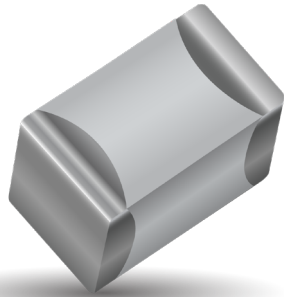


RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

Ultra-Low ESR "KGU" Series COG (NP0) Capacitors



GENERAL INFORMATION

"KGU" Series capacitors are COG (NP0) chip capacitors specially designed for "Ultra" low ESR for applications in the communications market. Sizes available are EIA chip sizes 01005 through 0805. This series also features high self-resonance frequencies.

APPLICATIONS

- Cellular Base Stations
- Broadband Wireless Services
- Satellite Communications
- Subscriber-based Wireless Devices
- WiFi (802.11)
- Public Safety Radio

CIRCUIT APPLICATIONS

- Filter Networks
- High Q Frequency Sources
- Matching Networks
- Tuning, Coupling, Bypass and DC Blocking

HOW TO ORDER

KGU	02	A	CG	1C	100	J	H
Series General Purpose Tin/ Nickel Finish	Size 02 = 01005 05 = 0402 15 = 0603 21 = 0805	Thickness See Cap Chart	Dielectric COG (NP0)=CG	Voltage 1C = 16V 1E = 25V 2A = 100v 2D = 200V 2E = 250V	Capacitance Code Two Significant Digits + Number of Zeroes eg. 10µF = 106 10nF = 103 47pF = 470	Tolerance A = ±0.05 pF (<10pF) B = ±1.0 pF (<10pF) C = ±2.5 pF (<10pF) D = ±5.0 pF (<10pF) F = ±1% (≥10pF) G = ±2% (≥10pF) J = ±5% (≥10pF) K = ±10% (≥10pF) M = +/- 20%	Packaging See Table Below



ENVIRONMENTAL CHARACTERISTICS

Thermal Shock	5 Cycles, -55°C to 125°C
Life Test	1000 hours at 125°C at 2X
Solderability	Solder Coverage > 90% of end termination
Terminal Strength	2 lbs. typ., 1 lb. min.

PACKAGING CODE

Packaging Code	Size Code	EIA (Inch)	IEC (mm)	Width	Pitch	Material	Reel Size
H	02/05	01005/ 0402	0402/ 1005	8mm	2mm	Paper	7"
P*	02	01005	0402	4mm	1mm	Embossed	
T	15	0603	1608	8mm	4mm	Paper	
U	21	0805	2012	8mm	4mm	Embossed	
N	02/05	01005/ 0402	0402/ 1005	8mm	2mm	Paper	13"
M	15	0603	1608	8mm	4mm	Paper	
L	21	0805	2012	8mm	4mm	Embossed	

* Please check with factory for availability of this packaging option

ELECTRICAL SPECIFICATIONS

Temperature Coefficient of Capacitance (TC)	0±30 ppm/°C (-55° to +125°C)
Quality Factor	C < 30pf ≥ 800 + 20X CAP @ 1MHz C ≥ 30pf ≥ 1500 @ 1MHz
Insulation Resistance (IR)	10 ⁵ Megohms min. @ 25°C at rated WVDC 10 ⁴ Megohms min. @ 125°C at rated WVDC
Dielectric Withstanding Voltage (DWV)	250% of rated WVDC for 5 seconds
Aging Effects	None
Piezoelectric Effects	None

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CAPACITANCE RANGE

SIZE		01005		0402		0603		0805	
Soldering		All Paper		All Paper		All Paper		All Embossed	
(L) Length	mm	0.4±0.02mm		1.02±0.10		1.60±0.15		2.01±0.20	
	(in.)	(0.016±0.0008)		(0.040±0.004)		(0.063±0.006)		(0.079±0.008)	
(W) Width	mm	0.2±0.02mm		0.51±0.10		0.81±0.15		1.24±0.20	
	(in.)	(0.008±0.0008)		(0.020±0.004)		(0.032±0.006)		(0.049±0.008)	
(t) Terminal	mm	0.1±0.03		0.25±0.15		0.36±0.15		0.51±0.25	
	(in.)	(0.004±0.001)		(0.010±0.006)		(0.014±0.006)		(0.020±0.010)	
WVDC		16	25	100	200	100	250	100	250
Cap	0.1			F	F	A	A	R	R
(pF)	0.2	A	A	F	F	A	A	R	R
	0.3			F	F	A	A	R	R
	0.4			F	F	A	A	R	R
	0.5	A	A	F	F	A	A	R	R
	0.6			F	F	A	A	R	R
	0.7			F	F	A	A	R	R
	0.8			F	F	A	A	R	R
	0.9			F	F	A	A	R	R
	1.0	A	A	F	F	A	A	R	R
	1.1			F	F	A	A	R	R
	1.2			F	F	A	A	R	R
	1.3			F	F	A	A	R	R
	1.5	A	A	F	F	A	A	R	R
	1.6			F	F	A	A	R	R
	1.8			F	F	A	A	R	R
	2.0	A	A	F	F	A	A	R	R
	2.2			F	F	A	A	R	R
	2.4			F	F	A	A	R	R
	2.7			F	F	A	A	R	R
	3.0	A	A	F	F	A	A	R	R
	3.3			F	F	A	A	R	R
	3.6			F	F	A	A	R	R
	3.9			F	F	A	A	R	R
	4.0	A	A	F	F	A	A	R	R
	4.3			F	F	A	A	R	R
	4.7			F	F	A	A	R	R
	5.0	A	A	F	F	A	A	R	R
	5.1			F	F	A	A	R	R
	5.6			F	F	A	A	R	R
	6.0	A	A	F	F	A	A	R	R
	6.2			F	F	A	A	R	R
	6.8			F	F	A	A	R	R
	7.0	A	A	F	F	A	A	R	R
	7.5			F	F	A	A	R	R
	8.0	A	A	F	F	A	A	R	R
	8.2			F	F	A	A	R	R
	9.0	A	A	F	F	A	A	R	R
	9.1			F	F	A	A	R	R
	10	A	A	F	F	A	A	R	R
	11			F	F	A	A	R	R
	12	A	A	F	F	A	A	R	R
	15	A		F	F	A	A	R	R
	18	A		F	F	A	A	R	R
	20			F	F	A	A	R	R
	22	A		F	F	A	A	R	R
	24	A				A	A	R	R
	27					A	A	R	R
	30					A	A	R	R
	33					A	A	R	R
	36					A	A	R	R
	39					A	A	R	R
WVDC		16	25	100	200	100	250	100	250
SIZE		01005		0402		0603		0805	

SIZE		0603		0805	
Soldering		All Paper		All Embossed	
(L) Length	mm	1.60±0.15		2.01±0.20	
	(in.)	(0.063±0.006)		(0.079±0.008)	
(W) Width	mm	0.81±0.15		1.24±0.20	
	(in.)	(0.032±0.006)		(0.049±0.008)	
(t) Terminal	mm	0.36±0.15		0.51±0.25	
	(in.)	(0.014±0.006)		(0.020±0.010)	
WVDC		100	250	100	250
Cap	43	A	A	R	R
(pF)	47	A	A	R	R
	51	A	A	R	R
	56	A	A	R	R
	62	A	A	R	R
	68	A	A	R	R
	75	A	A	R	R
	82	A	A	R	R
	91	A	A	R	R
	100	A	A	R	R
WVDC		100	250	100	250
SIZE		0603		0805	

TOLERANCE OPTIONS

Case Size	Tolerance Options	
	Capacitance Range	Available Tolerances
01005	0.2pF-5.0pF	B,C
	6.0pF-9.0pF	C,D
	10.0pF- 24.0pF	J,K
0402/0603/0805	0.1pF-0.2pF	A,B
	0.3pF-0.9pF	A,B,C
	1.0pF-6.2pF	A,B,C,D
	6.8pF-9.1pF	B,C,J,K
	10pF-100pF	F,G,J,K,M

*Please refer to capacitance values table to confirm capacitance availability

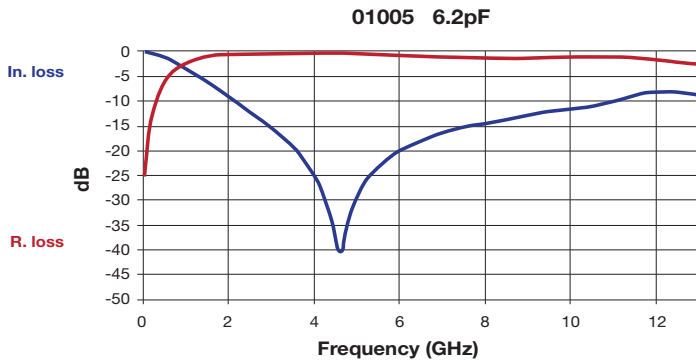
NOTE: Contact factory for non-specified capacitance values

Case Size	01005 (KGU02)	0402 (KGU05)	0603 (KGU15)	0805 (KGU21)
Thickness Letter	A	F	A	R
Max Thickness(mm)	0.22	0.60	0.90	1.3
Carrier Tape	PAPER	PAPER	PAPER	EMBOSSSED
Packaging Code 7"reel	H	H	T	U
Packaging Code 13"reel		N	M	L
	PAPER			EMBOSSSED

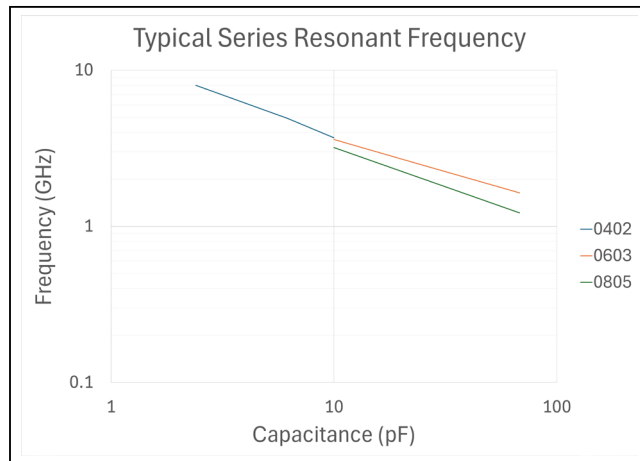
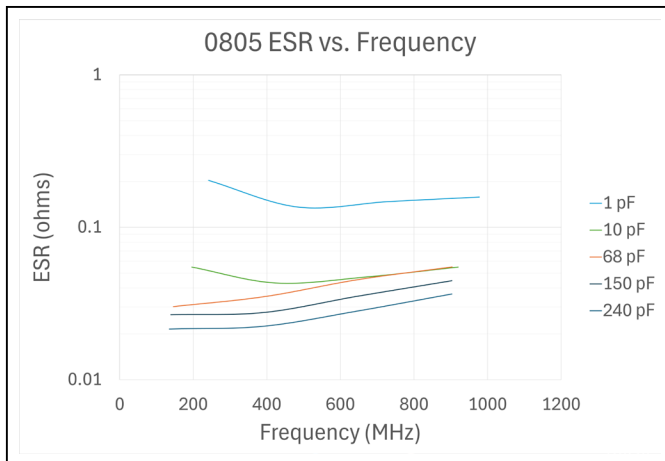
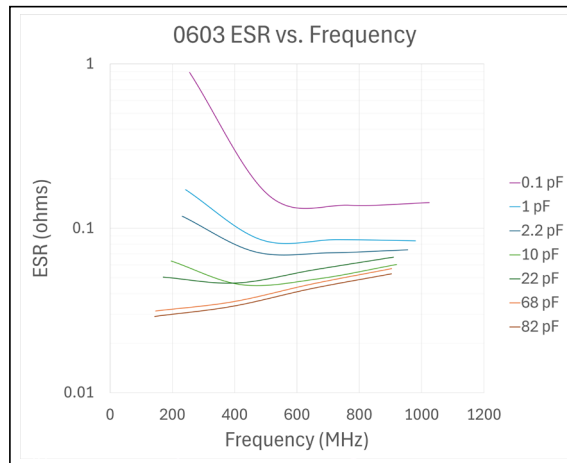
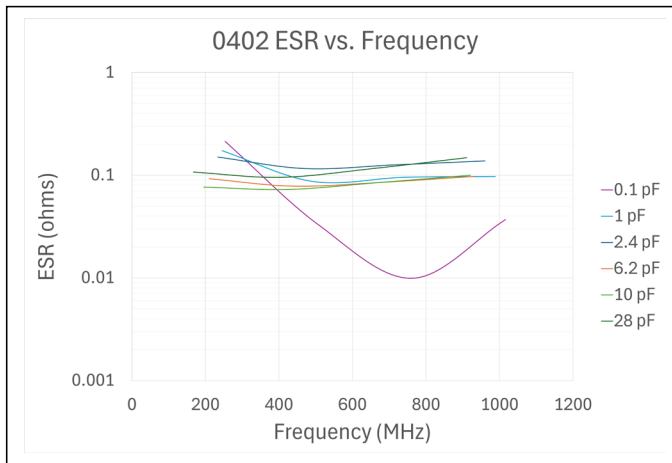
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ULTRA LOW ESR, KGU SERIES



	F (GHz)	IL	R. loss
F1	0.31	-0.40	-9.68
F2	1.28	-5.03	-1.44
F3	2.408	-11.58	-0.27
F4	4.635	-40.55	-0.39
F5	4.897	-31.82	-0.47



Mouser Electronics

Authorized Distributor

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[KGU21RCG2E150FU](#) [KGU21RCG2E8R2BU](#) [KGU15ACG2E7R5BT](#) [KGU15ACG2E8R2BT](#) [KGU15ACG2E220FT](#)
[KGU15ACG2E820GT](#) [KGU21RCG2E5R6BU](#) [KGU15ACG2E100GT](#) [KGU21RCG2E180FU](#) [KGU15ACG2E180FT](#)
[KGU21RCG2E120FU](#) [KGU02ACG1ER50CH](#) [KGU21RCG2E6R8BU](#) [KGU15ACG2E120FT](#) [KGU21RCG2E6R2BU](#)
[KGU15ACG2E270JT](#) [KGU21RCG2E470FU](#) [KGU02ACG1C1R0BH](#) [KGU02ACG1C3R0BH](#) [KGU21RCG2E9R1BU](#)
[KGU15ACG2E5R6BT](#) [KGU02ACG1C2R0BH](#)