 (0.002±0.002, -0.001)																				
Code	k	Cap (pF)			Cap (pF)			Cap (pF)			Cap (pF)			Cap (pF)			Cap (pF)			Cap (pF)		
		Min.	Max.	Tol	Min.	Max.	Tol	Min.	Max.	Tol	Min.	Max.	Tol	Min.	Max.	Tol	Min.	Max.	Tol	Min.	Max.	Tol
A	14	0.06	0.1	A	0.1	0.2	A	0.2	0.3	A	0.3	0.4	A	0.4	0.6	A	0.5	0.9	B	0.8	1.3	B
	31	0.1	0.2	A	0.3	0.4	B	0.4	0.7	B	0.6	1	B	0.8	1.5	C	1.1	2	C	1.8	3	C
	60	0.3	0.4	B	0.5	0.8	C	0.8	1.3	C	1.2	2	C	1.6	3	C	2.2	3.9	C	3.6	6.2	D
4	200	0.9	1.3	D	1.5	2.7	D	2.7	4.7	M	3.9	6.8	K	5.1	9.1	K	6.8	13	K	11	20	K
7	420	1.5	2.4	D	2.7	4.7	M	4.7	8.2	M	6.8	12	K	9.1	16	K	12	22	K	20	36	K
Y	650	2.7	4.7	M	4.7	9.1	M	8.2	15	M	12	22	K	18	30	K	22	39	K	36	62	K
C	1100	4.7	7.5	M	8.2	15	M	15	24	M	22	36	K	30	51	K	39	68	K	62	110	K
	2000	9.1	13	M	16	27	M	27	47	M	39	68	K	51	91	K	68	120	K	110	200	K
	4200	20	33	M	36	62	M	56	100	M	91	150	K	120	200	K	160	270	K	270	430	K

Case Code/ Size		GB01		GB02		GB03		GB04		GB05		GB06	
Length & Width mm (inch)		0.381±0.127 (0.015±0.005)		0.635±0.127 (0.025±0.005)		0.889±0.127 (0.035±0.005)		1.27±0.254 (0.050±0.010)		1.78±0.254 (0.070±0.010)		2.29±0.254 (0.090±0.010)	
Thickness (Min/ Max)		0.127/ 0.229 (0.005/ 0.009)											
(B) Border		0.051±0.025 (0.002±0.001)											
Code	k	Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
8	20000	51	220	220	560	560	1000	1000	2200	2200	4700	4700	8200
9	30000	220	330	330	820	820	1500	1500	2700	2700	6800	6800	10000

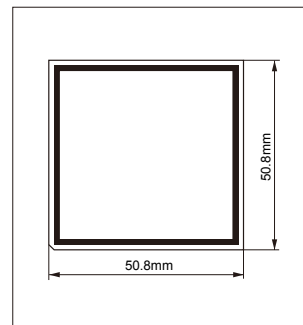
Case Code/ Size		GB10		GB15		GB20		GB25		GB35		GB50		GB70		GB90	
Length mm (inch)		0.254±0.076 (0.010±0.003)		0.381±0.127 (0.015±0.005)		0.508±0.127 (0.020±0.005)		0.635±0.127 (0.025±0.005)		0.889±0.127 (0.035±0.005)		1.27±0.254 (0.050±0.010)		1.78±0.254 (0.070±0.010)		2.29±0.254 (0.090±0.010)	
Width mm (inch)		0.254±0.076 (0.010±0.003)		0.381±0.000, -0.076 (0.015±0.000, -0.003)		0.508±0.000, -0.076 (0.020±0.000, -0.003)		0.635±0.000, -0.076 (0.025±0.000, -0.003)		0.889±0.127 (0.035±0.005)		1.27±0.254 (0.050±0.010)		1.78±0.254 (0.070±0.010)		2.29±0.254 (0.090±0.010)	
Thickness (Min/ Max)		0.153/ 0.229 (0.006/ 0.009)															
(B) Border		0.051±0.025 (0.002±0.001)															
Code	k	Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Z	2500 to 18000	6	70	9	120	20	250	33	380	80	870	120	2000	250	3200	450	5100

Case Code/ Size		GB01		GB02		GB03		GB04		GB05		GB06	
Length & Width mm (inch)		0.381±0.127 (0.015±0.005)		0.635±0.127 (0.025±0.005)		0.889±0.127 (0.035±0.005)		1.27±0.254 (0.050±0.010)		1.78±0.254 (0.070±0.010)		2.29±0.254 (0.090±0.010)	
Thickness (Min/ Max)		0.153/ 0.229 (0.006/ 0.009)											
(B) Border		0.051±0.025 (0.002±0.001)											
Code	k	Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)		Cap (pF)	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Z	2500 to 18000	20	150	30	390	70	700	140	1800	280	2700	470	4500

S21 Forward Transmission Shunt Mode



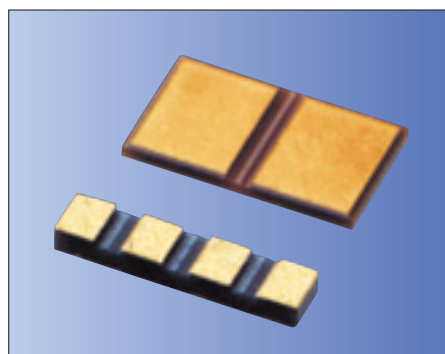
Dimension



Packaging

Waffle Pack

Type	Packaging (pcs.)
GH/ GB10	484
GH/ GB15	400
GH/ GB20	400
GH/ GB25	400
GH/ GB35	400
GH/ GB50	256
GH/ GB70	256
GH/ GB90	100



RoHS Compliant

How to Order

GH B 5 5 A 6R8 K A 6N
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Series

② Number of Array

B	2	C	3	D	4
E	5	F	6		

③ Width Code

(unit: mm)

2	0.508	Y	0.635
3	0.762	4	1.016
5	1.270	S	Custom

④ Working Voltage Code

5	50WVDC
----------	--------

⑤ Temperature Coefficient

Z	X7S	8	X7R (maxi)
		9	X7R (maxi+)

⑥ Capacitance

⑦ Capacitance Tolerance Code

M*	±20%	P	+100 to 0%
Z	+80 to -20%		*option

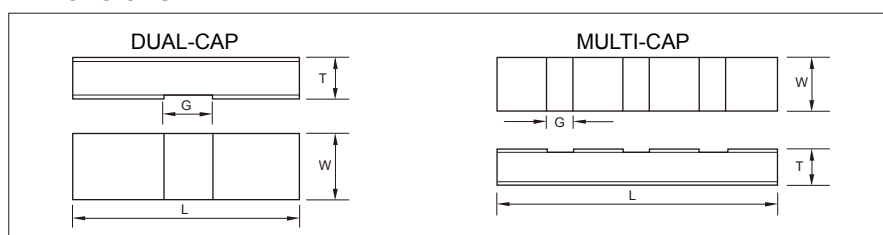
⑧ Termination Code

A	Ti/ W+Au	N	Ti/ W+Ni+Au
----------	----------	----------	-------------

⑨ Packaging Code

6N	Antistatic Waffle Pack
-----------	------------------------

Dimensions



Specifications

GHB series

(unit: pF)

Type	Size	Dielectric Code	Z	8	9
GHB2	L = 1.27±0.254 W = 0.432 to 0.508 T = 0.203±0.051 G = 0.127±0.254	Cap (pF)	25 to 220	200 to 350	270 to 450
GHB5	L = 2.032±0.381 W = 0.559 to 0.635 T = 0.203±0.051 G = 0.127±0.254	Cap (pF)	54 to 500	430 to 780	600 to 1000
GHB3	L = 2.032±0.381 W = 0.686 to 0.762 T = 0.203±0.051 G = 0.127±0.254	Cap (pF)	65 to 600	520 to 940	730 to 1200
GHB4	L = 2.032±0.381 W = 0.944 to 1.02 T = 0.203±0.051 G = 0.127±0.254	Cap (pF)	88 to 770	700 to 1200	980 to 1500
GHB5	L = 2.032±0.381 W = 1.194 to 1.270 T = 0.203±0.051 G = 0.127±0.254	Cap (pF)	100 to 960	870 to 1500	1200 to 1900

GHC/ GHD/ GHE/ GHF series

(unit: pF)

Type	Size	Dielectric Code	Z	8	9
GH-2	3: L = 1.65±0.254 4: L = 2.29±0.254 5: L = 2.92±0.254 6: L = 3.56±0.254 Pad = 0.508×0.381 W = 0.508±0.127 T = 0.203±0.051 G = 0.127 to 0.254	Cap (pF)	20 to 120	140 to 200	200 to 300
GH-Y	3: L = 1.65±0.254 4: L = 2.29±0.254 5: L = 2.92±0.254 6: L = 3.56±0.254 Pad = 0.635×0.381 W = 0.635±0.127 T = 0.203±0.051 G = 0.127 to 0.254	Cap (pF)	25 to 150	170 to 250	250 to 370
GH-3	3: L = 1.65±0.254 4: L = 2.29±0.254 5: L = 2.92±0.254 6: L = 3.56±0.254 Pad = 0.762×0.381 W = 0.762±0.127 T = 0.203±0.051 G = 0.127 to 0.254	Cap (pF)	30 to 180	210 to 300	300 to 450
GH-6	3: L = 1.65±0.254 4: L = 2.29±0.254 5: L = 2.92±0.254 6: L = 3.56±0.254 Pad = 1.02×0.381 W = 1.02±0.127 T = 0.203±0.051 G = 0.127 to 0.254	Cap (pF)	40 to 250	280 to 400	400 to 600