MURATA PRODUCTS Lineup 2014

muRata
Innovator in Electronics

2014 MURATA PRODUCTS Lineup


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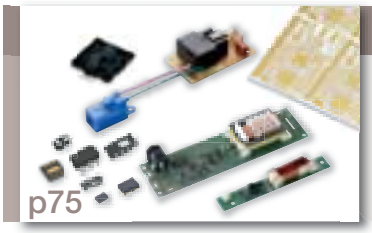
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Capacitors

The No. 1 most abundant lineup in the industry, responding to all possible needs, and proposing ideal solutions.

Summary

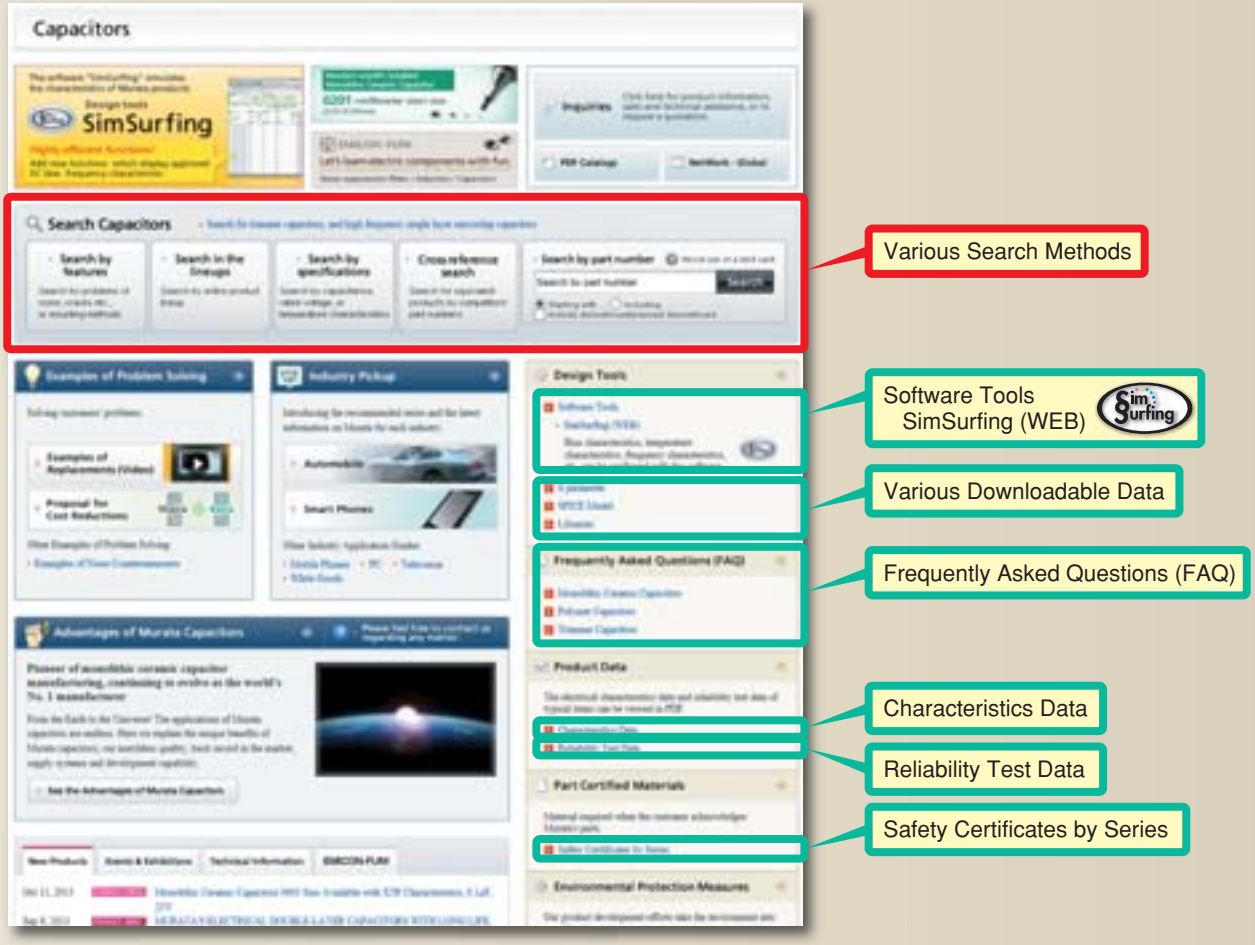
Using Murata's unique material technology, we offer a variety of capacitors covering a wide range of voltages. Murata also offers technical support that includes design kits and a comprehensive set of software tools to simulate virtually any circuit condition, satisfying the demands of many applications.

Lineup

- Ceramic Capacitors (SMD, lead type, mold type)
- Polymer Aluminum Electrolytic Capacitors
- Ceramic Trimmer Capacitors
- Electrical Double Layer Capacitors

Web Content

Convenient search
Substantial technical information



http://www.murata.com/products/capacitor/

Chip Monolithic Ceramic Capacitors For General Purpose

For General Purpose

Temperature Compensating Type

GRM

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
			0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
GRM02	0.4X0.2 <01005>	16	0.20pF – 47pF
		10	56pF – 100pF
GRM03	0.6X0.3 <0201>	100	0.10pF – 15pF
		50	0.10pF – 120pF
GRM15	1.0X0.5 <0402>	100	0.10pF – 100pF
		50	0.10pF – 1000pF
		10	1200pF – 4700pF
GRM18	1.6X0.8 <0603>	100	0.50pF – 1500pF
		50	0.50pF – 10000pF
		10	5600pF – 22000pF
GRM21	2.0X1.25 <0805>	250	10pF – 5600pF
		200	10pF – 5600pF
		100	100pF – 3300pF
		50	1200pF – 47000pF
		10	56000pF – 0.10μF
GRM31	3.2X1.6 <1206>	2k	10pF – 68pF
		1k	10pF – 1000pF
		630	10pF – 4700pF
		500	10pF – 4700pF
		250	2700pF – 22000pF
		200	2700pF – 10000pF
		100	1800pF – 22000pF
		50	12000pF – 0.10μF
		25	0.12μF
		16	0.12μF
GRM32	3.2X2.5 <1210>	2k	82pF – 220pF
		1k	1200pF – 2200pF
		630	1200pF – 10000pF
		500	1200pF – 10000pF
		250	27000pF – 47000pF
GRM42	4.5X2.0 <1808>	3.15k	10pF – 100pF
GRM43	4.5X3.2 <1812>	1k	2700pF – 4700pF
		630	12000pF – 22000pF
		500	12000pF – 22000pF
GRM55	5.7X5.0 <2220>	1k	5600pF – 10000pF
		630	27000pF – 47000pF
		500	27000pF – 47000pF

Continued on the following page.

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

High Dielectric Constant Type

GRM

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
GRM02	0.4X0.2 <01005>	10	100pF – 10000pF
		6.3	1000pF – 0.10μF
		4	15000pF – 0.10μF
GRM03	0.6X0.3 <0201>	50	100pF – 1500pF
		25	100pF – 0.10μF
		16	2200pF – 0.10μF
		10	4700pF – 0.22μF
		6.3	4700pF – 0.22μF
		4	0.22μF
GRM15	1.0X0.5 <0402>	100	220pF – 4700pF
		50	220pF – 0.10μF
		35	0.22μF – 1.0μF
		25	2200pF – 2.2μF
		16	3300pF – 2.2μF
		10	15000pF – 2.2μF
		6.3	0.10μF – 4.7μF
		4	0.10μF – 10μF
		2.5	0.10μF – 10μF
GRM18	1.6X0.8 <0603>	250	220pF – 2200pF
		200	220pF – 2200pF
		100	220pF – 0.10μF
		50	220pF – 2.2μF
		35	2.2μF – 4.7μF
		25	10000pF – 10μF
		16	0.15μF – 10μF
		10	0.33μF – 10μF
		6.3	4.7μF – 22μF
		4	22μF
GRM21	2.0X1.25 <0805>	250	1000pF – 22000pF
		200	1000pF – 22000pF
		100	10000pF – 0.47μF
		50	10000pF – 4.7μF
		35	2.2μF – 4.7μF
		25	68000pF – 22μF
		16	0.33μF – 22μF
		10	2.2μF – 47μF
		6.3	10μF – 47μF
		4	10μF – 47μF
		2.5	47μF
GRM31	3.2X1.6 <1206>	1k	470pF – 10000pF
		630	1000pF – 22000pF
		250	15000pF – 0.10μF
		200	15000pF – 0.10μF
		100	0.47μF – 2.2μF
		50	0.47μF – 10μF
		35	10μF
		25	0.33μF – 22μF
		16	4.7μF – 22μF

Continued on the following page.

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
			0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
GRM31	3.2X1.6 <1206>	10	22μF 47μF
		6.3	22μF 100μF
		4	47μF 100μF
GRM32	3.2X2.5 <1210>	1k	6800pF 22000pF
		630	22000pF 47000pF
		250	68000pF 0.22μF
		200	68000pF 0.22μF
		100	1.0μF 2.2μF
		80	4.7μF
		63	10μF
		50	4.7μF 10μF
		35	10μF
		25	10μF 22μF
		16	22μF 47μF
		10	47μF 100μF
		6.3	47μF 100μF
		4	100μF
GRM43	4.5X3.2 <1812>	1k	33000pF 47000pF
		630	68000pF 0.10μF
		250	0.15μF 0.47μF
		200	0.15μF 0.47μF
GRM55	5.7X5.0 <2220>	1k	68000pF 0.10μF
		630	0.15μF 0.22μF
		250	0.33μF 1.0μF
		200	0.33μF 1.0μF

Low ESL Type

LW Reversed Type

LLL

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
			0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
LLL15	0.5X1.0 <0204>	6.3	0.10μF 0.22μF
		4	0.47μF 1.0μF
LLL18	0.8X1.6 <0306>	50	2200pF 4700pF
		25	10000pF 22000pF
		16	22000pF 47000pF
		10	0.10μF 0.22μF
		4	0.22μF 2.2μF
LLL1U	0.6X1.0 <02404>	4	4.3μF
LLL21	1.25X2.0 <0508>	50	10000pF 22000pF
		25	22000pF 0.10μF
		16	47000pF 0.22μF
		10	0.22μF 1.0μF
		6.3	0.47μF
		4	1.0μF 2.2μF
LLL31	1.6X3.2 <0612>	50	10000pF 0.10μF
		25	47000pF 0.47μF
		16	0.22μF 1.0μF

Continued on the following page.

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F) 0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
LLL31	1.6X3.2 <0612>	10	0.47μF – 2.2μF
		6.3	2.2μF – 10μF

Controlled ESR Type

LLR

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F) 0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
LLR18	0.8X1.6 <0306>	4	1.0μF

8 Terminal Type

LLA

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F) 0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
LLA18	1.6X0.8 <0603>	4	0.10μF – 2.2μF
LLA21	2.0X1.25 <0805>	25	10000pF – 47000pF
		16	47000pF – 0.22μF
		10	0.22μF – 0.47μF
		6.3	0.47μF – 1.0μF
		4	1.0μF – 4.7μF
LLA31	3.2X1.6 <1206>	16	0.22μF – 1.0μF
		10	0.47μF – 2.2μF
		6.3	1.0μF – 2.2μF

10 Terminal Type

LLM

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F) 0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
LLM21	2.0X1.25 <0805>	25	10000pF – 22000pF
		16	47000pF – 0.10μF
		6.3	0.22μF – 0.47μF
		4	1.0μF
LLM31	3.2X1.6 <1206>	16	0.10μF – 0.22μF
		10	0.47μF
		6.3	2.2μF

High Frequency HiQ Type (0402 Size Max.)

GJM

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F) 0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
GJM02	0.4X0.2 <01005>	25	0.20pF – 22pF
GJM03	0.6X0.3 <0201>	25	0.20pF – 33pF
GJM15	1.0X0.5 <0402>	50	0.10pF – 47pF

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

High Frequency HiQ Type (0603 Size Min.)

GQM

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
GQM18	1.6X0.8 <0603>	250	1.0pF – 47pF
		100	1.0pF – 6.8pF
		50	7.0pF – 100pF
GQM21	2.0X1.25 <0805>	250	1.0pF – 100pF
		100	1.0pF – 18pF
		50	20pF – 100pF
GQM22	2.8X2.8 <1111>	500	1.0pF – 100pF

Product for Bonding/AuSn Soldering

GMD

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
GMD03	0.6X0.3 <0201>	25	100pF – 1500pF
		16	1800pF – 3300pF
		10	3900pF – 10000pF
		6.3	56000pF – 0.10μF
GMD15	1.0X0.5 <0402>	50	220pF – 4700pF
		25	5600pF – 47000pF
		16	56000pF – 0.10μF
		10	0.12μF – 0.47μF

Top & Bottom Electrode Type for Bonding

GMA

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
GMA05	0.5X0.5 <0202>	100	100pF – 1000pF
		25	1500pF – 4700pF
		10	6800pF – 22000pF
		6.3	0.10μF
GMA08	0.8X0.8 <0303>	100	1500pF – 6800pF
		25	10000pF – 22000pF
		10	33000pF – 0.10μF
		6.3	0.47μF
GMA0D	0.38X0.38 <015015>	10	10000pF

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

Resin External Electrode Type

GRJ

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
GRJ21	2.0X1.25 <0805>	250	1000pF – 22000pF
GRJ31	3.2X1.6 <1206>	1k	470pF – 10000pF
		630	1000pF – 22000pF
		250	15000pF – 0.10μF
GRJ32	3.2X2.5 <1210>	1k	6800pF – 22000pF
		630	22000pF – 47000pF
		250	68000pF – 0.22μF
GRJ43	4.5X3.2 <1812>	1k	33000pF – 47000pF
		630	68000pF – 0.10μF
		250	0.15μF – 0.47μF
GRJ55	5.7X5.0 <2220>	1k	68000pF – 0.10μF
		630	0.15μF – 0.22μF
		250	0.33μF – 1.0μF

For LCD Backlight Inverter Circuit Only

GRM

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
GRM42	4.5X2.0 <1808>	3.15k	5.0pF – 47pF

High Effective Capacitance & High Ripple Resistance

GR3

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
GR321	2.0X1.25 <0805>	250	10000pF – 22000pF
GR331	3.2X1.6 <1206>	630	10000pF – 15000pF
		450	10000pF – 47000pF
		250	33000pF – 68000pF
GR332	3.2X2.5 <1210>	630	22000pF – 47000pF
		450	68000pF – 0.10μF
		250	0.10μF – 0.15μF
GR343	4.5X3.2 <1812>	630	68000pF
		450	0.15μF
		250	0.22μF – 0.33μF
GR355	5.7X5.0 <2220>	630	0.10μF – 0.27μF
		450	0.22μF – 0.56μF
		250	0.47μF – 1.0μF

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

For Ethernet LAN & Primary-secondary Coupling of DC-DC Converters

GR4

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
GR442	4.5X2.0 <1808>	2k	100pF – 1500pF
GR443	4.5X3.2 <1812>	2k	1800pF – 4700pF
GR455	5.7X5.0 <2220>	2k	10000pF

For Camera Flash Units Only

GR7

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
GR721	2.0X1.25 <0805>	350	10000pF – 27000pF
GR731	3.2X1.6 <1206>	350	10000pF – 47000pF

Safety Standard Certified

The Electrical Appliance and Material Safety Law of Japan

GA2

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (V)	Capacitance Range (F)
GA242	4.5X2.0 <1808>	AC250 (r.m.s.)	470pF – 1000pF
GA243	4.5X3.2 <1812>	AC250 (r.m.s.)	2200pF – 47000pF
GA255	5.7X5.0 <2220>	AC250 (r.m.s.)	0.10μF

Type GF (IEC60384-14 Y2, X1/Y2 Class)

GA3

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (V)	Capacitance Range (F)
GA342	4.5X2.0 <1808>	AC250 (r.m.s.)	10pF – 1000pF
GA352	5.7X2.8 <2211>	AC250 (r.m.s.)	100pF – 1500pF
GA355	5.7X5.0 <2220>	AC250 (r.m.s.)	1800pF – 4700pF

Type GD (IEC60384-14 Y3 Class)

GA3

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (V)	Capacitance Range (F)
GA342	4.5X2.0 <1808>	AC250 (r.m.s.)	10pF – 1500pF
GA343	4.5X3.2 <1812>	AC250 (r.m.s.)	1800pF – 4700pF

Continued on the following page.

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

Type GB (UL, IEC60384-14 X2 Class)

GA3

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (V)	Capacitance Range (F)
GA355	5.7X5.0 <2220>	AC250 (r.m.s.)	10000pF – 56000pF

Metal Terminal Type

High Effective Capacitance

KRM

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
KRM21	2.2X1.25	25	10µF
		16	10µF
KRM31	3.5X1.7	100	1.0µF
		50	4.7µF
		35	10µF
		25	10µF
	3.6X1.7	50	2.2µF
	3.7X1.85	100	2.2µF
KRM55	6.1X5.3	1k	68000pF – 0.22µF
		630	0.15µF – 0.47µF
		250	0.68µF – 2.2µF
		100	4.7µF – 15µF
		63	4.7µF – 22µF
		50	4.7µF – 22µF
		35	10µF – 33µF
		25	15µF – 47µF

High Effective Capacitance & High Ripple Resistance

KR3

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
KR355	6.1X5.3	630	0.10µF – 0.56µF
		450	0.22µF – 1.2µF
		250	0.47µF – 2.2µF

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

Chip Monolithic Ceramic Capacitors For Automotive

For Automotive (General Purpose)

Temperature Compensating Type

GCM

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
GCM03	0.6X0.3 <0201>	25	1.0pF – 100pF
GCM15	1.0X0.5 <0402>	50	1.0pF – 470pF
GCM18	1.6X0.8 <0603>	100	1.0pF – 1500pF
		50	1.0pF – 3900pF
GCM21	2.0X1.25 <0805>	250	100pF – 5600pF
		100	100pF – 3300pF
		50	1000pF – 22000pF
GCM31	3.2X1.6 <1206>	1k	10pF – 1000pF
		630	10pF – 4700pF
		250	2700pF – 10000pF
		100	1800pF – 10000pF
		50	3900pF – 56000pF
GCM32	3.2X2.5 <1210>	1k	1200pF – 2200pF
		630	1200pF – 10000pF
GCM43	4.5X3.2 <1812>	1k	2700pF – 4700pF
		630	12000pF – 22000pF
GCM55	5.7X5.0 <2220>	1k	5600pF – 10000pF
		630	27000pF – 47000pF

Capacitance Range (F): 0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ

High Dielectric Constant Type

GCM

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
GCM03	0.6X0.3 <0201>	25	100pF – 1500pF
		16	2200pF – 3300pF
		10	4700pF – 10000pF
GCM15	1.0X0.5 <0402>	100	220pF – 4700pF
		50	220pF – 0.10μF
		25	10000pF – 47000pF
		16	33000pF – 0.22μF
GCM18	1.6X0.8 <0603>	100	1000pF – 22000pF
		50	1000pF – 0.22μF
		25	33000pF – 1.0μF
		16	0.10μF – 1.0μF
		6.3	2.2μF
GCM21	2.0X1.25 <0805>	100	6800pF – 0.10μF
		50	33000pF – 1.0μF
		35	0.68μF – 1.5μF
		25	0.15μF – 2.2μF
		16	0.68μF – 4.7μF

Capacitance Range (F): 0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ

Continued on the following page.

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
GCM21	2.0X1.25 <0805>	10	2.2µF – 10µF
		6.3	10µF
GCM31	3.2X1.6 <1206>	100	0.10µF – 1.0µF
		50	0.33µF – 4.7µF
		25	2.2µF – 10µF
		16	4.7µF – 10µF
		10	10µF
		6.3	22µF
GCM32	3.2X2.5 <1210>	50	1.0µF – 10µF
		35	10µF
		25	4.7µF – 10µF
		16	10µF – 22µF
		10	22µF
		6.3	47µF

Resin External Electrode Type

GCJ

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
GCJ18	1.6X0.8 <0603>	100	1000pF – 22000pF
		50	1000pF – 0.10µF
		35	33000pF – 68000pF
		25	1000pF – 0.22µF
		16	10000pF – 0.47µF
		10	0.12µF – 0.22µF
GCJ21	2.0X1.25 <0805>	250	1000pF – 22000pF
		100	220pF – 0.10µF
		50	330pF – 1.0µF
		35	0.12µF – 0.47µF
		25	470pF – 2.2µF
		16	0.27µF – 4.7µF
		10	2.2µF – 10µF
GCJ31	3.2X1.6 <1206>	1k	1000pF – 10000pF
		630	1000pF – 22000pF
		250	15000pF – 0.10µF
		100	0.10µF – 1.0µF
		50	0.10µF – 4.7µF
		35	0.56µF – 1.0µF
		25	0.10µF – 10µF
		16	1.0µF – 10µF
		10	6.8µF – 10µF
		6.3	22µF
GCJ32	3.2X2.5 <1210>	1k	15000pF – 22000pF
		630	6800pF – 47000pF
		250	68000pF – 0.22µF
		100	2.2µF
		50	4.7µF – 10µF
		25	4.7µF – 10µF
		16	22µF

Continued on the following page.

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F) 0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
GCJ43	4.5X3.2 <1812>	1k	33000pF – 47000pF
		630	33000pF – 0.10μF
		250	0.15μF – 0.47μF
GCJ55	5.7X5.0 <2220>	1k	68000pF – 0.10μF
		630	0.10μF – 0.22μF
		250	0.33μF – 1.0μF

Specially Designed Product to Reduce Shorts

GCD

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F) 0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
GCD18	1.6X0.8 <0603>	100	1000pF – 22000pF
		50	1000pF – 22000pF
		25	27000pF – 47000pF
GCD21	2.0X1.25 <0805>	100	1000pF – 0.10μF
		50	1000pF – 0.10μF

Specially Designed Product to Reduce Shorts & Resin Electrode Product

GCE

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F) 0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
GCE18	1.6X0.8 <0603>	100	1000pF – 22000pF
		50	1000pF – 22000pF
GCE21	2.0X1.25 <0805>	100	1000pF – 0.10μF
		50	1000pF – 0.10μF

Conductivity Adhesive Compatible Type

Temperature Compensating Type

GCG

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F) 0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
GCG18	1.6X0.8 <0603>	50	10pF – 2200pF
GCG21	2.0X1.25 <0805>	50	100pF – 10000pF

Continued on the following page.

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

High Dielectric Constant Type

GCG

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
GCG15	1.0X0.5 <0402>	50	220pF – 4700pF
		25	5600pF – 10000pF
		16	15000pF – 0.10μF
GCG18	1.6X0.8 <0603>	100	1000pF – 68000pF
		50	220pF – 0.22μF
		25	0.12μF – 0.47μF
		16	0.15μF – 0.22μF
GCG21	2.0X1.25 <0805>	50	27000pF – 0.22μF
		25	0.10μF – 1.0μF
		16	0.33μF – 4.7μF
GCG31	3.2X1.6 <1206>	25	1.0μF – 4.7μF
		16	1.0μF – 4.7μF
GCG32	3.2X2.5 <1210>	25	3.3μF – 10μF

High Effective Capacitance & High Ripple Resistance

GC3

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)
GC321	2.0X1.25 <0805>	250	10000pF – 22000pF
GC331	3.2X1.6 <1206>	630	10000pF – 15000pF
		450	10000pF – 47000pF
		250	33000pF – 68000pF
GC332	3.2X2.5 <1210>	630	22000pF – 47000pF
		450	68000pF – 0.10μF
		250	0.10μF – 0.15μF
GC343	4.5X3.2 <1812>	630	68000pF
		450	0.15μF
		250	0.22μF – 0.33μF
GC355	5.7X5.0 <2220>	630	0.10μF – 0.27μF
		450	0.22μF – 0.56μF
		250	0.47μF – 1.0μF

Metal Terminal Type

High Effective Capacitance

KCM

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
KCM55	6.1X5.3	100	4.7μF – 15μF

Continued on the following page.

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
KCM55	6.1X5.3	63	4.7µF – 22µF
		50	4.7µF – 22µF
		35	10µF – 33µF
		25	15µF – 47µF

High Effective Capacitance & High Ripple Resistance

KC3

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
KC355	6.1X5.3	630	0.10µF – 0.56µF
		450	0.22µF – 1.2µF
		250	0.47µF – 2.2µF

Lead Type Ceramic Capacitors For General Purpose

Radial Lead Type

Temperature Compensating Type

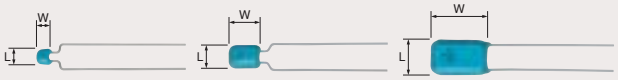
RDE

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
RDE5C	4.0X3.5	100	1.0pF – 1500pF
		50	1.0pF – 3900pF
	4.5X3.5	100	1800pF – 3300pF
		50	4700pF – 22000pF
	5.0X3.5	100	1.0pF – 3300pF
		50	1.0pF – 22000pF
RDE7U	4.5X3.5	250	100pF – 4700pF
	5.5X4.0	1k	10pF – 1000pF
		630	10pF – 4700pF
		250	6800pF – 22000pF
	5.5X5.0	1k	1500pF – 2200pF
		630	6800pF – 10000pF
		250	33000pF – 47000pF
	7.5X5.5	1k	3300pF – 4700pF
		630	15000pF – 22000pF
	7.5X8.0	1k	6800pF – 10000pF
		630	33000pF – 47000pF
	7.5X13.0	1k	22000pF
		630	0.10µF

Continued on the following page.

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

High Dielectric Constant Type



RDE RDE RDE

Series	LxW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
			0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
RDEC7	4.0X3.5	25	0.22μF – 1.0μF
	4.5X3.5	25	2.2μF
	5.0X3.5	25	0.22μF – 2.2μF
	5.5X4.0	50	4.7μF
		25	4.7μF – 10μF
	5.5X5.0	100	1.5μF – 2.2μF
		50	10μF
		25	22μF
	5.5X7.5	100	4.7μF
		50	22μF
		25	47μF
RDED7	5.5X4.0	630	10000pF – 15000pF
		450	10000pF – 47000pF
		250	33000pF – 68000pF
	5.5X5.0	630	22000pF – 47000pF
		450	68000pF – 0.10μF
		250	0.10μF – 0.15μF
	7.5X5.5	630	68000pF
		450	0.15μF
		250	0.22μF – 0.33μF
	7.5X7.5	450	0.22μF – 0.56μF
		250	0.47μF – 1.0μF
	7.5X8.0	630	0.10μF – 0.27μF
	7.7X12.5	450	1.0μF – 1.2μF
		250	2.2μF
	7.7X13.0	630	0.47μF – 0.56μF
RDEF1	4.0X3.5	50	10000pF – 0.1μF
	5.0X3.5	50	10000pF – 0.1μF
RDEF5	4.0X3.5	50	10000pF – 0.1μF
	5.0X3.5	50	10000pF – 0.1μF
RDER7	4.0X3.5	100	220pF – 22000pF
		50	220pF – 0.1μF
		25	0.1μF
	4.5X3.5	100	33000pF – 0.47μF
		50	0.15μF – 0.47μF
	5.0X3.5	630	1000pF – 15000pF
		250	1000pF – 47000pF
		100	220pF – 0.47μF
		50	220pF – 0.47μF
		25	0.1μF
	5.0X4.5	630	22000pF – 47000pF
		250	68000pF – 0.10μF
	5.5X4.0	1k	470pF – 4700pF
		100	0.15μF – 1.0μF
		50	0.68μF – 2.2μF
	5.5X5.0	1k	6800pF – 22000pF
		50	3.3μF

Continued on the following page.

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
RDER7	7.5X5.5	1k	33000pF 47000pF
		630	68000pF 0.10μF
		250	0.15μF 0.22μF
	7.5X7.5	250	0.33μF 0.47μF
	7.5X8.0	1k	68000pF 0.10μF
		630	0.15μF 0.22μF
	7.7X12.5	250	1.0μF
	7.7X13.0	1k	0.22μF
		630	0.47μF

Disc Type (Medium High Voltage)

DES/DEH/DEA/DEB/DEC

High Temperature Guaranteed Low Loss Type (Low Heat Generation)

Series	D (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
DESD3	6.0 to 17.0	1k	100pF 4700pF
	6.0 to 14.0	500	100pF 4700pF

High Temperature Guaranteed Low Loss Type

Series	D (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
DEHC3	6.0 to 14.0	500	330pF 4700pF
DEHR3	7.0 to 19.0	3.15k	150pF 2700pF
	7.0 to 21.0	2k	220pF 4700pF
	7.0 to 17.0	1k	220pF 4700pF

Medium Voltage (Low Heat Generation Type for Temperature Compensation)

Series	D (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
DEA1X	5.0 to 16.0	3.15k	10pF 390pF
	4.5 to 15.0	2k	10pF 560pF
	4.5 to 12.0	1k	10pF 560pF

Medium Voltage Type (High Dielectric Constant)

Series	D (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
DEBB3	5.0 to 15.0	3.15k	100pF 3300pF
	4.5 to 15.0	2k	100pF 4700pF
	4.5 to 15.0	1k	100pF 6800pF
DEBE3	7.0 to 13.0	3.15k	1000pF 4700pF
	6.0 to 16.0	2k	1000pF 10000pF
	5.0 to 13.0	1k	1000pF 10000pF
DEBF3	5.0 to 12.0	2k	1000pF 10000pF
	6.0 to 10.0	1k	2200pF 10000pF

Continued on the following page.

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

Medium Voltage Compatible Type

Series	D (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
DEC1X	7.0 to 15.0	6.3k	10pF – 150pF
DECB3	9.0 to 13.0	6.3k	100pF – 1000pF
DECE3	11.0 to 15.0	6.3k	1000pF – 2200pF

Disc Type (High Voltage) for LCD Backlight Inverter Circuit Only

DEF

Series	D (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
DEF1X	7.0 to 9.0	6.3k	10pF – 47pF
DEF2C	7.0 to 8.0	6.3k	2.0pF – 10pF

Disc Type (Safety Standard Certified Type)

DE2/DE1/DEJ

Type KY (Basic Insulation Type) -IEC60384-14 X1/Y2 Class

Series	D (mm)	Rated Voltage (V)	Capacitance Range (F)
DE21X	8.0	AC250 (r.m.s.)	10pF – 68pF
DE2B3	7.0 to 8.0	AC300 (r.m.s.)	100pF – 680pF
	7.0 to 8.0	AC250 (r.m.s.)	100pF – 680pF
DE2E3	7.0 to 10.0	AC300 (r.m.s.)	1000pF – 4700pF
	7.0 to 10.0	AC250 (r.m.s.)	1000pF – 4700pF
DE2F3	14.0	AC300 (r.m.s.)	10000pF
	14.0	AC250 (r.m.s.)	10000pF

Type KX (Reinforced Insulation Type) -IEC60384-14 X1/Y1 Class

Series	D (mm)	Rated Voltage (V)	Capacitance Range (F)
DE11X	9.0	AC250 (r.m.s.)	10pF – 68pF
DE1B3	7.0 to 8.0	AC300 (r.m.s.)	100pF – 680pF
	7.0 to 8.0	AC250 (r.m.s.)	100pF – 680pF
DE1E3	7.0 to 12.0	AC300 (r.m.s.)	1000pF – 4700pF
	7.0 to 12.0	AC250 (r.m.s.)	1000pF – 4700pF

The Electrical Appliance and Material Safety Law of Japan

Series	D (mm)	Rated Voltage (V)	Capacitance Range (F)
DEJE3	7.0 to 11.0	AC250 (r.m.s.)	1000pF – 4700pF
DEJF3	8.0 to 11.0	AC250 (r.m.s.)	4700pF – 10000pF

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

Disc Type (Ultra-high-voltage)

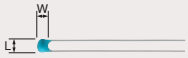
DHR

Series	D (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
DHR4E	8.0 to 18.0	15k	100pF – 1000pF
	8.0 to 16.0	12k	100pF – 1000pF
	8.0 to 15.0	10k	100pF – 1000pF
DHRB3	8.0 to 18.0	15k	100pF – 1000pF
	8.0 to 16.0	12k	100pF – 1000pF
	8.0 to 15.0	10k	100pF – 1000pF

Lead Type Ceramic Capacitors For Automotive

Powertrain/Safety (AEC-Q200)

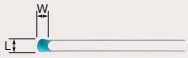
Temperature Compensating Type



RCE

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
RCE5C	3.6X3.5	100	1.0pF – 1500pF
		50	1.0pF – 3900pF
	4.0X3.5	100	1800pF – 3300pF
		50	4700pF – 22000pF

High Dielectric Constant Type



RCE

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
RCEC7	5.5X5.0	100	1.5μF – 2.2μF
	5.5X7.5	100	4.7μF
RCER7	3.6X3.5	100	220pF – 22000pF
		50	220pF – 0.10μF
	4.0X3.5	100	33000pF – 0.33μF
		50	0.15μF – 0.47μF
	5.5X4.0	100	0.15μF – 1.0μF
		50	0.68μF – 2.2μF
		25	3.3μF – 4.7μF
	5.5X5.0	50	3.3μF – 4.7μF
		25	10μF
	5.5X7.5	50	10μF
		25	22μF

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

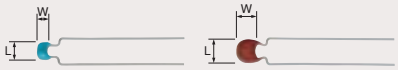
Powertrain/Safety (AEC-Q200) 150°C Max.

Temperature Compensating Type

RH

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
RHE5G	3.6X3.5	100	100pF – 1500pF
		50	100pF – 3900pF
	4.0X3.5	100	1800pF – 3300pF
		50	4700pF – 10000pF

High Dielectric Constant Type



RH RH

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)
RHEL8	3.6X3.5	100	220pF – 22000pF
		50	220pF – 0.10μF
	4.0X3.5	100	33000pF – 0.10μF
		50	0.15μF – 0.33μF
	5.5X4.0	100	0.15μF – 0.22μF
		50	0.47μF – 2.2μF
	5.5X5.0	50	3.3μF – 4.7μF
	5.5X7.5	50	10μF

Safety Standard Certified for Automotive

Type KJ -IEC60384-14 X1/Y2 Class

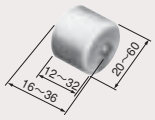
DE6

Series	D (mm)	Rated Voltage (V)	Capacitance Range (F)
DE6B3	8.0 to 9.0	AC300 (r.m.s.)	100pF – 680pF
DE6E3	7.0 to 12.0	AC300 (r.m.s.)	1000pF – 4700pF

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

High Voltage Ceramic Capacitors

Ultra-high-voltage

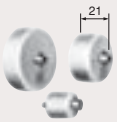


DHS

(in mm)

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F) 0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
DHS4E	–	40k	140pF – 2000pF
		30k	190pF – 2700pF
		20k	280pF – 4000pF
		15k	370pF – 5300pF
		10k	560pF – 8000pF
DHSF4	–	40k	340pF – 2700pF
		30k	460pF – 3600pF
		20k	600pF – 4800pF

High Voltage AC Rated Type



DHK

(in mm)

Series	LXW (mm)	Rated Voltage (V)	Capacitance Range (F) 0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
DHK3V	–	AC10k (r.m.s.)	100pF – 1000pF

Polymer Aluminum Electrolytic Capacitors

ECAS

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F) 0.1p 1p 10p 100p 1000p 10000p 0.1μ 1μ 10μ 100μ 1000μ
ECAS	7.3X4.3	16	6.8μF – 22μF
		12.5	10μF – 100μF
		10	10μF – 150μF
		6.3	10μF – 220μF
		4	68μF – 330μF
		2	100μF – 470μF

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/

Trimmer Capacitors

Trimmer Capacitors are variable capacitance capacitors, used for adjusting characteristics of electronic equipment.

Mounting Method	Soldering Method	Series	Max. Height	Size (WXL)	Rated Voltage	Operating Temperature Range	Remarks
Surface Mounting	Reflow Soldering Methods	TZR1	0.9mm max.	1.5X1.7mm	25V	-25 to 85°C	
		TZS2	1.0mm max.	2.2X2.7mm	25V	-25 to 85°C	
		TZY2	1.25mm max.	2.5X3.2mm	25V	-25 to 85°C	
		TZV2	1.45mm max.	2.3X3.2mm	25V	-25 to 85°C	
		TZC3	1.7mm max.	3.2X4.5mm	100V	-25 to 85°C	
		TZW4	2.6mm max.	4.2X5.2mm	250V	-55 to 125°C	for High Frequency Power
		TZB4_A	3.2mm max.	4.0X4.5mm	100V/50V	-25 to 85°C	
		TZB4_B	3.2mm max.	4.0X4.5mm	100V/50V	-25 to 85°C	
	Flow Soldering Methods	TZB4_A	3.2mm max.	4.0X4.5mm	100V/50V	-25 to 85°C	with Cover Film
		TZB4_B	3.2mm max.	4.0X4.5mm	100V/50V	-25 to 85°C	with Cover Film

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/capacitor/
Selection Guide of Trimmer Capacitors ⇒ http://www.murata.com/products/capacitor/kt_search/selection.html

Please refer to p.71 for Electrical Double Layer Capacitors.

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.

- Chip Monolithic Ceramic Capacitors — Cat. No. C02E
- Chip Monolithic Ceramic Capacitors for Automotive — Cat. No. C03E
- Safety Standard Certified Ceramic Capacitors/ High Voltage Ceramic Capacitors — Cat. No. C85E
- Ceramic Trimmer Capacitors — Cat. No. T13E
- Polymer Aluminum Electrolytic Capacitors — Cat. No. C90E
- Radial Lead Type Monolithic Ceramic Capacitors — Cat. No. C49E
- High Performance Electrical Double Layer Capacitor DMF Series — Cat. No. O83E
- High Performance Electrical Double Layer Capacitor DMT Series — Cat. No. O84E

http://www.murata.com/products/capacitor/catalog/

Noise Suppression Products/ EMI Suppression Filters

Broad lineup of Noise Suppression Products and EMI Suppression Filters

Summary

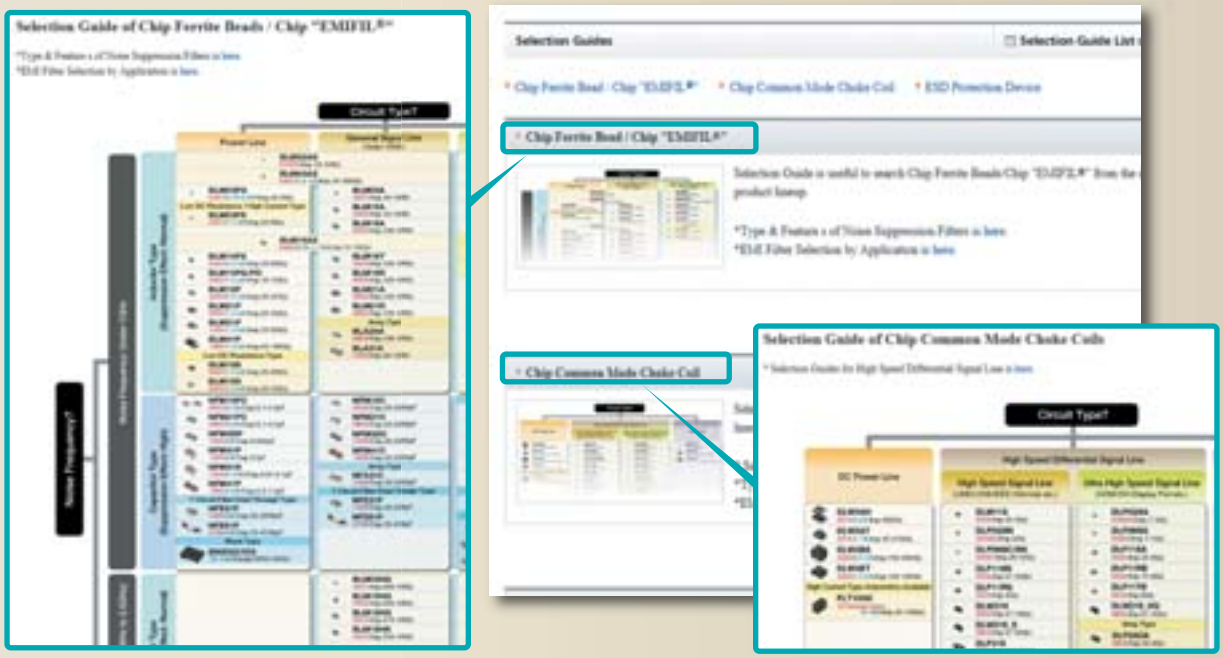
Using Murata's ceramic processing technology and unique material, we offer a variety of Noise Suppression Products and EMI Suppression Filters.

Lineup

●EMI (chip and lead type) ●Noise Suppression Products for Automotive ●ESD Protection Devices ●AC Line Filters ●Ferrite Cores

Selection Guide

The Selection Guide on our website is useful for searching the applications and the product lineup.



http://www.murata.com/products/emc/selection_guide/

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.

• SMD/BLOCK Type EMI Suppression Filters EMIFIL®	Cat. No. C31E
• On-Board Type (DC) EMI Suppression Filters (EMIFIL®) for Automotive	Cat. No. C50E
• EMI Suppression Filters (Lead Type EMIFIL®)	Cat. No. C30E
• EMI Suppression Filters (EMIFIL®) for AC Power Lines	Cat. No. C09E
• Noise Suppression by EMIFIL® Digital Equipment Application Manual	Cat. No. C33E
• Noise Suppression by EMIFIL® Application Guide Application Manual	Cat. No. C35E
• Application Manual for Power Supply Noise Suppression and Decoupling for Digital ICs	Cat. No. C39E
• Ferrite Core for EMI Suppression Microwave Absorber	Cat. No. O63E

http://www.murata.com/products/emc/catalog/

Noise Suppression Filters (Chip Ferrite Bead)

			Series	Size Code Inch (mm)	Max. Rated Current (mA)	Impedance (Ω) at 100MHz	Effective Frequency Range (Hz) (For Reference Only)
						10 / 100 / 1000	10k 100k 1M 10M 100M 1G 10G
For General Band Noise	Universal Type [Power Lines / Signal Lines]		BLM02AX	01005 (0402)	750	10 70 120	
			BLM03AX	0201 (0603)	1000	10 80 120 240 600 1000	
			BLM15AX	0402 (1005)	1740	10 30 70 120 220 600 1000	
	Signal Lines Type	For General Signal Lines	BLM03AG	0201 (0603)	-	10 80 70 120 240 600 1000	
			BLM15AG	0402 (1005)	-	10 70 120 220 600 1000	
			BLM18A	0603 (1608)	-	120 150 220 330 470 600 1000	
			BLM21A	0805 (2012)	-	120 150 220 330 470 600 1000	
			BLM18T	0603 (1608)	-	120 220 600 1000	
			BLA2AA (4 circuits array)	0804 (2010)	-	120 220 600 1000	
			BLA31A (4 circuits array)	1206 (3216)	-	30 60 120 220 600 1000	
		For High Speed Signal Lines	BLM02BX	01005 (0402)	-	150	
			BLM03B	0201 (0603)	-	10 22 33 47 56 75 80 120 240 470 600	
			BLM15B	0402 (1005)	-	5 10 22 33 47 75 120 220 240 470 600 1000 1800	
			BLM18B	0603 (1608)	-	5 10 22 47 60 75 120 140 150 220 330 420 470 600 1000 1500 1800 2200 2500	
			BLM21B	0805 (2012)	-	5 60 75 120 150 200 220 330 420 470 600 750 1000 1500 1800 2200 2250 2700	
			BLA2AB (4 circuits array)	0804 (2010)	-	10 22 47 75 120 220 600 470 1000	
			BLA31B (4 circuits array)	1206 (3216)	-	120 220 600 470 1000	
		For Digital Interface Lines	BLM18R	0603 (1608)	-	120 220 600 470 1000	
			BLM21R	0805 (2012)	-	120 220 600 470 1000	
	Power Lines Type		BLM03PX*	0201 (0603)	1800	22 (1.8A) 33 (1.5A) 80 (1A)	
			BLM03PG	0201 (0603)	900	22 (0.9A) 33 (0.75A)	
			BLM15P*	0402 (1005)	3000	10 (1A) 30 (2.2A) 33 (3A) 60 (1.7A/2.5A) 80 (1.5A/2.3A) 120 (1.3A/2A) 180 (1.5A) 330 (1.2A) 220 (1.4A) 600 (0.9A) 470 (1A)	
			BLM18P*	0603 (1608)	3000	30 (1A) 33 (3A) 60 (0.5A) 120 (2A) 180 (1.5A) 220 (1.4A) 330 (1.2A) 470 (1A)	
			BLM21P*	0805 (2012)	6000	22 (6A) 30 (4A) 60 (3.5A) 120 (3A) 220 (2A) 330 (1.5A)	
			BLM31P*	1206 (3216)	6000	33 (6A) 50 (3.5A) 120 (3.5A) 390 (2A) 600 (1.5A)	
			BLM41P*	1806 (4516)	6000	60 (6A) 75 (3.5A) 180 (3.5A) 470 (2A) 1000 (1.5A)	
			BLM18K* (Low DC Resistance Type)	0603 (1608)	6000	26 (6A) 30 (5A) 70 (3.5A) 100 (3A) 220 (2.2A) 120 (3A) 470 (1.5A) 330 (1.7A) 600 (1.3A)	
			BLM18S* (Low DC Resistance Type)	0603 (1608)	6000	26 (6A) 70 (4A) 120 (3A) 220 (2.5A) 330 (1.5A)	
For GHz Band Noise	Universal Type [Power Lines / Signal Lines]		BLM03EB*	0201 (0603)	600	25 (0.6A) 50 (0.4A)	
			BLM15EG*	0402 (1005)	1500	120 (1.5A) 220 (0.7A)	
			BLM18EG*	0603 (1608)	2000	100 (2A) 120 (2A) 220 (2A/1A) 330 (0.5A) 390 (0.5A) 470 (0.5A) 600 (0.5A)	
			BLM18HE*	0603 (1608)	800	600 (0.8A) 1000 (0.6A) 1500 (0.5A)	
	Signal Lines Type		BLM03HG	0201 (0603)	-	600 1000	
			BLM03HD	0201 (0603)	-	330 470 600 1000	
			BLM03HB	0201 (0603)	-	190	
			BLM15HG	0402 (1005)	-	600 1000	
			BLM15HD	0402 (1005)	-	600 1000 1800	
			BLM15HB	0402 (1005)	-	120 220	
			BLM18HG	0603 (1608)	-	470 600 1000	
			BLM18HD	0603 (1608)	-	470 600 1000	
			BLM18HB	0603 (1608)	-	120 220 330	
			BLM18HK	0603 (1608)	-	330 470 600 1000	

* The derating of rated current is required for some items according to the operating temperature.

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Continued on the following page.

Noise Suppression Products/EMI Suppression Filters

		Series	Size Code Inch (mm)	Max. Rated Current (mA)	Impedance (Ω) at 100MHz	Effective Frequency Range (Hz) (For Reference Only)
					10 100 1000	10k 100k 1M 10M 100M 1G 10G
For High-GHz Band Noise	Signal Lines Type	BLM15GG	0402 (1005)	-	220 470	
		BLM15GA	0402 (1005)	-	75	
		BLM18GG	0603 (1608)	-	470	

Noise Suppression Filters (Chip 3 Terminal Capacitor)

	Series	Size Code Inch (mm)	Max. Rated Current (mA)	Capacitance (F)	Effective Frequency Range (Hz) (For Reference Only)
				10p 100p 1000p 10000p 0.1μ 1μ 10μ	10k 100k 1M 10M 100M 1G 10G
Signal Lines Type	NFM15CC	0402 (1005)	-	2200 22000	
	NFM18C	0603 (1608)	-	22 47 100 220 470 1000 2200 22000	
	NFM21C	0805 (2012)	-	22 47 100 220 470 1000 2200 22000	
	NFM3DC	1205 (3212)	-	22 47 100 220 470 1000 2200 22000	
	NFM41C	1806 (4516)	-	22 47 100 220 470 1000 2200 22000	
	NFA31C (4 circuits array)	1206 (3216)	-	22 47 100 220 470 1000 2200 22000	
Power Lines Type	NFM15PC	0402 (1005)	2000	0.1 0.22 0.47 1.0 4.3 47000	
	NFM18P	0603 (1608)	4000	0.1 0.22 0.47 1.0 2.2	
	NFM21P	0805 (2012)	6000	0.1 0.22 0.47 1.0 2.2 4.7 10	
	NFM3DP*	1205 (3212)	2000	22000	
	NFM31P	1206 (3216)	6000	27	
	NFM31K*	1206 (3216)	10000	10000 15000 22000 0.1	
	NFM41P	1806 (4516)	6000	0.2 1.5	
Universal Type [Power Lines / Signal Lines]	NFE31P	1206 (3216)	6000	22 47 100 220 470 1500 2200	
	NFE61P	2706 (6816)	2000	33 68 100 180 360 680 1000 4700	

Noise Suppression Filters (Chip LC/RC Filter)

	Series	Size Code Inch (mm)	Max. Rated Current (mA)	Cut-off Frequency (MHz)	Effective Frequency Range (Hz) (For Reference Only)
				10 100 500	10k 100k 1M 10M 100M 1G 10G
Signal Lines Type	NFL15ST	0402 (1005)	-	150 200 300 500	
	NFL18ST	0603 (1608)	-	50 70 100 200 300 500	
	NFL18SP	0603 (1608)	-	150 200 300 500	
	NFL21S	0805 (2012)	-	10 20 50 70 100 150 200 300 400 500	
	NFA18S (4 circuits array)	0603 (1608)	-	50 130 180 200 220 300 350 400 480	
	NFA21S (4 circuits array)	0805 (2012)	-	50 80 200 280 300 310 330	
	NFW31S	1206 (3216)	-	10 20 50 100 150 200 300 400 500	
	NFR21G	0805 (2012)	-		
	NFA31G (4 circuits array)	1206 (3216)	-		

* The derating of rated current is required for some items according to the operating temperature.

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Noise Suppression Filters (Chip Common Mode Choke Coil)

		Series	Size Code Inch (mm)	Max. Rated Current (mA)	Common Mode Impedance (Ω) at 100MHz (100 / 500 / 1000)	Effective Frequency Range (Hz) (For Reference Only) (1M 10M 100M 1G 10G)
Signal Lines Type	For Audio Lines	DLM11G	0504 (1210)	-	600	
	For Ultra-High-Speed Signal Lines	DLM11S	0504 (1210)	-	45 90	
		DLP0QSN	025020 (0605)	-	60	
		DLP0QSA	025020 (0605)	-	15 7 35	
		DLP0NSC	03025 (0806)	-	28	
		DLP0NSN	03025 (0806)	-	35 90 67 120	
		DLP0NSA	03025 (0806)	-	15 7	
		DLP11SN	0504 (1210)	-	67 240 90 120 160 200 280 330	
		DLP11SA	0504 (1210)	-	35 90 67	
		DLP11RN	0504 (1210)	-	45	
		DLP11RB	0504 (1210)	-	15 40	
		DLP11TB	0504 (1210)	-	80	
		DLP31S	1206 (3216)	-	120 220 550	
		DLP1NDN (2 circuits array)	05025 (1506)	-	35 90 67	
		DLP2ADA (2 circuits array)	0804 (2010)	-	35 90 67	
		DLP2ADN (2 circuits array)	0804 (2010)	-	90 240 67 120 160 200 280	
		DLP31DN (2 circuits array)	1206 (3216)	-	90 130 200 320 440	
		DLW21S	0805 (2012)	-	90 490 67 120 180 260 370 500	
		DLW21H	0805 (2012)	-	90 67 120 180	
		DLW31SN	1206 (3216)	-	90 160 260 600 1000 2200	
Universal Type [Power Lines / Signal Lines]		DLW5AH/DLW5BS*	2014 /2020 (5036)/(5050)	5000	190 350 1500 4000 1000 3000	
		DLW5AT*/DLW5BT*	2014 /2020 (5036)/(5050)	7000	50 110 230 330 500 1000 1400 45 100 150 250 400 850 1100 2700	

	Series	Size Code Inch (mm)	Max. Rated Current (mA)	Common Mode Impedance (Ω) at 10MHz (100 / 500 / 1000)	Effective Frequency Range (Hz) (For Reference Only) (100k 1M 10M 100M 1G 10G)
Large Current Type for Auto-motive Available	PLT10HH*	-	-	45 400 900 100 500 1000	

* The derating of rated current is required for some items according to the operating temperature.

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Noise Suppression Products/EMI Suppression Filters

Noise Suppression Filters (Block Type)

		Series	Height (mm)	Rated Voltage (Vdc)	Rated Current (A)	Effective Frequency Range (Hz) (For Reference Only) 10k 100k 1M 10M 100M 1G 10G
Power Lines Type	SMD Type	BNX022*	3.1	50	10	
		BNX023*	3.1	100	15	
		BNX024*	3.5	50	15	
		BNX025*	3.5	25	15	
	Lead Type	BNX002	13 max.	50	10	
		BNX003	13 max.	150	10	
		BNX005	13.5 max.	50	15	
		BNX012*	8.0 max.	50	15	
		BNX016*	8.0 max.	25	15	

* The derating of rated current is required for some items according to the operating temperature.

ESD Protection Devices

Support ESD protection for various kinds of electronic devices.

Ceramic ESD Protection Devices LXES_A Series

Applying Murata's original ceramic technology for excellent ESD suppression performance and ultra-small capacitance value.


Silicon ESD Protection Devices LXES_B Series

Applying accumulated design technology to have excellent ESD suppression performance.






Continued on the following page.

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Noise Suppression Products/EMI Suppression Filters

Common mode filter with ESD Protection Devices LXES_D Series

Applying Murata's original ceramic technology for excellent ESD suppression performance with Common Mode Choke Coil and small capacitance value.

Product Lineup ⇒ http://www.murata.com/products/emc/selection_guide/emc3/
<Category Search> Primary: "Noise Suppression Products/EMI Suppression Filters"
Secondary: "ESD Protection Device"
<Part Number Search> Part Number: "LXES"

Noise Suppression Filters (Lead Type), Others

	Series							Effective Frequency Range (Hz) (For Reference Only) 10k 100k 1M 10M 100M 1G 10G
Lead Type EMIFIL®	BL01	BL02	BL03	DSN6	DSN9(H)	DSS6	DST9(H)	
EMIGUARD®	VFR3V	VFS6V	VFS9V					
AC Line Filters — Common Mode Choke Coil	PLA10AN	PLA10AH	PLH10AN					
AC Line Filters — Hybrid Common Mode Choke Coil	PLY10AN	PLY10AH	PLY17BN					
Common Mode Choke Coils	PLT09H							
Microwave Absorbers	EA10	EA20/21/30						
Ferrite Core	FSRH	FSRB	FSRC	FSSA				

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Inductors (Coils)

Broad lineup of Chip Inductors and Power Inductors

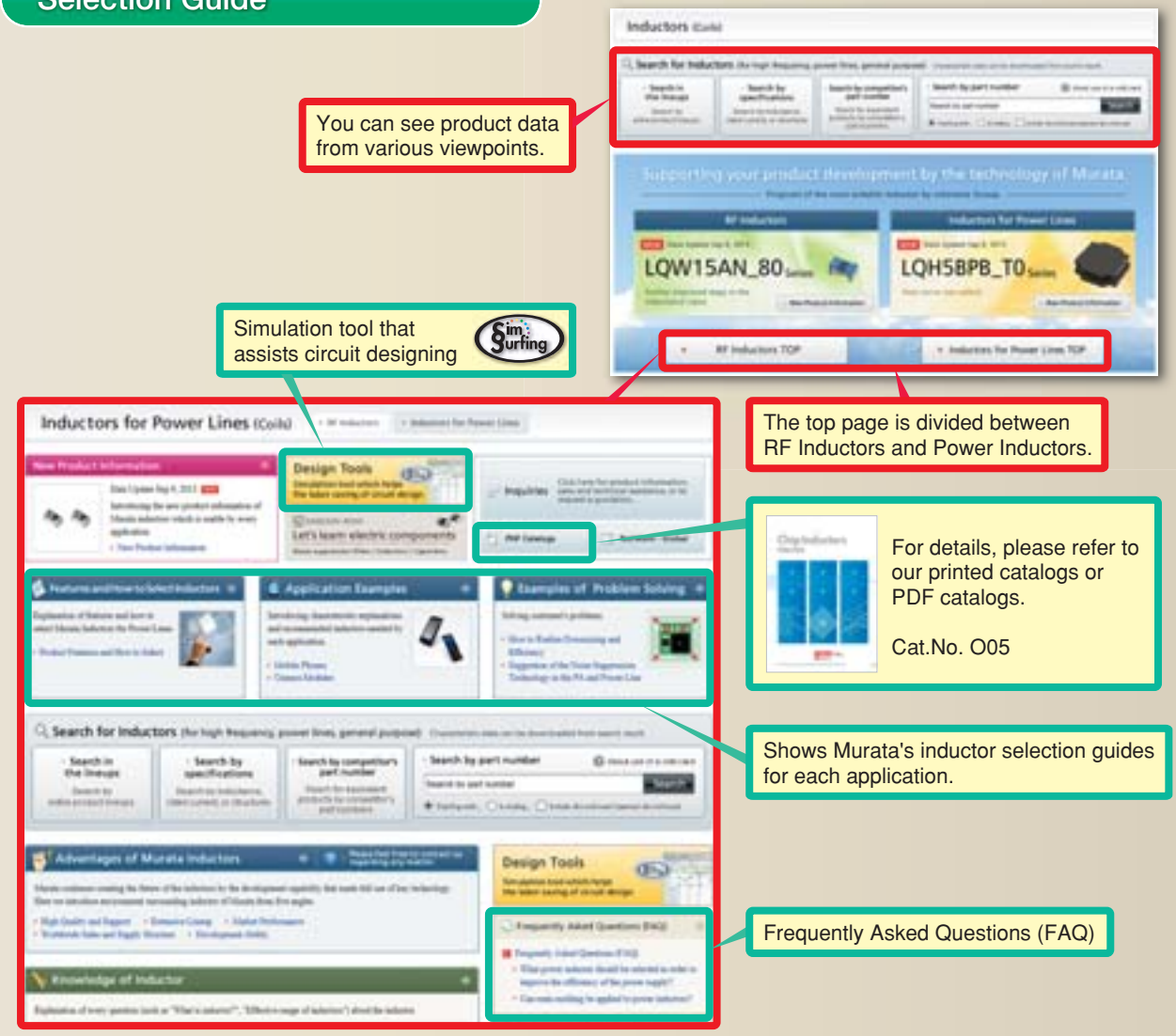
Summary

Using Murata's ceramic processing technology and unique material we offer a variety of inductor products that are suitable for the demands of many applications.

Lineup

●Inductors for Power Circuits (power inductors and choke inductors) ●Chip Inductors (for general purpose, RF circuits, and automotive)

Selection Guide



http://www.murata.com/products/inductor/

Inductors for Power Lines

	Series	Structure	Size Code inch (mm)	Inductance Range (H) 1n 10n 100n 1μ 10μ 100μ 1m 10m	Rated Current (A) 10m 100m 1 10
Inductors for Power Lines	LQW15CN_00	Wire Wound Type (Ferrite Core)	0402 (1005)	18nH – 200nH	390mA – 1.4A
	LQW15CN_10		0402 (1005)	220nH – 560nH	300mA – 450mA
	LQW18CN_00		0603 (1608)	4.9nH – 650nH	430mA – 2.6A
	LQH2MCN_02		0806 (2016)	1.0μH – 82μH	90mA – 485mA
	LQH2MCN_52		0806 (2016)	1.0μH – 22μH	130mA – 595mA
	LQH2HPN_G0		1008 (2520)	2.2μH – 100μH	130mA – 1.0A
	LQH2HPN_GR		1008 (2520)	470nH – 22μH	430mA – 2.52A
	LQH2HPN_J0		1008 (2520)	1.5μH – 10μH	550mA – 1.5A
	LQH2HPN_M0		1008 (2520)	2.2μH – 4.7μH	800mA – 1.25A
	LQH3NPN_G0		1212 (3030)	1.0μH – 250μH	130mA – 1.525A
	LQH3NPN_J0		1212 (3030)	1.0μH – 47μH	350mA – 1.62A
	LQH3NPN_M0		1212 (3030)	1.0μH – 100μH	240mA – 2.05A
	LQH3NPN_MR		1212 (3030)	1.0μH – 47μH	460mA – 2.15A
	LQH32PN_N0		1210 (3225)	470nH – 120μH	200mA – 2.55A
	LQH32PN_NC		1210 (3225)	470nH – 22μH	550mA – 2.9A
	LQH32PB_N0		1210 (3225)	470nH – 120μH	200mA – 2.55A
	LQH32PB_NC		1210 (3225)	470nH – 22μH	550mA – 2.9A
	LQH43PN_26		1812 (4532)	1.0μH – 220μH	240mA – 3.3A
	LQH43PB_26		1812 (4532)	1.0μH – 220μH	240mA – 3.3A
	LQH44PN_J0		1515 (4040)	1.0μH – 47μH	380mA – 1.53A
	LQH44PN_P0		1515 (4040)	1.0μH – 22μH	790mA – 2.45A
	LQH5BPN_T0		2020 (5050)	470nH – 22μH	1.05A – 4.0A
	LQH5BPB_T0		2020 (5050)	470nH – 22μH	1.05A – 4.0A
	LQH31CN_03		1206 (3216)	120nH – 100μH	80mA – 970mA
	LQH32CN_23/33		1210 (3225)	150nH – 560μH	60mA – 1.45A
	LQH32CN_53		1210 (3225)	1.0μH – 100μH	100mA – 1.0A
	LQH43CN_03		1812 (4532)	1.0μH – 470μH	90mA – 1.08A
	LQH43CN_33		1812 (4532)	560nH – 3.9μH	1.6A – 2.95A
	LQH55DN_03		2220 (5750)	120nH – 10mH	50mA – 6.0A
	LQH66SN_03		2525 (6363)	270nH – 10mH	50mA – 6.0A
	LQM18PN_B0	Multilayer Type (Ferrite Core)	0603 (1608)	1.5μH	600mA
	LQM18PN_C0		0603 (1608)	470nH – 2.2μH	700mA – 850mA
	LQM18PN_D0		0603 (1608)	2.5μH	700mA
	LQM18PN_F0		0603 (1608)	1.0μH	600mA
	LQM18PN_FR		0603 (1608)	220nH – 4.7μH	620mA – 1.25A

CAUTION: Use rosin-based flux, but not strong acidic flux (with chlorine content exceeding 0.2wt%) when soldering chip inductors (chip coils).
Do not use water-soluble flux.

Continued on the following page.

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/inductor/power/

Inductors (Coils)

Inductance Lineup
: E-24 or Higher
: E-12
: 0.1nH Step
: Other
*Some items do not match E step.

	Series	Structure	Size Code inch (mm)	Inductance Range (H) 1n 10n 100n 1μ 10μ 100μ 1m 10m	Rated Current (A) 10m 100m 1 10
Inductors for Power Lines	LQM21PN_C0	Multilayer Type (Ferrite Core)	0805 (2012)	470nH–2.2μH	600mA–1.1A
	LQM21PN_G0		0805 (2012)	470nH–3.3μH	800mA–1.3A
	LQM21PN_GS		0805 (2012)	2.2μH–4.7μH	750mA–950mA
	LQM21PN_GC		0805 (2012)	1.0μH–2.2μH	800mA–900mA
	LQM21PN_GR		0805 (2012)	1.0μH–4.7μH	800mA–1.3A
	LQM2MPN_G0		0806 (2016)	470nH–4.7μH	1.1A–1.6A
	LQM2MPN_GH		0806 (2016)	160nH–2.2μH	1.0A–4.0A
	LQM2HPN_G0		1008 (2520)	470nH–4.7μH	1.1A–1.8A
	LQM2HPN_GS		1008 (2520)	2.2μH–4.7μH	1.0A–1.1A
	LQM2HPN_GC		1008 (2520)	1.0μH–4.7μH	800mA–1.5A
	LQM2HPN_GH		1008 (2520)	470nH–2.2μH	1.5A–2.6A
	LQM2HPN_J0		1008 (2520)	1.0μH–3.3μH	1.0A–1.5A
	LQM2HPN_JC		1008 (2520)	1.0μH–2.2μH	1.0A–1.5A
	LQM2HPN_JH		1008 (2520)	470nH–2.2μH	1.5A–2.7A
	LQM2HPN_E0		1008 (2520)	560nH	1.5A
	LQM31PN_00		1206 (3216)	470nH–4.7μH	700mA–1.4A
	LQM31PN_C0		1206 (3216)	470nH–2.2μH	900mA–1.3A
	LQM32PN_G0		1210 (3225)	1.0μH	1.8A
	LQM18FN_00		0603 (1608)	1.0μH–10μH	50mA–150mA
	LQM21DN_00		0805 (2012)	1.0μH–47μH	7.0mA–60mA
	LQM21FN_00		0805 (2012)	1.0μH–47μH	7.0mA–220mA
	LQM21FN_70		0805 (2012)	4.7μH–10μH	100mA–120mA
	LQM21FN_80		0805 (2012)	4.7μH–10μH	100mA–120mA

Inductors for General Use

	Series	Structure	Size Code inch (mm)	Inductance Range (H) 1n 10n 100n 1μ 10μ 100μ 1m 10m	Rated Current (A) 10m 100m 1 10
Inductors for General Use	LQB15NN_10	Multilayer Type (Ferrite Core)	0402 (1005)	220nH–560nH	300mA–380mA
	LQB18NN_10		0603 (1608)	220nH–560nH	300mA–450mA
	LQM18NN_00		0603 (1608)	47nH–2.2μH	15mA–50mA
	LQM21NN_10		0805 (2012)	100nH–4.7μH	30mA–250mA
	LQH31MN_03	Wire Wound Type (Ferrite Core)	1206 (3216)	150nH–100μH	45mA–250mA
	LQH32MN_23		1210 (3225)	1.0μH–560μH	40mA–445mA
	LQH43M(N)N_03		1812 (4532)	1.0μH–2.2mH	30mA–500mA
	LQH44NN_03		1515 (4040)	510nH–470μH	145mA–4.5A

CAUTION: Use rosin-based flux, but not strong acidic flux (with chlorine content exceeding 0.2wt%) when soldering chip inductors (chip coils).
Do not use water-soluble flux.

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/inductor/power/

Inductance Lineup
: E-24 or Higher
: E-12
: 0.1nH Step
: Other
*Some items do not match E step.

RF Inductors

RF Inductors

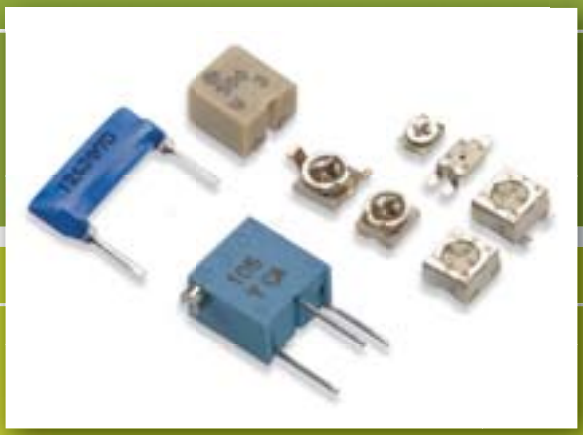
Series	Structure	Size Code inch (mm)	Inductance Range (H) 1n 10n 100n 1μ 10μ 100μ 1m 10m	Rated Current (A) 10m 100m 1 10
LQG15HN_02	Multilayer Type (Non-Magnetic Core)	0402 (1005)	1.0nH – 120nH	150mA – 300mA
LQG15HS_02		0402 (1005)	1.0nH – 270nH	110mA – 300mA
LQG18HN_00		0603 (1608)	1.2nH – 100nH	300mA – 500mA
LQP02TN_02	Film Type (Non-Magnetic Core)	01005 (0402)	0.2nH to 39nH	90mA – 320mA
LQP02TQ_02		01005 (0402)	0.4nH to 10nH	170mA – 990mA
LQP03TG_02		0201 (0603)	0.6nH to 120nH	80mA – 850mA
LQP03TN_02		0201 (0603)	0.6nH to 270nH	60mA – 850mA
LQP15MN_02		0402 (1005)	1.0nH – 33nH	60mA – 400mA
LQP18MN_02		0603 (1608)	1.3nH – 100nH	50mA – 300mA
LQW03AW_00	Wire Wound Type (Non-Magnetic Core)	-	5.4nH – 13nH	280mA – 460mA
LQW04AN_00		03015 (0804)	1.1nH – 33nH	140mA – 990mA
LQW15AN_00		0402 (1005)	1.5nH – 120nH	110mA – 1.0A
LQW15AN_10		0402 (1005)	1.3nH – 5.6nH	800mA – 1.2A
LQW15AN_80		0402 (1005)	1.3nH – 75nH	320mA – 3.15A
LQW18AN_00		0603 (1608)	2.2nH – 470nH	75mA – 850mA
LQW18AN_10		0603 (1608)	2.2nH – 33nH	550mA – 1.4A
LQW18AN_80		0603 (1608)	2.2nH – 390nH	190mA – 3.2A
LQW2BAS_00		0805 (2015)	2.8nH – 820nH	180mA – 800mA
LQW2BHN_03		0805 (2015)	3.3nH – 470nH	160mA – 1.32A
LQW2BHN_13		0805 (2015)	2.7nH – 27nH	900mA – 1.9A
LQW2UAS_00		1008 (2520)	12nH – 4.7μH	260mA – 1.0A
LQW31HN_03		1206 (3216)	8.8nH – 100nH	230mA – 750mA
LQW21HN_00	Wire Wound Type (Ferrite Core)	0805 (2012)	470nH – 2.2μH	75mA – 160mA
LQH31HN_03		1206 (3216)	54nH – 880nH	180mA – 920mA

CAUTION: Use rosin-based flux, but not strong acidic flux (with chlorine content exceeding 0.2wt%) when soldering chip inductors (chip coils).
Do not use water-soluble flux.

For more details on each series, please refer to our website.
Product Search ⇒ http://www.murata.com/products/inductor/rf/

Resistors

Full lineup for various applications



Summary

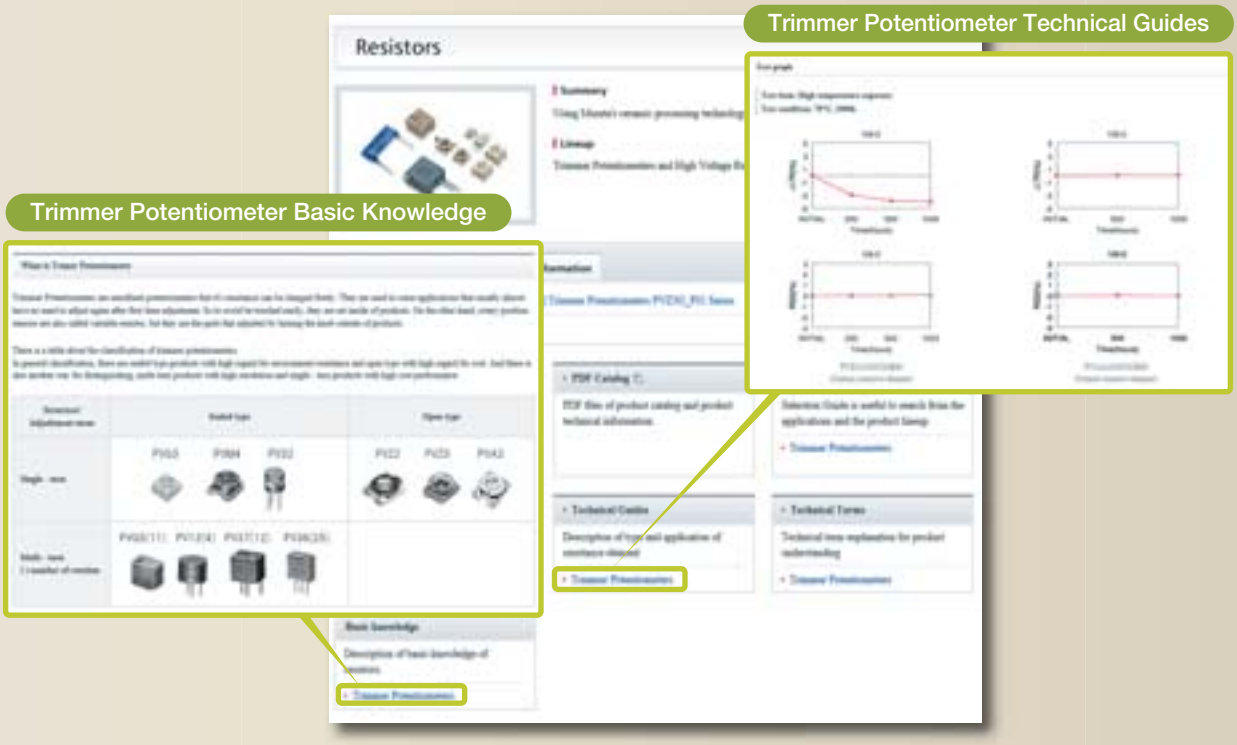
Using Murata's ceramic processing technology and unique material, we offer a variety of resistor products.

Lineup

- Trimmer Potentiometers
- High Voltage Resistors

Web Content

Introducing Trimmer Potentiometer content on our website.



http://www.murata.com/products/resistor/

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.

• Trimmer Potentiometers Cat. No. R50E

http://www.murata.com/products/resistor/catalog/

Trimmer Potentiometers

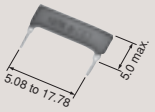
Trimmer Potentiometers are used for trimming the resistance value of electronic equipment.
Murata offers a broad range of Trimmer Potentiometers using both carbon and cermet materials.

Mounting	Structure	Resistive Element Type	Adjustment Angle	Adjustment Turns	Size	Series	Remarks
Surface Mounting	Open Type	Carbon	Top Adjustment	1	2mm	PVZ2A	Low Profile (0.85mm max.)
					3mm	PVZ3A	Automatic Adjustment
						PVZ3G	Low Profile (1.25mm max.)
						PVZ3H	
			Rear Adjustment	1	2mm	PVZ2R	Low Profile with Smaller Footprint (0.9mm max.)
					3mm	PVZ3K	
		Cermet	Top Adjustment	1	2mm	PVA2A	Automatic Adjustment
	Sealed Type	Cermet	Top Adjustment	1	3mm	PVG3A	Automatic Adjustment with Rotational Stop
						PVG3G	with Rotational Stop
					4mm	PVM4	
				11	5mm	PVG5A	
			Side Adjustment	11	5mm	PVG5H	
PCB Insertion	Sealed Type	Cermet	Top Adjustment	1	6mm	PV32H	with Rotational Stop
				4	7mm	PV12P	
				12	6mm	PV37W	
				25	10mm	PV36W	
			Side Adjustment	1	6mm	PV32N	with Rotational Stop
				4	7mm	PV12T	
				12	6mm	PV37X	
				25	10mm	PV36X	

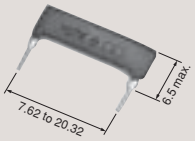
For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

High Voltage Resistors

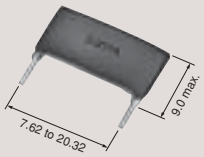
High Voltage Resistors are used for home and office equipment such as printers, copies and air-conditioners. Murata offers the High Voltage Resistors "MHR Series".



MHR03 Series



MHR04 Series



MHR06 Series

(in mm)

Series	Resistance (min.) (MΩ)	Resistance (max.) (MΩ)	Maximum Operating Voltage (Single Use) (kV)	Maximum Operating Voltage (Molded Use) (kV)	Rated Power (W)
MHR03	1	500 to 1000	2 to 8	3 to 14	0.3 to 1.0
MHR04	1	1000	3.5 to 9	10 to 16	0.6 to 1.3
MHR06	1	1000	3.5 to 9	10 to 18	0.8 to 1.5

We have many products with various specifications.
For resistance value and ratio of B circuit, please contact us.

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Timing Devices

A stable timing source for microprocessors in various electronic devices

Summary

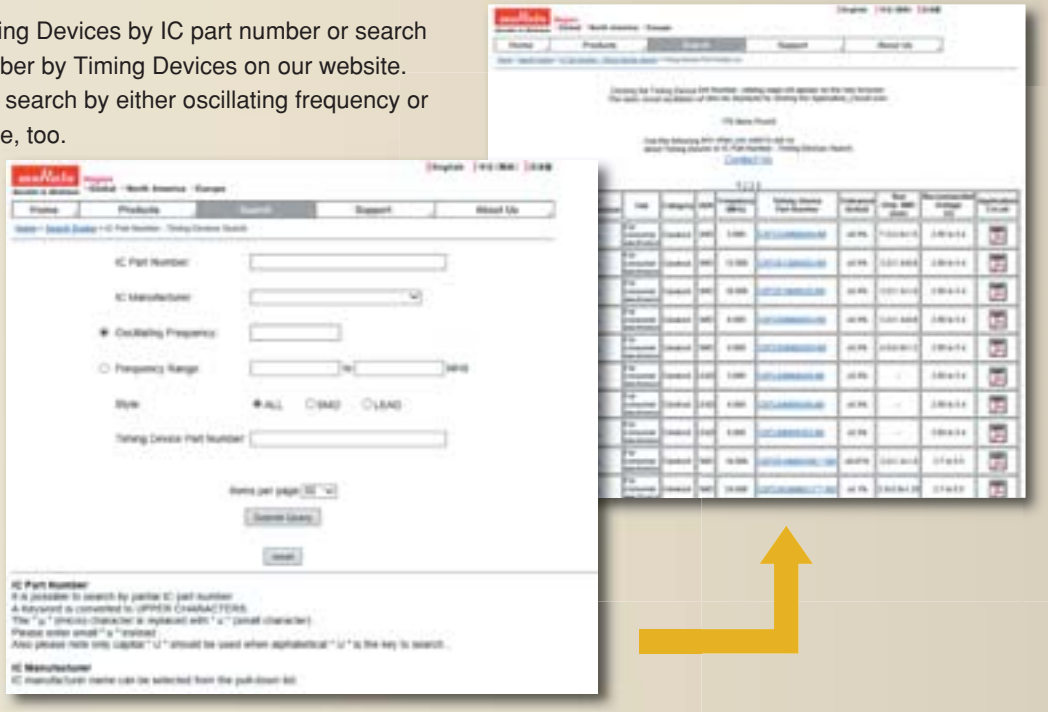
Murata's ceramic processing technology and unique piezoelectric material has led to the development of a range of small and thin ceramic timing devices that offer high oscillation frequency and remarkable oscillation tolerance.

Lineup

- Crystal Units
- Ceramic Resonators CERALOCK®

IC Part Number - Timing Devices Search

Search for Timing Devices by IC part number or search for IC part number by Timing Devices on our website.
It is possible to search by either oscillating frequency or frequency range, too.



http://search.murata.co.jp/Ceramy/ICsearchAction.do?sLang=en

Detailed Catalogs

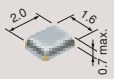
For more details, please refer to our printed catalogs and the PDF catalogs on our website.

• Ceramic Resonators (CERALOCK®)	Cat. No. P16E
• Ceramic Resonator (CERALOCK®) Application Manual	Cat. No. P17E
• Crystal Unit	Cat. No. P79E

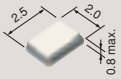
http://www.murata.com/products/resonator/catalog/

Crystal Units

Available in the applications to be necessary for high accuracy resonator.
Especially, the communication clocks such as S-ATA and USB2.0/3.0.



XRCGB



XRCHA

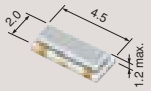
(in mm)

Series	Nominal Frequency (MHz)	Frequency Tolerance (25±3°C)	Equivalent Series Resistance (Ω)	Temperature Stability	Drive Level (μW)	Load Capacitance (pF)
XRCGB	24.0000 to 29.9999	±100ppm max.	150 max.	±50ppm max. (-30 to 85°C)	300 max.	6
	30.0000 to 48.0000	±100ppm max.	100 max.	±50ppm max. (-30 to 85°C)	300 max.	6
XRCHA	12.0000 to 24.0000	±100ppm max.	100 max. (16MHz) 80 max. (20MHz)	±100ppm max. (-40 to 125°C)	300 max.	8

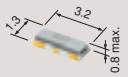
Ceramic Resonators CERALOCK®

Wide variety of product lineup for automotive and consumer use by SMD and lead package.

MHz Chip Type for Automotive (Tight Frequency Tolerance)



CSTCR_G15C



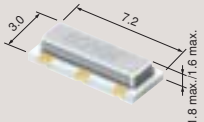
CSTCE_G15C

CSTCE_V13C

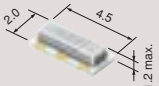
(in mm)

Series	Frequency Range (MHz)	Temperature Stability (%)	Temperature Range (°C)
CSTCR_G15C	4.00±0.1% – 7.99±0.1%	±0.13	-40 to 125
CSTCE_G15C	8.00±0.1% – 13.99±0.1%	±0.13	-40 to 125
CSTCE_V13C	14.00±0.1% – 20.00±0.1%	±0.13	-40 to 125

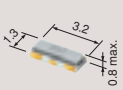
MHz Chip Type for Automotive (Standard Frequency Tolerance)



CSTCC_G_A

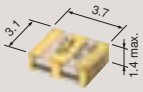


CSTCR_G_B

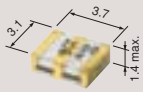


CSTCE_G_A

CSTCE_V_C



CSTCV_X_Q



CSACV_X_Q

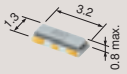
(in mm)

Series	Frequency Range (MHz)	Temperature Stability (%)	Temperature Range (°C)
CSTCC_G_A	2.00±0.5% – 3.99±0.5%	±0.4 (15pF) -0.6/+0.3 (47pF)	-40 to 125
CSTCR_G_B	4.00±0.5% – 7.99±0.5%	±0.15	-40 to 125
CSTCE_G_A	8.00±0.5% – 13.99±0.5%	±0.2	-40 to 125
CSTCE_V_C	14.00±0.5% – 20.00±0.5%	±0.15	-40 to 125
CSTCV_X_Q	20.01±0.5% – 70.00±0.5%	±0.3	-40 to 125
CSACV_X_Q (No built-in load capacitance)	20.01±0.5% – 70.00±0.5%	±0.3	-40 to 125

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

MHz Chip Type for Consumer Electronics (Tight Frequency Tolerance)

CSTCR_G15L



CSTCE_G15L

CSTCE_V13L

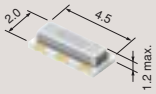
CSTCW_X11

(in mm)

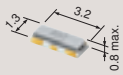
Series	Frequency Range (MHz) 1 2 3 4 5 6 7 8 9 10 20 30 40 50 70 100	Temperature Stability (%)	Temperature Range (°C)
CSTCR_G15L	4.00±0.1% — 7.99±0.1%	±0.08	0 to 70
CSTCE_G15L	8.00±0.1% — 13.99±0.1%	±0.08	0 to 70
CSTCE_V13L	14.00±0.1% — 20.00±0.1%	±0.08	0 to 70
CSTCW_X11	20.01±0.1% — 48.00±0.1%	±0.1	0 to 70

MHz Chip Type for Consumer Electronics (Standard Frequency Tolerance)

CSTCC_G



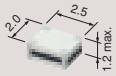
CSTCR_G



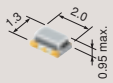
CSTCE_G

CSTCE_V

CSTCW_X



CSACW_X

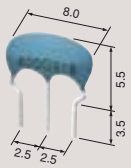


CSTCG_V

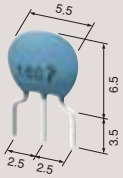
(in mm)

Series	Frequency Range (MHz) 1 2 3 4 5 6 7 8 9 10 20 30 40 50 70 100	Temperature Stability (%)	Temperature Range (°C)
CSTCC_G	2.00±0.5% — 3.99±0.5%	±0.3 (15pF) ±0.4 (47pF)	-20 to 80
CSTCR_G	4.00±0.5% — 7.99±0.5%	±0.2	-20 to 80
CSTCE_G	8.00±0.5% — 13.99±0.5%	±0.2	-20 to 80
CSTCE_V	14.00±0.5% — 20.00±0.5%	±0.3	-20 to 80
CSTCW_X	20.01±0.5% — 70.00±0.5%	±0.2	-20 to 80
CSACW_X (No built-in load capacitance)	20.01±0.5% — 70.00±0.5%	±0.2	-20 to 80
CSTCG_V	20.00±0.5% — 33.86±0.5%	±0.3	-20 to 80

MHz Lead Type for Consumer Electronics (Standard Frequency Tolerance)



CSTLS_G



CSTLS_X

(in mm)

Series	Frequency Range (MHz) 1 2 3 4 5 6 7 8 9 10 20 30 40 50 70 100	Temperature Stability (%)	Temperature Range (°C)
CSTLS_G	3.40±0.5% — 10.00±0.5%	±0.2 (15pF) -0.4/+0.2 (47pF)	-20 to 80
CSTLS_X	16.00±0.5% — 70.00±0.5%	±0.2	-20 to 80

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Filters for Audio Visual Equipment

Signal extraction for visual and audio in electronic devices

Summary

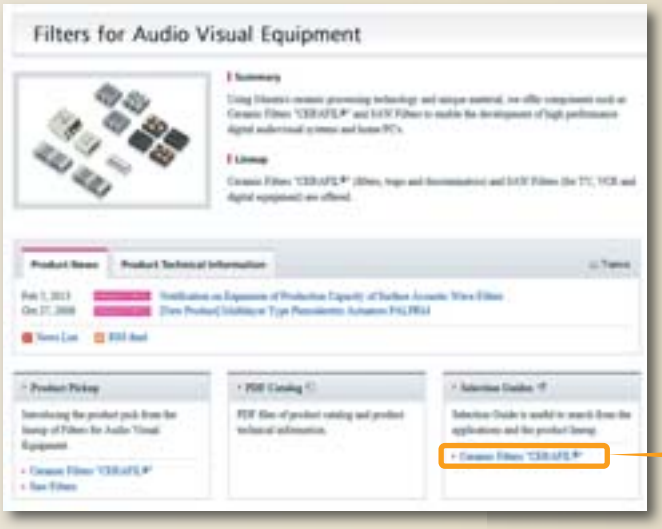
Using Murata's ceramic processing technology and unique material, we offer components such as Ceramic Filters CERAFIL® and SAW Filters to enable the development of high-performance digital audio/visual systems and home PCs.

Lineup

●Ceramic Filters CERAFIL® (Filters, Traps and Discriminators) ●SAW Traps

Web Content

View the CERAFIL® Selection Guide on our website.



http://www.murata.com/products/av_filter/

Application Lineup of CERAFIL®

		Applications				
		Hi-Fi Audio	Portable Audio	Car Audio	TV / VCR	RKE / TPMS
Ceramic Filters	450kHz	●	●	●		●
	10.7MHz	●	●	●	●	●
	2.3 to 6.5MHz	●			●	
Ceramic Discriminators	450kHz					●
	10.7MHz	●	●	●		
Ceramic Traps	4.5 to 6.5MHz				●	

CERAFIL® Selection Guide

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.

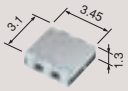
- CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment Cat. No. P50E
- CERAMIC FILTER (CERAFIL®) Application Manual Cat. No. P11E

http://www.murata.com/products/av_filter/catalog/

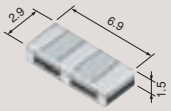
Ceramic Filters CERAFIL®

CERAFIL® 10.7MHz Chip Type

This series is suitable for FM radio and VICS/RKE/TPMS receiver use.
This series enables customers to design thinner and smaller circuits.



SFECF Series



SFECK / SFECV Series

(in mm)

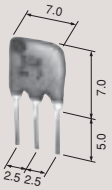
Type	Series	3dB Bandwidth (kHz)						
		D	E	F	G	H	J	K
		350	330	280	230	180	150	110
Standard Type	SFECF10M7□	●	●	●	●	●	–	–
High-reliability Type	SFECK10M7□	–	–	–	–	–	●	●
Standard Type	SFECV10M7□	–	–	–	–	–	●	●
Standard Type	SFECV15M0□	–	●	–	–	–	–	–

□ is filled in with a letter denoting 3dB bandwidth.

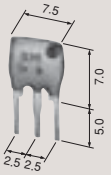
CERAFIL® 10.7MHz Lead Type

This series is suitable for FM radio, car-audio or AM up-conversion use.

SFELF Series
(Standard Type)



SFELF Series
(Low Loss Type)



SFELF Series
(Low Spurious Response Type)

(in mm)

Type	Series	3dB Bandwidth (kHz)							
		F	G	H	J	K	L	M	N
		280	230	180	150	110	80	50	35
Standard Type	SFELF10M7□	●	●	●	–	●	–	–	–
Low Loss Type		●	●	●	●	–	–	–	–
Low Spurious Response Type		●	●	●	●	●	–	–	–

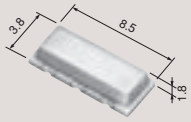
□ is filled in with a letter denoting 3dB bandwidth.

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

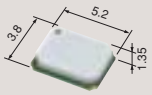
Filters for Audio Visual Equipment

CERAFIL® 2.3 to 6.5MHz Chip Type

SFSKA Series has distinctive features such as wide bandwidth and stable filter performance, enabling customers to design smaller products.
SFSKB Series is suitable for low frequency range.



SFSKA Series



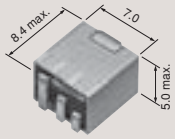
SFSKB Series

(in mm)

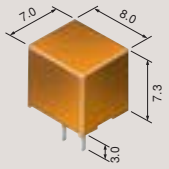
Series	Center Frequency (MHz)												3dB Bandwidth (kHz)
	2.3	2.8	3.2	3.8	4.3	4.5	4.8	5.2	5.5	5.7	6.0	6.5	
SFSKA	–	–	–	–	–	●	–	–	●	–	●	●	±60 min.
SFSKB	●	●	●	●	●	–	●	●	–	●	–	–	±75 min.

CERAFIL® 450kHz

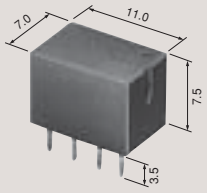
This series features high selectivity, high stability and adjustment-free operation, suitable for intermediate filters for AM radios.



SFPKA Series



SFPLA / CFULA Series



CFWLA Series

(in mm)

Type	Series	6dB Bandwidth (kHz) min.					
		D	E	F	G	H	J
		±10	±7.5	±6	±4.5	±3	±2
Chip Standard Type	**SFPKA450K□**	–	–	–	●	●	–
Lead Standard Type	**SFPLA450K□ / CFULA450K□**	●	●	●	●	●	●
Lead High-selectivity Type	**CFWLA450K□**	●	●	●	●	●	●

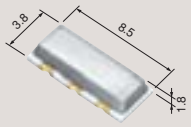
□ is filled in with a letter denoting 6dB bandwidth.

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Filters for Audio Visual Equipment

Ceramic Traps

TPSKA Series has distinctive features such as high attenuation and high performance group delay time, enabling customers to design smaller products.



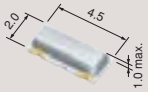
TPSKA Series

(in mm)

Series	Center Frequency (MHz)	Attenuation (dB)
TPSKA	4.500/5.500/6.000/6.500	35 min.

Ceramic Discriminators

In combination with ICs, this type obtains stable demodulation characteristics in a wide bandwidth.



CDSCB Series

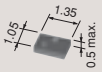
(in mm)

Series	Center Frequency
CDSCB	10.700MHz±30kHz

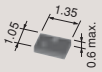
Recommended part number depends on IC specifications. Please contact us with the IC part number to be applied.

SAW Traps

Features: Wide pass band width, Highly selective attenuation band, High performance, Small size, Chip Size Package



SAEEA / SAEEL Series



SAEEB Series

(in mm)

SAW Filters and SAW Duplexers must be used only for the below equipment:
Mobile phones, cordless telephones (except automobile telephone), smartphones, tablet PC, PC (including laptop/netPC), game machines, cameras (except for business use and for security), STB, electronic dictionaries, and digital audio instruments.
Please contact us for other usages.

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Filters for Communication Equipment

Broad lineup of Filters for RF/Local, Duplexers and Filters for IF

Summary

Using Murata's ceramic processing technology and unique material, we offer miniaturized filters with excellent properties for advanced communication equipment.

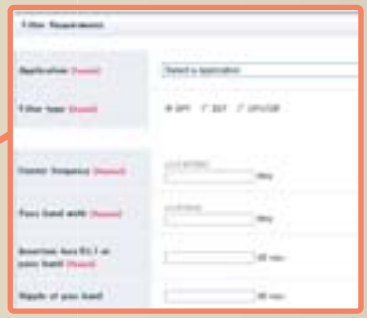
Lineup

- SAW Filters for Mobile Communications
- Dielectric Filters GIGAFIL®
- Chip Multilayer LC Filters
- Ceramic Filters CERAFIL®
- Ceramic Discriminators

Web Content

For more details on communication equipment, please refer to our website.

Contact Form for Dielectric Filters GIGAFIL® Customization



http://www.murata.com/products/comm_filter/

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.

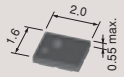
- Ceramic Filters (CERAFIL®)/Ceramic Discriminators for Communications Equipment Cat. No. P05E
- CERAMIC FILTER (CERAFIL®) Application Manual Cat. No. P11E

http://www.murata.com/products/comm_filter/catalog/

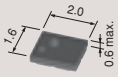
SAW Filters for Mobile Communications

SAW Duplexers

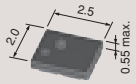
Features: Low Loss, High attenuation performance, Small size, Highly selective pass band, Chip Size Package



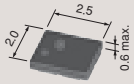
SAYFH Series



SAYRF Series



SAYFP Series



SAYRJ Series

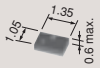
(in mm)

RF Filters

Features: Low Loss, High attenuation performance, Small size, Highly selective pass band, Chip Size Package

Single Filter

SAFEA Series

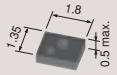


SAFEB Series

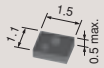
SAFFB Series

(in mm)

Dual Filter



SAWEN Series



SAWFD Series

(in mm)

SAW Bank

This module, which has matching components, can simplify the connection to RFIC.

Filter Bank

Please contact us if you have any questions regarding our SAW Bank products.

DPX Bank

Please contact us if you have any questions regarding our DPX Bank products.

SAW Filters and SAW Duplexers must be used only for the below equipment:
Mobile phones, cordless telephones (except automobile telephone), smartphones, tablet PC, PC (including laptop/netPC), game machines, cameras (except for business use and for security), STB, electronic dictionaries, and digital audio instruments.
Please contact us for other usages.

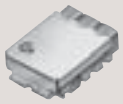
For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Filters for Communication Equipment

Dielectric Filters GIGAFIL®

Suitable for the cellular base stations and other telecom infrastructure systems.
Customized proposal responded to the request characteristics is also available in our applicable range mentioned below.

DFYH Series



DFCH Series

	Series	Frequency Range (MHz)	Number of Resonators	Input Power Range
Duplexers	**DFYH**	700 – 2600	5 to 10	1 to 10W*
RF/IF/Local Filter	**DFCH**	600 – 3800	2 to 6	1 to 10W*

*Power depends upon specifications.

Characteristic customization is available. You can contact us also from our website.
Contact Form ⇒ https://www.murata.co.jp/en/contact/product_gigafil/

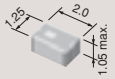
Chip Multilayer LC Filters

Ultra-small and low-profile filters based on ceramic multilayer technology.

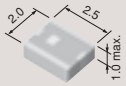
Band Pass Filters

LFB15 Series

LFB18 Series



LFB21 Series



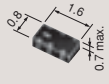
LFB2H Series

LFB31 Series

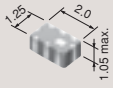
(in mm)

Low Pass Filters

LFL15 Series



LFL18 Series



LFL21 Series

(in mm)

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Ceramic Filters CERAFIL®

Small and light Filters for IF in communications equipment using unique piezo-electric material.

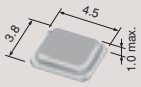
CERAFIL® 10.7MHz Chip Type

(in mm)

SFECF Series

Type	Series	3dB Bandwidth (kHz)				
		D	E	F	G	H
		350	330	280	230	180
Standard Type	**SFECF10M7□**	●	●	●	●	●

□ is filled in with a letter denoting 3dB bandwidth.



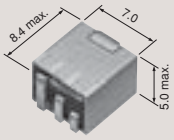
(in mm)

SFSCE Series

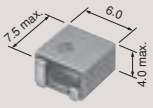
Type	Series	3dB Bandwidth (kHz) min.		
		03	04	05
		±500	±400	±325
Wide Bandwidth	**SFSCE10M7WF□□**	●	●	●

□ is filled in with a number denoting 3dB bandwidth.

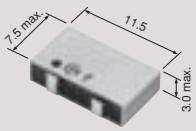
CERAFIL® 450/455kHz Chip Type



SFPKA Series



CFUKG / CFUKF Series



CFWKA Series

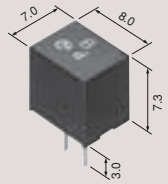
(in mm)

Type	Series	6dB Bandwidth (kHz) min.							
		A	B	C	D	E	F	G	H
		±17.5	±15	±12.5	±10	±7.5	±6	±4.5	±3
High-selectivity	**SFPKA455K□ (4 Elements)**	–	–	–	●	●	●	●	●
High-selectivity Miniature	**CFUKG455K□ (4 Elements)**	–	–	–	●	●	●	●	–
GDT Flat Type Miniature	**CFUKF455K□ (4 Elements)**	●	●	●	●	●	–	–	–
High-selectivity	**CFWKA450K□ (6 Elements)**	–	–	–	●	●	●	●	–

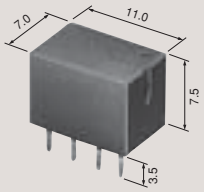
□ is filled in with a letter denoting 6dB bandwidth.

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

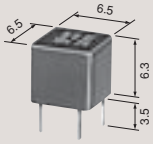
CERAFIL® 450/455kHz Lead Type



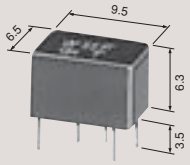
CFULA Series



CFWLA Series



CFULB Series



CFWLB Series

(in mm)

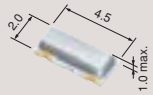
Type	Series	6dB Bandwidth (kHz) min.							
		B	C	D	E	F	G	H	J
		±15	±12.5	±10	±7.5	±6	±4.5	±3	±2
High-selectivity Low-profile	**CFULA455K☐** (4 Elements)	●	●	●	●	●	●	●	–
High-selectivity Low-profile	**CFWLA455K☐** (6 Elements)	●	●	●	●	●	●	●	●
High-selectivity Miniature	**CFULB455K☐** (4 Elements)	●	●	●	●	●	●	●	●
High-selectivity Miniature	**CFWLB455K☐** (6 Elements)	●	●	●	●	●	●	●	●

☐ is filled in with a letter denoting 6dB bandwidth.

Ceramic Discriminators

In combination with ICs, Ceramic Discriminators obtain stable demodulation characteristics.

Ceramic Discriminators 10.7MHz Type



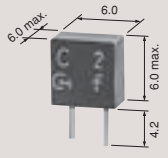
CDSCB Series

(in mm)

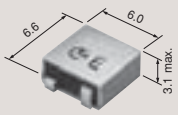
Series	Center Frequency
CDSCB	10.700MHz±30kHz

Recommended part number depends on IC specifications.
Please contact us with the IC part number to be applied.

Ceramic Discriminators 450/455kHz Type



CDBLB Series



CDBKB Series

(in mm)

Series	Center Frequency (kHz)
CDBLB	450/455
CDBKB	450/455

Recommended part number depends on IC specifications.
Please contact us with the IC part number to be applied.

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

RF Components

Broad lineup of RF Components for RF/Local circuits in communications equipment

Summary

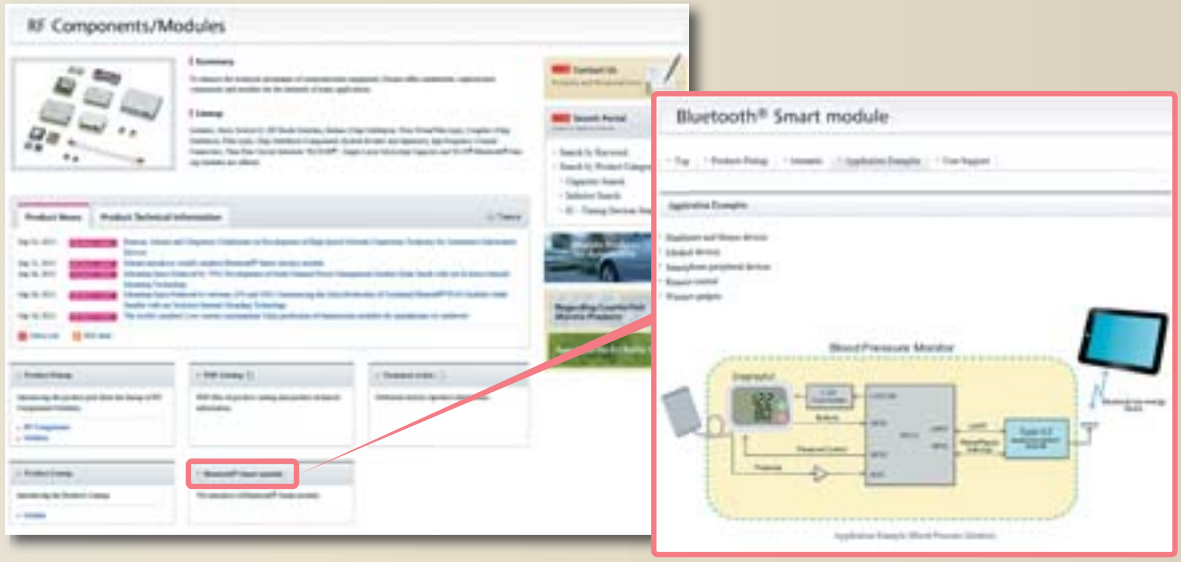
To enhance the technical advantages of communication equipment, Murata offers miniaturized, sophisticated components to meet the demands of many applications.

Lineup

●Isolators ●GaAs Switch ICs ●RF Diode Switches
●Baluns (Chip Multilayer and Wire Wound/Film type)
●Couplers (Chip Multilayer and Film type)
●Chip Multilayer Components (Hybrid Dividers and Diplexers) ●High Frequency Coaxial Connectors
●Single Layer Microchip Capacitors
●Thin Film Circuit Substrate RUSUB®

Web Content

Introducing the details of various RF products.



http://www.murata.com/products/microwave/

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.

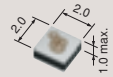
• High Frequency Single Layer Microchip Capacitors
Cat. No. C01E

http://www.murata.com/products/microwave/catalog/

Isolators

Passing signals in the forward direction and blocking signals in the reverse direction

For Mobile Phones

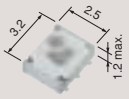


CEG23 Series

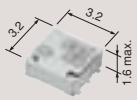
(in mm)

Series	Adaptive Frequency Range (MHz) 100 1000 2000 3000	Size (mm)	Rating Power (W)
CEG23	700 – 2600	2.0×2.0×1.0 max.	1.2 max.

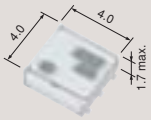
For Base Stations



CES20 Series



CES30 Series



CES40 Series

(in mm)

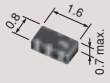
Series	Adaptive Frequency Range (MHz) 100 1000 2000 3000	Size (mm)	Rating Power (W)
CES20	1900 – 2600	3.2×2.5×1.2 max.	5 max.
CES30	1700 – 2200	3.2×3.2×1.6 max.	5 max.
CES40	800 – 950	4.0×4.0×1.7 max.	5 max.

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

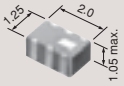
Baluns

SMD baluns constructed with a copper conductor and ceramic material. Ideal for high-frequency applications. Small-size and low-loss baluns can be customized for balance impedance of 50Ω to 200Ω.

Chip Multilayer Type

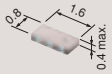


LDB18 Series



LDB21 Series

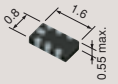
LDM15 Series



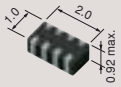
LDM18 Series

(in mm)

Film Type



DXP18B Series



DXP2AB Series

(in mm)

Wire Wound Type

DXW21B Series

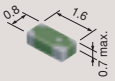
(in mm)

Couplers

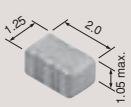
An ultra-small, low-profile directional coupler based on ceramic multilayer technology. This coupler achieves ultra-small size, low insertion loss and high isolation.

Chip Multilayer Type

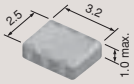
LDC15 Series



LDC18 Series



LDC21 Series
*It is available with Integrated LPF for LDC21 Series.

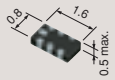


LDC32 Series
(3dB Hybrid)

(in mm)

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Film Type

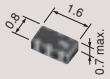


DXP18C Series

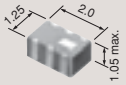
(in mm)

Chip Multilayer Hybrid Dividers

Power divider with a multilayer low pass filter in an ultra-compact package.



LDD18 Series

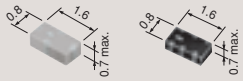


LDD21 Series

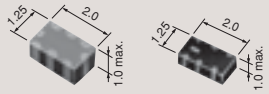
(in mm)

Chip Multilayer Diplexers

A diplexer branching low and high band.
Suitable for band-switching for dual-band system.



LFD18 Series



LFD21 Series

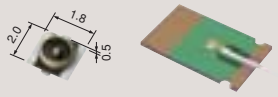
(in mm)

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

High Frequency Coaxial Connectors

High Frequency Coaxial Cable Connectors

The mating height is only 1.0mm maximum by new mechanical design. Suitable for low profile design.

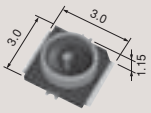


MM5829-2700

MXJA01_____

MM4829-2702

MXHP32_____



MM9329-2700

MXTK92_____

(in mm)

Type	Receptacle Part Number	Rated Voltage (Vrms)	Frequency Rating (GHz)	Temperature Range	VSWR	Cable Number	Mating Height (mm)
JSC	**MM5829-2700**	30	to 12	-40 to 85°C	1.3 max. (DC to 3GHz)	**MXJA01_____**	1.0 max.
HSC	**MM4829-2702**	250	to 6	-40 to 85°C	1.3 max. (DC to 3GHz)	**MXHP32_____**	1.2 max.
GSC	**MM9329-2700**	250	to 6	-40 to 90°C	1.2 max. (DC to 3GHz)	**MXTK92_____**	2.0 max.

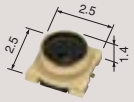
Nominal Impedance: 50Ω

High Frequency Coaxial Connectors with Switch

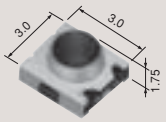
The coaxial connector with switch is very useful for characteristic measurement in cellular phones and microwave circuits.

MM8930-2600

MM8030-2610



MM8130-2600



MM8430-2610

(in mm)

Type	Receptacle Part Number	Rated Voltage (Vrms)	Frequency Rating (GHz)	Temperature Range	VSWR	Standard Measurement Probe Part Number
SWH	**MM8930-2600**	250	to 6	-40 to 85°C	1.2 max. (DC to 3GHz)	**MM126515 MXHQ87PA3000**
SWG	**MM8030-2610**	250	to 11	-40 to 85°C	1.2 max. (DC to 3GHz)	**MM126320 MXHQ87WJ3000**
SWF	**MM8130-2600**	250	to 6	-40 to 85°C	1.2 max. (DC to 3GHz)	**MM126036 MXHS83QE3000**
SWD	**MM8430-2610**	250	to 6	-40 to 85°C	1.2 max. (DC to 3GHz)	

Nominal Impedance: 50Ω

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Single Layer Microchip Capacitors

Very reliable performance and excellent frequency characteristics

Temperature Compensation Type

Capacitance Change (Temperature Range)	Series	Size (mm)	Rated Voltage (Vdc)	Capacitance Range at 25°C (pF)	Operating Temperature Range (°C)
0±30ppm/°C (-25 to 85°C)	CLB0A	0.25×0.25	100	0.1	-55 to 125
	CLB0C	0.35×0.25	100	0.2	-55 to 125
	CLB0D	0.38×0.38	100	0.2 0.4	-55 to 125
	CLB05	0.5×0.5	100	0.3 0.6	-55 to 125
	CLB0E	0.55×0.38	100	0.5 0.6	-55 to 125
	CLB0F	0.64×0.64	100	0.3 1	-55 to 125
	CLB0G	0.7×0.5	100	0.7 1	-55 to 125
	CLB0H	0.71×0.38	100	0.7 0.8	-55 to 125
	CLB0J	0.76×0.76	100	0.4 1.3	-55 to 125
	CLB09	0.9×0.9	100	0.5 1.8	-55 to 125
	CLB1A	1.00×0.64	100	1.1 1.6	-55 to 125
	CLB1B	1.09×0.76	100	1.5 2	-55 to 125
	CLB1C	1.27×1.27	100	1 3.6	-55 to 125
	CLB1E	1.49×0.9	100	2 2.7	-55 to 125
	CLB1G	1.73×1.27	100	3.9 4.7	-55 to 125
	CLB1H	1.78×1.78	100	1.8 6.8	-55 to 125
	CLB2C	2.19×1.27	100	5.1	-55 to 125
	CLB2E	2.29×2.29	100	3 10	-55 to 125
	CLB2L	2.95×1.78	100	7.5 10	-55 to 125
	CLB3G	3.71×2.29	100	11 16	-55 to 125
-750±60ppm/°C (-25 to 85°C)	CLB0A	0.25×0.25	100	0.3 0.7	-55 to 125
	CLB0B	0.30×0.25	100	0.8	-55 to 125
	CLB0C	0.35×0.25	100	0.9	-55 to 125
	CLB0D	0.38×0.38	100	0.9 1.6	-55 to 125
	CLB05	0.5×0.5	100	1 2.4	-55 to 125
	CLB0E	0.55×0.38	100	1.8 2.4	-55 to 125
	CLB0F	0.64×0.64	100	2 4.3	-55 to 125
	CLB0G	0.7×0.5	100	2.7 3	-55 to 125
	CLB0H	0.71×0.38	100	2.7	-55 to 125
	CLB0J	0.76×0.76	100	3 6.2	-55 to 125
	CLB09	0.9×0.9	100	3.3 6.8	-55 to 125
	CLB1A	1.00×0.64	100	4.7 6.2	-55 to 125
	CLB1B	1.09×0.76	100	6.8 7.5	-55 to 125
	CLB1C	1.27×1.27	100	7.5 15	-55 to 125
	CLB1E	1.49×0.9	100	7.5 9.1	-55 to 125
	CLB1H	1.78×1.78	100	13 15	-55 to 125
	CLB2E	2.29×2.29	100	20	-55 to 125

Some capacitances are not available in the CLB05 Series.
All Single Layer Microchip Capacitors are produced after receiving an order.

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

High Dielectric Constant Type

Capacitance Change (Temperature Range)	Series	Size (mm)	Rated Voltage (Vdc)	Capacitance Range at 25°C (pF)	Operating Temperature Range (°C)
±10% (-25 to 85°C)	CLB0A	0.25×0.25	100	5.6 – 12	-55 to 125
	CLB0B	0.30×0.25	100	13 – 15	-55 to 125
	CLB0C	0.35×0.25	100	16 – 18	-55 to 125
	CLB0D	0.38×0.38	100	18 – 30	-55 to 125
	CLB05	0.5×0.5	100	22 – 43	-55 to 125
	CLB0E	0.55×0.38	100	33 – 43	-55 to 125
	CLB0F	0.64×0.64	100	43 – 75	-55 to 125
	CLB0G	0.7×0.5	100	47 – 68	-55 to 125
	CLB0H	0.71×0.38	100	47 – 56	-55 to 125
	CLB0J	0.76×0.76	100	68 – 110	-55 to 125
	CLB09	0.9×0.9	100	68 – 130	-55 to 125
	CLB1A	1.00×0.64	100	82 – 120	-55 to 125
	CLB1C	1.27×1.27	100	160 – 200	-55 to 125
	CLB1E	1.49×0.9	100	150 – 160	-55 to 125
	CLB1G	1.73×1.27	100	300	-55 to 125
	CLB1H	1.78×1.78	100	300 – 430	-55 to 125
	CLB2E	2.29×2.29	100	470 – 620	-55 to 125
+30, -80% (-25 to 85°C)	CLB0A	0.25×0.25	100	27 – 33	-55 to 125
	CLB0B	0.30×0.25	100	36 – 39	-55 to 125
	CLB0C	0.35×0.25	100	43 – 51	-55 to 125
	CLB0D	0.38×0.38	100	62 – 82	-55 to 125
	CLB05	0.5×0.5	100	75 – 130	-55 to 125
	CLB0E	0.55×0.38	100	91 – 120	-55 to 125
	CLB0F	0.64×0.64	100	130 – 220	-55 to 125
	CLB0G	0.7×0.5	100	150 – 200	-55 to 125
	CLB0H	0.71×0.38	100	130 – 150	-55 to 125
	CLB0J	0.76×0.76	100	200 – 300	-55 to 125
	CLB09	0.9×0.9	100	200 – 390	-55 to 125
	CLB1A	1.00×0.64	100	240 – 360	-55 to 125
+30, -90% (-25 to 85°C)	CLB0A	0.25×0.25	100	36 – 56	-55 to 125
	CLB0D	0.38×0.38	100	91 – 150	-55 to 125
	CLB05	0.5×0.5	100	130 – 220	-55 to 125
	CLB0F	0.64×0.64	100	220 – 390	-55 to 125
	CLB0J	0.76×0.76	100	330 – 560	-55 to 125
	CLB09	0.9×0.9	100	390 – 680	-55 to 125

Some capacitances are not available in the CLB0A/B/C/D/E, CLB1C Series.
All Single Layer Microchip Capacitors are produced after receiving an order.

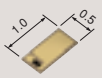
For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Thin Film Circuit Substrate RUSUB®

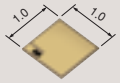
Suitable for Photo diode module.

Features

- RUSUB® technology provides a single-layer capacitor and thin film resistor formed in one chip. It reduces not only the number of parts to build a device, but also the assembly costs. It will also contribute to making a device smaller.
- The single-layer structure makes its self-resonant frequency higher. It allows stable operation even at a high frequency range.
- The short distance between the capacitor and thin film resistor makes the residue inductance smaller and contributes to attenuating unnecessary noise so the device can work at its best characteristics.
- Since it has a gold electrode, it is feasible to be installed inside a module, and it allows wire-bonding with gold wire.
- AuSn pre-coating finish is also available.
- It is very suitable for APD (Avalanche Photo Diode), because the capacitor has a withstanding voltage of 100V.



RUCYT101 Series



RUCYT201 Series

(in mm)

- Six types of standard samples of RUSUB® C+R (Capacitor + Resistor) are available.
- Custom substrate size, capacity, resistance value, and electrode pattern shape is available upon request.

Part Number	Size (mm) (L×W×T)	Capacitance (pF)	Resistance (Ω)	Temperature Characteristics of Capacitance at -25 to 85°C	Capacitor Rated Voltage (V)	Temperature Coefficient of Resistance (ppm/°C)	Resistor Rated Power (mW/mm²)
RUCYT101K00009GNTC	1.0×0.5×0.11	100±10%	50±20%	±10%	100	-70±50	100
RUCYT101K00011GNTC	1.0×0.5×0.11	100±10%	100±20%				
RUCYT101K00012GNTC	1.0×0.5×0.11	100±10%	200±20%				
RUCYT201K00010GNTC	1.0×1.0×0.12	200±10%	50±20%				
RUCYT201K00013GNTC	1.0×1.0×0.12	200±10%	100±20%				
RUCYT201K00014GNTC	1.0×1.0×0.12	200±10%	200±20%				

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Sensors

Offering sensing elements for various applications

Summary

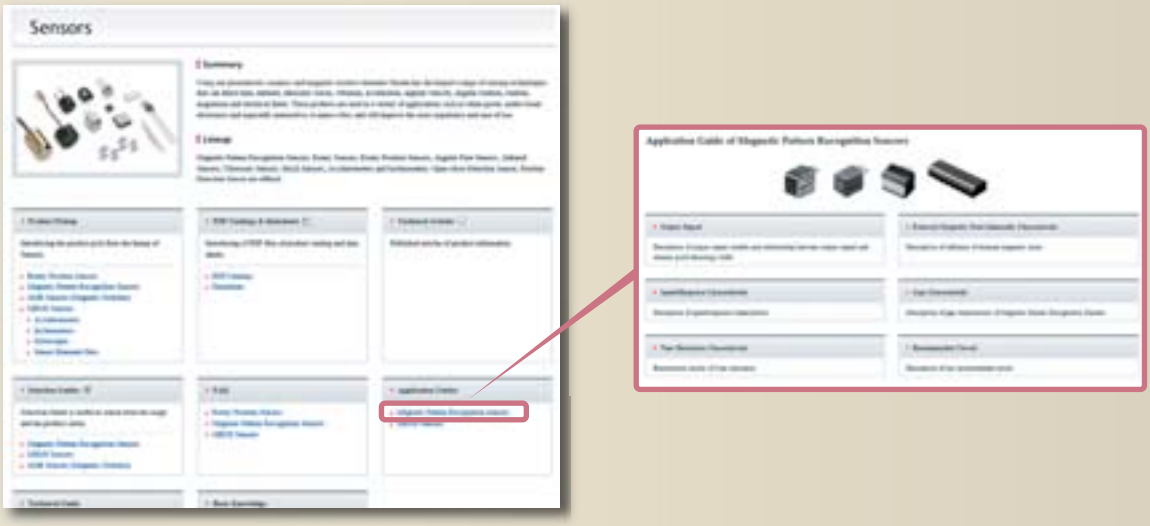
Using our piezoelectric ceramics and magnetic resistive elements Murata has developed a range of sensing technologies that can detect heat, infrared, ultrasonic waves, vibration, acceleration, angular velocity, angular rotation, rotation, magnetism and electrical fields. These products are used in a variety of applications such as white goods, audio/visual electronics and especially automotive, to name a few, improving the user's experience.

Lineup

●Infrared Sensors ●Ultrasonic Sensors ●Rotary Sensors ●Magnetic Pattern Recognition Sensors
●Magnetic Switches ●Shock Sensors ●Accelerometers ●Inclinometers ●Angular Rate Sensors
●Rotary Position Sensors ●Temperature Sensors (Thermistors)

Web Content

Introducing Sensor details on our website.



http://www.murata.com/products/sensor/

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.

• MEMS Sensors & Sensing Elements	Cat. No. S47E
• Rotary Position Sensors	Cat. No. R51E
• Pyroelectric Infrared Sensors	Cat. No. S21E
• NTC Thermistors	Cat. No. R44E
• POSISTOR® for Circuit Protection	Cat. No. R90E

http://www.murata.com/products/sensor/catalog/

Product Pickup

Rotary Position Sensors

The output voltage of contact type rotary position sensors are proportional to the rotational angle of a rotor in potentiometer fashion.

SV Series

For more details, please refer to our website.
http://www.murata.com/products/sensor/

Magnetic Switches (AMR Sensors)

Magnetic switches are used for opening and shutting detection in products such as cellular phones, notebook PCs, and digital cameras.
You can choose the best product from our wide range of features such as the direction of the magnetic field detection, the package, the sampling period, and the sensitivity standard.

MR Series

For more details, please refer to our website.
http://www.murata.com/products/sensor/

Magnetic Pattern Recognition Sensors

Magnetic pattern recognition sensors are suitable for differentiation of bank note types and patterns printed with magnetic ink.
Murata's magnetic pattern recognition sensors combine InSb (indium antimonide) magnetoresistive elements with a permanent magnet, enabling weak magnetic information to be easily detected. The features of these sensors are wide dynamic range, wide gap characteristic, and high output, enabling detection of either ferromagnetic or magnetic patterns.

BS05 Series

BS05 Series

For more details, please refer to our website.
http://www.murata.com/products/sensor/

Temperature Sensors NTC/PTC Thermistors

NTC/PTC Thermistors are used to detect overheating. Murata offers a variety of thermistor products to meet the demands of various temperatures.

NCP Series

NX Series

PRF Series

PTF Series

For more details on Thermistors, please refer to p.60.

For more details, please refer to our website.
http://www.murata.com/products/thermistor/

Accelerometers

Accelerometers are based on the company's proprietary 3-D MEMS technology.
Accelerometers have excellent performance and reliability in a humid environment and at temperature cycling, making high accuracy acceleration detection possible.

SCA Series

For more details, please refer to our website.
http://www.murata.com/products/sensor/

Angular Rate Sensors

Gyroscope components and combined sensors (including gyroscopes and accelerometers) based on the company's proven 3-D MEMS technology and highly integrated electronics. High accuracy and high performance sensors are optimum for navigation systems and motion analysis.

SCC Series

For more details, please refer to our website.
http://www.murata.com/products/sensor/

Lineup

Detection	Murata's Sensors			Applications											
				AV Equipment					Communications Devices						
	Products	Series or Main Part Number	Dimensions (mm)	TV	Audio	DVD, CD	Digital Video Camera	Digital Camera	PC	Scanner	Multifunction Machine	Printer	FAX	Electronic Bulletin Board
Infrared	Pyroelectric Infrared Sensors	IRS Series	4.9×4.7×2.4	●										●
		IRA Series	ø9.2 H4.7	●	●	●		●	●	●	●	●	●	●
Ultrasonic	Ultrasonic Sensors Open Structure Type	MA40S4R (for Receiver) MA40S4S (for Transmitter)	ø9.9 H7.1											●
	Ultrasonic Sensors Enclosed Type	MA58AF14-0N (for Dual Use)	ø14.0 H9.0											
	Ultrasonic Sensors High Frequency Type	MA300D1-1 (for Dual Use)	ø9.9 H7.3							●	●	●		
Magnetic	Rotary Sensors	FR05CM21AR	ø12.7 H20											
	Magnetic Pattern Recognition Sensors	BS05 Series	11.15×8.8×12.5 193.0×16.0×7.5											
	Magnetic Switches (AMR Sensors)	MR Series	MRMS201A: 2.8×2.9×1.1 MRMS501A: 1.45×1.45×0.55				●	●	●					
Acceleration	Shock Sensors	PKGS Series	3.2×2.0×1.05						●					
	Accelerometers	SCA Series	10.48×11.31×5.08											
	Inclinometers	SCA Series	15.58×11.31×5.08								●			
Angle Velocity	Angular Rate Sensors	SCC Series	8.5×18.7×4.5											
Angle	Rotary Position Sensors	SV Series	11×12×2.1	●				●			●	●		
Temperature	NTC Thermistors	Chip Type NCP Series	NCP03: 0.6×0.3×0.3 NCP15: 1.0×0.5×0.5 NCP18: 1.6×0.8×0.8 NCP21: 2.0×1.25×0.85	●	●	●	●	●	●	●	●	●	●	●
		Lead Type NX Series	NXF: ø1.2 L25 to 150 NXR: ø4.0 L10 to 40	●	●				●	●	●	●	●	●
	PTC Thermistors POSISTOR®	Chip Type PRF Series	PRF15: 1.0×0.5×0.5 PRF18: 1.6×0.8×0.8 PRF21: 2.0×1.25×0.9	●	●	●	●	●	●	●	●	●	●	●
		Lead Type PTF Series	ø5.0 max. T4.0 max. ø7.5 T3.0	●	●				●	●	●	●	●	●

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Applications																								
Home Electronics											Security				Car Electronics			Toy		Others				
Refrigerator	Electric Rice-cooker	Air Conditioner	Air Purification System	Humidifier	Cleaner	Laundry Machine	Food Fan	Water Heater	Toilet Seats with a Warm-water Shower Feature	Lighting	Security Camera	Security Light	Indoor Security Sensor	Intrusion Detection Sensor	Navigation System	Climate Control	Parking Assist	Radio Control (Attitude Control)	Game Controller	Machine Tool	ATM, CD	Vending Machine	Amusement Machine	Murata's Sensors Products
																								Pyroelectric Infrared Sensors
●		●	●	●				●	●	●	●	●	●	●					●		●	●	●	
		●			●					●				●						●	●	●	●	Ultrasonic Sensors Open Structure Type
																	●							Ultrasonic Sensors Enclosed Type
																					●			Ultrasonic Sensors High Frequency Type
																				●				Rotary Sensors
																					●	●		Magnetic Pattern Recognition Sensors
●	●		●	●	●	●			●					●						●	●		●	Magnetic Switches (AMR Sensors)
																								Shock Sensors
						●														●			●	Accelerometers
																				●				Inclinometers
						●									●					●			●	Angular Rate Sensors
●		●				●		●	●	●	●				●	●			●				●	Rotary Position Sensors
●	●	●	●	●	●	●	●	●	●	●					●				●			●	●	NTC Thermistors
●	●	●	●	●	●	●	●	●	●	●												●	●	
●	●	●	●	●	●	●	●	●	●	●					●				●				●	PTC Thermistors POSISTOR®
				●	●	●	●	●	●	●													●	

Thermistors

Facilitate your designs and products utilizing our thermal design and thermistor products.

Summary

Using Murata's semi-conductive ceramics and electrode printing technologies, such as PTC and NTC Thermistors, provides vital protection and sensing within electronic equipment. Simulation software tools are also available for your convenience.

Lineup

●NTC Thermistors (for temperature sensor/compensation, inrush current suppression, and automotive)
●PTC Thermistors POSISTOR® (for overheat sensing, overcurrent protection, inrush current suppression, and automotive)

Features

●**Chip Type NTC Thermistor for Temperature Sensor/ Compensation**
We have many series of thermistor products with a wide variety of resistance and B-Constant.
The line-up is still expanding, for example,
1. Small size 01005 inch size
2. Tighter tolerance series such as +/-0.5% on resistance value.

●**Lead Type NTC Thermistor for Sensing Temperature**
Thermostring products that consist of SMD type NTC with lead wire.
This product has the following advantages:
1. Small head size due to 0402 inch sized chip NTC (NCP15 Series) inside.
2. Soft lead wire
3. Excellent thermal response

●**Chip Type PTC Thermistor for Overheat Sensing**
PTC thermistor detects abnormal temperatures.
The sensing temperature range is 65°C to 150°C.
We have devised the PRF15 (0402 inch size) Series, which are the smallest PTC thermistors in the world with a tight sensing temperature tolerance of ±3°C.

●**Chip Type PTC Thermistor for Overcurrent Protection**
Our PRG Series of PTC thermistor can be used as a resettable fuse.
Murata provides a variety of PRG Series in different sizes: 0402 (PRG15), 0603 (PRG18) and 0805 (PRG21) inch.
The hold current is up to 500mA and maximum voltage is up to 30V.

●**Lead Type PTC Thermistor for Overcurrent Protection**
Murata has many series of lead type PTC products; some of our series have a hold current up to 1200mA and maximum voltage is up to 265V.
Some series have a resistance tolerance of ±10%.

Web Content

Introducing Thermistor content on our website.

Product Lineup ⇒ http://www.murata.com/products/thermistor/

Product Search ⇒ http://search.murata.co.jp/

We offer simulation software tools.

Design Tool ⇒ http://www.murata.com/products/thermistor/design_support/

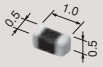
NTC Thermistors (for Temperature Sensor/Temperature Compensation)

Chip Type

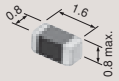
Chip NTC Thermistors have Ni barrier terminations, provide excellent solderability, and offer high stability in harsh environments due to their unique inner construction.

NCP02 Series

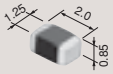
NCP03 Series



NCP15 Series



NCP18 Series



NCP21 Series

(in mm)

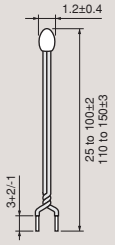
Series	Size Code Inch (mm)	Resistance (25°C) (Ω)	B-Constant (25-50°C) (K)	Permissive Operating Current (25°C) (mA)	Rated Electric Power (25°C) (mW)	Typical Dissipation Constant (25°C) (mW/°C)	Operating Temperature Range (°C)
NCP02	01005 (0402)	100k	4250	0.01	100	1	-40 to 125
NCP03	0201 (0603)	1.0k to 220k	3500 to 4485	0.06 to 9.5	100	1	-40 to 125
NCP15	0402 (1005)	22 to 470k	3100 to 4500	0.04 to 6.7	100	1	-40 to 125
NCP18	0603 (1608)	100 to 470k	3250 to 4500	0.04 to 3.1	100	1	-40 to 125
NCP21	0805 (2012)	220 to 100k	3500 to 4250	0.14 to 3.0	200	2	-40 to 125

Rated Electric Power shows the required electric power that causes the Thermistor's temperature to rise to 125°C by self heating, at ambient temperature of 25°C.

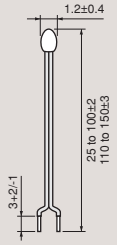
Please use our online search tool to narrow the search for NCP Series.
http://www.murata.com/products/thermistor/cptc_lineup_nthchp/index.php

Thermo String Type

Small flexible lead type NTC Thermistors with a small head and a thin lead wire.



Twist
NXFT15_1B Series



Without twist
NXFT15_2B Series

(in mm)

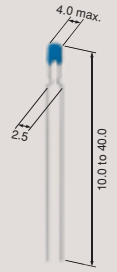
Series	Resistance (25°C) (Ω)	B-Constant (25-50°C) (K)	Operating Current for Sensor (25°C) (mA)	Thermal Time Constant (25°C) (s)	Full Length (mm)	Operating Temperature Range (°C)
NXFT15	10k to 100k	3380 to 4250	0.04 to 0.12	4	25 to 150	-40 to 125

Operating Current for Sensor raises the Thermistor's temperature by 0.1°C.
There are also items for automotive use in the NXF Series.

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Lead Type

This product is a thermistor for normal temperature level sensors having self-subsistence due to strong lead strength based on chip NTC.



NXRT15 Series

(in mm)

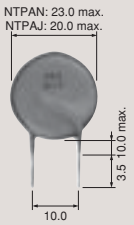
Series	Resistance (25°C) (Ω)	B-Constant (25-50°C) (K)	Operating Current for Sensor (25°C) (mA)	Thermal Time Constant (25°C) (s)	Full Length (mm)	Operating Temperature Range (°C)
NXRT15	2k to 100k	3500 to 4250	0.04 to 0.27	4	10 to 40	-40 to 125

Operating Current for Sensor raises the Thermistor's temperature by 0.1°C.
There are also items for automotive use in the NXR Series.

Please use our online search tool to narrow the search for NXRT Series.
http://www.murata.com/products/thermistor/cptc_lineup_nx_t/index.php

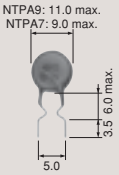
NTC Thermistors (for Inrush Current Suppression)

Effectively suppresses surge currents that are generated when switching power regulators are turned on.



NTPAN / NTPAJ Series

NTPAD / NTPAA Series



NTPA7 / NTPA9 Series

(in mm)

Series	Resistance (25°C) (Ω)	Permissible Max. Current (25°C) (A)	Permissible Max. Current (55°C) (A)	Thermal Time Constant (25°C) (s)	Permissible Electrolytic Capacitor (100V) (μF)	Operating Temperature Range (°C)
NTPAN / NTPAJ	3 to 10	2.6 to 5.4	2.2 to 4.7	125 to 135	5000 to 8600	-20 to 160
NTPAD / NTPAA	2.2 to 16.0	1.7 to 3.7	1.5 to 3.2	65 to 70	1400 to 2700	-20 to 160
NTPA7 / NTPA9	4.0 to 22.0	1.0 to 2.3	0.88 to 2.0	40 to 65	400 to 800	-20 to 160

Please our online search tool to narrow the search for NTP Series.
http://www.murata.com/products/thermistor/cptc_lineup_ntp/index.php

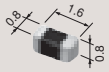
For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

PTC Thermistors POSISTOR® (for Overheat Sensing)

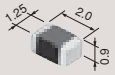
Chip Type

For overheat sensing for power transistors, power diodes, and power ICs in hybrid circuits.

PRF15 Series



PRF18 Series



PRF21 Series

(in mm)

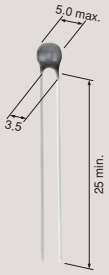
Series	Sensing Temperature Range (°C) 60 70 80 90 100 110 120 130 140 150	Sensing Temperature Tolerance (°C)	Maximum Voltage (V)	Size Code Inch (mm)
PRF15		±3/±5	32	0402 (1005)
PRF18		±3/±5	32	0603 (1608)
PRF21		±5	32	0805 (2012)

There are also items for automotive use in the PRF Series.

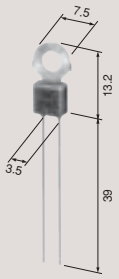
Please use our online search tool to narrow the search for PRF Series.
http://www.murata.com/products/thermistor/cptc_lineup_prf/index.php

Lead Type

For protecting power transistors, stereo main amplifiers, etc., from overheating, and also for sensing the temperature of other components that may be overheated.



PTFL Series



PTFM Series

(in mm)

Series	Sensing Temperature Range (TS) (°C) 60 70 80 90 100 110 120 130 140 150	Maximum Voltage (V)	Resistance (25°C) (max.) (Ω)	Resistance (TS-10°C) (max.) (Ω)	Resistance (TS°C) (min.) (Ω)
PTF□_471Q		16	100	330	470
PTF□_222Q		16	330	1.5k	2.2k

The blank is filled with type codes. (L: Lead type, M: with lug-terminal)
Operating Temperature Range is -10 to TS+10°C.

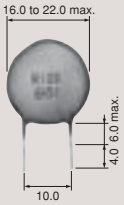
Please use our online search tool to narrow the search for PTF Series.
http://www.murata.com/products/thermistor/cptc_lineup_ptf/index.php

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

PTC Thermistors POSISTOR® (for Inrush Current Suppression)

This series is able to support overcurrent or inrush current issues on the power supply circuit.

PTGL07AS Series



PTGL14 to 20AS Series

(in mm)

Series	Resistance (25°C) (Ω)	Maximum Voltage (V)	Maximum Inrush Current (Ao-p)	Maximum Charge Energy (J)	Operating Temperature Range (°C)
PTGL07AS	120 to 200	280	5.66 to 8.46	7.8	-40 to 105
PTGL14 to 20AS	33 to 100	280	13 to 39	56.9 to 181.7	-20 to 85

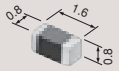
Maximum Inrush Current shows the maximum inrush current value introduced into the Posistor at operating temperature range.

PTC Thermistors POSISTOR® (for Overcurrent Protection)

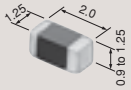
Chip Type

Overcurrent Protection device with resettable function suitable for current limiting resistor.

PRG15 Series



PRG18 Series



PRG21 Series

(in mm)

Series	Maximum Voltage (V)	Hold Current (60°C) (mA)	Trip Current (-10°C) (mA)	Maximum Current (A)	Resistance (25°C) (Ω)	Size Code Inch (mm)
PRG15	6 to 30	25 to 88	92 to 318	1.2 to 3.5	2.2 to 33	0402(1005)
PRG18	6 to 24	7 to 220	25 to 850	0.06 to 7.5	1.0 to 470	0603 (1608)
PRG21	6 to 30	30 to 500	110 to 2000	1.1 to 10	0.2 to 22	0805 (2012)

Maximum Current shows typical transformer capacities that can be used.
There are also items for automotive use in the PRG Series.

Please use our online search tool to narrow the search for PRG Series.
http://www.murata.com/products/thermistor/cptc_lineup_prg/index.php

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Lead Type

Best suited to meet the requirements for power supplies and motor protection.
Error-free operations are assured by rush current.

(in mm)

PTGL Series
*The Lead shape is an example.

Series	Maximum Voltage (V)	Hold Current (60°C) (mA)	Trip Current (-10°C) (mA)	Maximum Current (A)	Resistance (25°C) (Ω)
PTGL	16	370 to 1200	1040 to 3360	2.0 to 10.0	0.15 to 1.0
	24	80 to 180	320 to 710	2.0	2.2 to 10
	30	122 to 685	240 to 1900	0.7 to 7.0	0.8 to 13
	32	30 to 60	140 to 240	1.5	15 to 47
	51	213 to 749	332 to 1168	1.0 to 5.0	1.2 to 10
	56	90 to 380	240 to 980	1.0 to 2.5	3.3 to 22
	60	88 to 439	175 to 867	1.0 to 5.0	2.2 to 22
	80	50 to 310	135 to 860	0.7 to 5.5	3.7 to 55
	125	30 to 420	75 to 1050	0.3 to 2.0	3.3 to 180
	140	74 to 340	147 to 780	0.5 to 3.5	4.7 to 56
	250	90 to 100	280 to 300	0.5 to 0.6	12 to 39
	265	28 to 300	78 to 830	0.2 to 4.1	6.0 to 180

Maximum Current shows typical transformer capacities that can be used.
There are also items for automotive use in the PTGL Series.

Please use our online search tool to narrow the search for PTGL Series.
http://www.murata.com/products/thermistor/cptc_lineup_ptg/index.php

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.

• NTC Thermistors	Cat. No. R44E
• POSISTOR® for Circuit Protection	Cat. No. R90E
• PTC Thermistor (POSISTOR®) Application Manual	Cat. No. R16E
• PTC - NTC for Surface Mounting Application	Cat. No. R01E

http://www.murata.com/products/thermistor/catalog/

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Power Supplies/Energy Devices

Eco-friendly and high quality power supplies

Summary

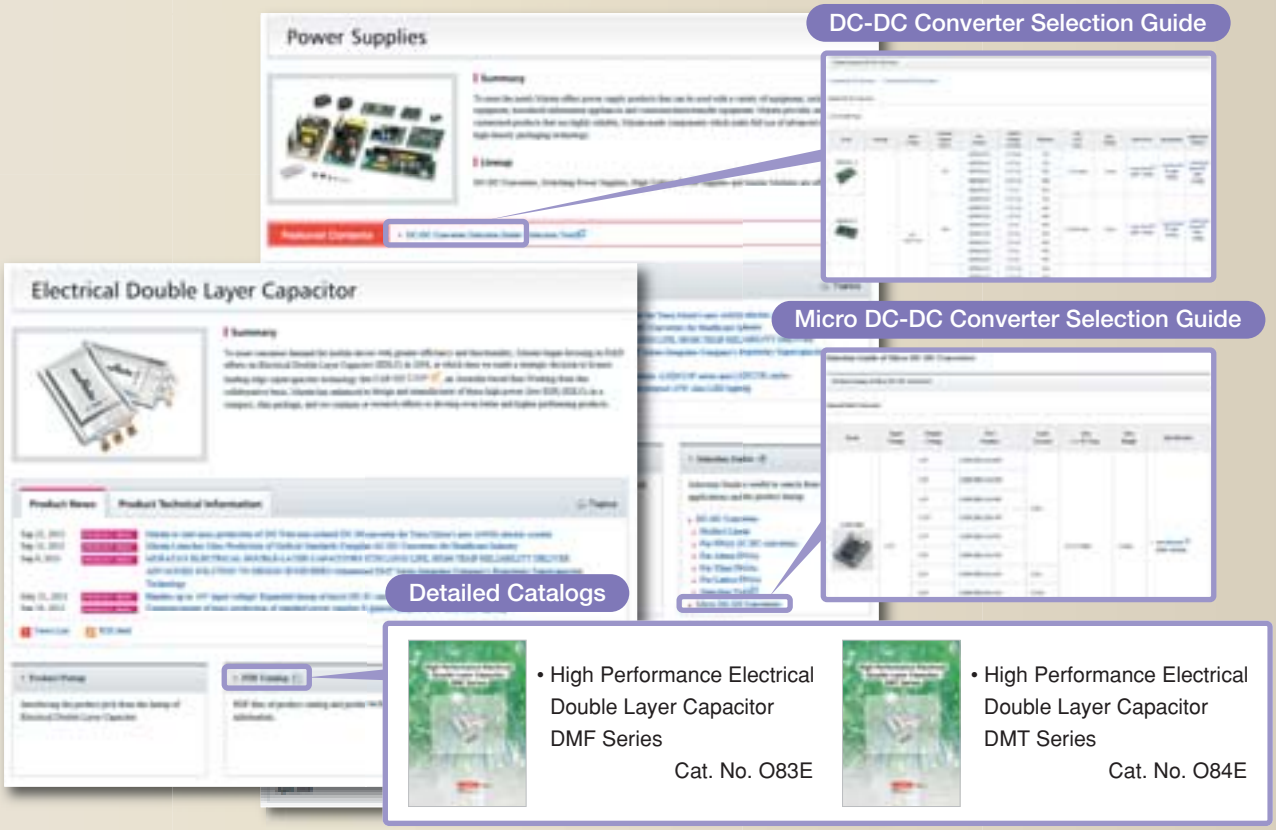
To meet consumer needs Murata offers power supply products and energy devices that can be used with a variety of equipment, such as video equipment, household information appliances, and communication/ transfer equipment. Murata provides standard and customized products using highly reliable, Murata-made components utilizing advanced design and high-density packaging technology. The electrical double-layer capacitor is an energy device that can provide various merits such as downsizing, efficiency, and high function.

Lineup

●DC-DC Converters ●Micro DC-DC Converters ●High Voltage Transformers ●High Voltage Power Supplies
●Switching Power Supplies ●Electrical Double Layer Capacitors

Web Content

Introducing DC-DC Converter and Electrical Double Layer Capacitor content on our website.



Power Supplies ⇒ http://www.murata.com/products/power/
Electrical Double Layer Capacitors ⇒ http://www.murata.com/products/edlc/

DC-DC Converters

DC-DC Converters are vital to the demands of electronic equipment.
Murata offers DC-DC Converters that set the standard for miniaturization, low profile, high efficiency, power-saving, low noise power supplies. Murata provides standard products and customized products, ultra-low-profile products, and products for FPGA.

Non-isolated Type


MPDRX002S


MPDRX103S


MYGTM01210BZN


MYGTR01205BZN


MYSSM0123EBENL


MYUSP3R303FMP


MPDRX312S


OKL-T/3-W5N-C


OKL-T/6-W12P-C


OKL2-T/20-W12P-C

Part Number	Package	Input Voltage (V)	Nominal Output Power (W)	Output Voltage (V)	Current (A)	Efficiency (%)	Size (mm) L×W×H
MPDRX002S	SMD	3.0 to 5.5	28.8	0.8 to 1.8	16	90	33.0×13.5×8.5
MPDRX103S	SIL	10.8 to 13.2	28.8	0.8 to 1.8	16	86	50.8×5.8×14.0
MYGTM01210BZN	SIL	17 to 40	120	5 to 12	10	97.3	40×40.3×29.2
MYGTR01205BZN	SIL	17 to 40	36	5 to 12	3 to 5.2	93	25.1×12×27
MYSSM0123EBENL	SMD	14 to 40	42	5 to 12	3.5	96	30.2×20.9×12
MYUSP3R303FMP	SMD	3.0 to 5.5	9.9	0.7 to 3.3	3	94	11.0×8.5×5.6
MPDRX312S	SMD	3.0 to 5.5	28.8	0.8 to 1.8	16	86.5	27.8×15.4×4.2
OKL-T/3-W5N-C	SMD	2.7 to 5.5	10.9	0.6 to 3.63	3	95.3	12.2×12.2×6.2
OKL-T/6-W12P-C	SMD	4.5 to 14	33	0.591 to 5.5	6	93	12.2×12.2×7.2
OKL2-T/20-W12P-C	SMD	4.5 to 14	110	0.69 to 5.5	20	94	33.02×13.46×8.75

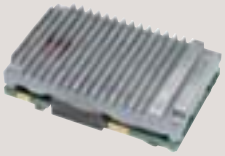
These are just a few examples of our large assortment of power products.

For more details on our product lineup, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/
Power Supplies Contents ⇒ http://www.murata.com/products/power/

Power Supplies/Energy Devices

Isolated Type


MYBQC01138AZTB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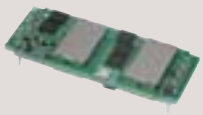
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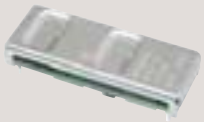
MYBEA01212AZTB


MYBEA01210CZT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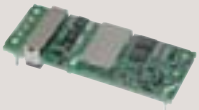

MYBEB00520AZT


MYBSC01208AZT
MYBSC00520AZT


MYBSC01208ABT
MYBSC00520ABT

Part Number	Package	Input Voltage (V)	Nominal Output Power (W)	Output Voltage (V)	Current (A)	Efficiency (%)	Isolation Voltage (VDC)	Footprint (Brick)	Size (mm) L×W×H
MYBQC01138AZTB	Insert	48V (36V to 75V)	400	10.6±6%	38	95.0	1500	1/4	58.4×36.8×14 max.
MYBQC01138AZTF	Insert	48V (36V to 75V)	400	10.6±6%	38	95.0	1500	1/4	58.4×36.8×17 max.
MYBEA01212AZT	Insert	48V (36V to 75V)	140	12±3%	12	92.5	1500	1/8	58.4×22.8×9 max.
MYBEA01212AZTB	Insert	48V (36V to 75V)	140	12±3%	12	92.5	1500	1/8	58.4×22.8×9 max.
MYBEA01210CZT	Insert	24V (18V to 36V)	120	12±3%	10	93.0	1500	1/8	58.4×22.8×9 max.
MYBEA01210CZTB	Insert	24V (18V to 36V)	120	12±3%	10	93.0	1500	1/8	58.4×22.8×9 max.
MYBEB00520AZT	Insert	48V (36V to 75V)	100	5±3%	20	93.0	1500	1/8	57.0×22.8×10 max.
MYBSC01208AZT	Insert	48V (36V to 75V)	100	12±3%	8	92.5	1500	1/16	33.0×23.2×10 max.
MYBSC01208ABT	SMD	48V (36V to 75V)	100	12±3%	8	92.5	1500	1/16	33.0×23.2×10 max.
MYBSC00520AZT	Insert	48V (36V to 75V)	100	5±3%	20	92.0	1500	1/16	33.0×22.8×10 max.
MYBSC00520ABT	SMD	48V (36V to 75V)	100	5±3%	20	92.0	1500	1/16	33.0×22.8×10 max.

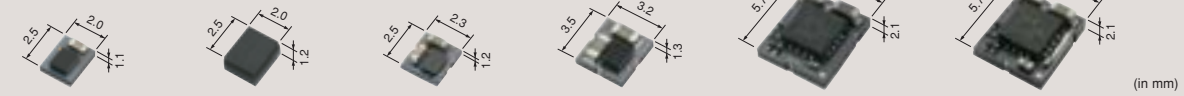
These are just a few examples of our large assortment of power products.

For more details on our product lineup, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/
Power Supplies Contents ⇒ http://www.murata.com/products/power/

Micro DC-DC Converters

Micro DC-DC Converters are ultra-small power modules that utilize a ferrite substrate and embedded power inductor with superior EMI suppression and mounted power management IC on the ferrite substrate.
The features are ultra-small size, superior EMI suppression, and low conductive and emitted noise, helping to reduce design and process cost. We have a wide range of voltages.

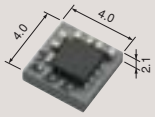
General Buck Converter



LXDC2HL Series　LXDC2HN Series　LXDC2UR Series　LXDC3EP Series　LXDC55F Series　LXDC55K Series

(in mm)

Boost Converter



LXDC44A Series

(in mm)

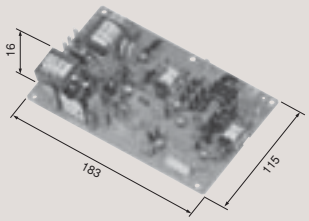
High Voltage Transformers

QF Type　QP Type　WP Type　NU Type　WR Type

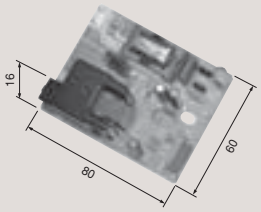
Series	Type	Features	Output Voltage Vout	Output Current Iout	Drive Frequency	Dimensions (mm) L×W×H
MSH	QF	Small Size	Max. 6kV	0.3mA	35 to 70kHz	39×24×13
	QP	Standard	Max. 8.5kV	0.4mA	35 to 70kHz	41×26×16
	WP	Low Profile	Max. 8.5kV	0.4mA	35 to 70kHz	44×27×11
	NU	High Power	Max. 8.5kV	1mA	30 to 70kHz	44×27×17
	WR	High Voltage	Max. 13kV	0.5mA	30 to 70kHz	49×25×27

For more details on our product lineup, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/
Power Supplies Contents ⇒ http://www.murata.com/products/power/

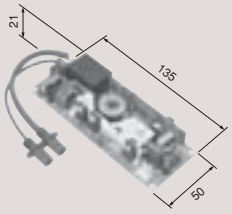
High Voltage Power Supplies



MPH7000 Series



MPH4000 Series
(for Air Purifier/Air Conditioner)



MPL3000 Series
(AC/DC Ballast)

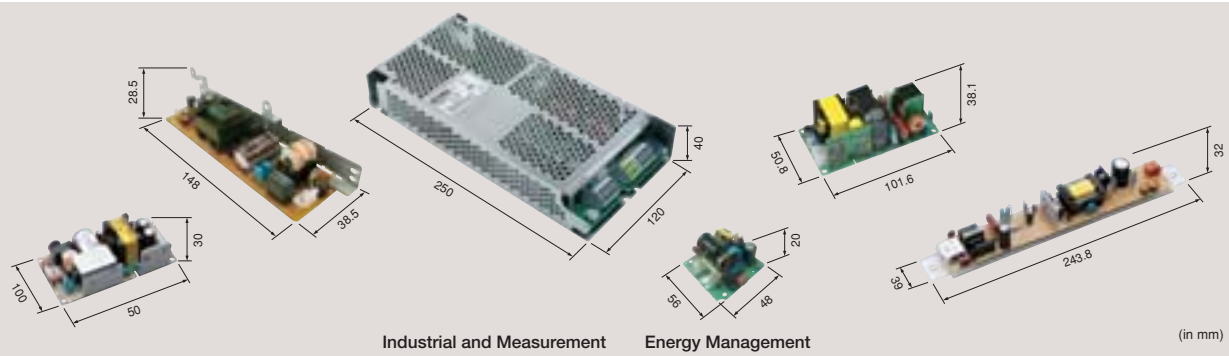
(in mm)

Series	Input Voltage Vin	Power Supply Type		Output Voltage Vout	Output Current Iout	Adjustable Range
MPH7000	24V DC	DC Constant Current		(6kV)	250μA	Iout: 200 to 300μA
		DC Constant Voltage		0.6kV	(1μA)	Vout: 550 to 650μV
		Switching	DC Constant Current	(-1.5kV)	-3μA	Iout: -2 to -4μA
			DC Constant Voltage	1.5kV	(0.5μA)	Vout: 1.4 to 1.6kV
		AC Constant Voltage		1.5kV rms	(250μA rms)	Vout: 1.3 to 1.7kV rms
MPH4000 (for Air Purifier/Air Conditioner)		DC Constant Voltage		±6kV	±400μA	—
		DC Constant Current		(±6kV)	±400μA	—

Series	Applications	Input Voltage Vin	Output Power	Other Specification
MPL3000 (AC/DC Ballast)	Projector	250 to 420V DC	to 350W	For extra-high pressure mercury lamp

For more details on our products, please contact us.

Switching Power Supplies



Medical Equipment | SOHO Equipment | Industrial and Measurement Equipment | Energy Management Equipment | PBX | LED Lighting

Applications	Input Voltage	Output Voltage	Safety Standard	EMI Standard	Remarks
Medical Equipment	90 to 264V AC	5V 12V 24V 48V	UL, IEC	CISPR	
SOHO Equipment	90 to 264V AC	5V 12V 24V 48V	UL, IEC	CISPR	Models that provide a power-saving standby mode are also available.
Industrial and Measurement Equipment	90 to 264V AC	24V	UL, IEC	VCCI	150W/300W
Energy Management Equipment	60 to 225V AC	3.3V 24V	UL, IEC	VCCI, CISPR	
PBX	90 to 264V AC	12V 48V	UL, IEC	CISPR	Operating Ambient Temperature 80℃
LED Lighting	90 to 264V AC	24V	IEC, PSE	VCCI, CISPR	PWM Dimming, Accepted for DALI, UART

For more details on our products, please contact us.

Electrical Double Layer Capacitors

Electrical Double-Layer Capacitors (EDLCs), often referred to as supercapacitors, are energy storage devices with high power density characteristics. Murata has focused its R&D efforts on electrical double-layer energy devices, and also established collaboration with the component design and manufacturing firm CAP-XX Limited (CAP-XX). This has led to Murata's development of an EDLC technology resulting in low ESR and high capacitance in a very small package.

(in mm)

DMF/DMT Series

Series	Main Part Number	Thickness (mm)	Capacitance (mF)	Rated Voltage (V)	ESR (mΩ)	Operating Temperature (°C)
DMF (High Peak Power Type)	DMF3Z5R5H474M3DTA0	3.2	470	5.5 (Peak Voltage)	45	-30 to 70
DMT (High Reliability Type)	DMT334R2S474M3DTA0	3.5	470	4.2	130	-30 to 85

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/
Electrical Double Layer Capacitors Contents ⇒ http://www.murata.com/products/edlc/

For Ionizer Modules, please refer to p.77.

Sound Components

Piezoelectric ceramic materials that expand and shrink by applying voltage are used in piezoelectric sound components.

Summary

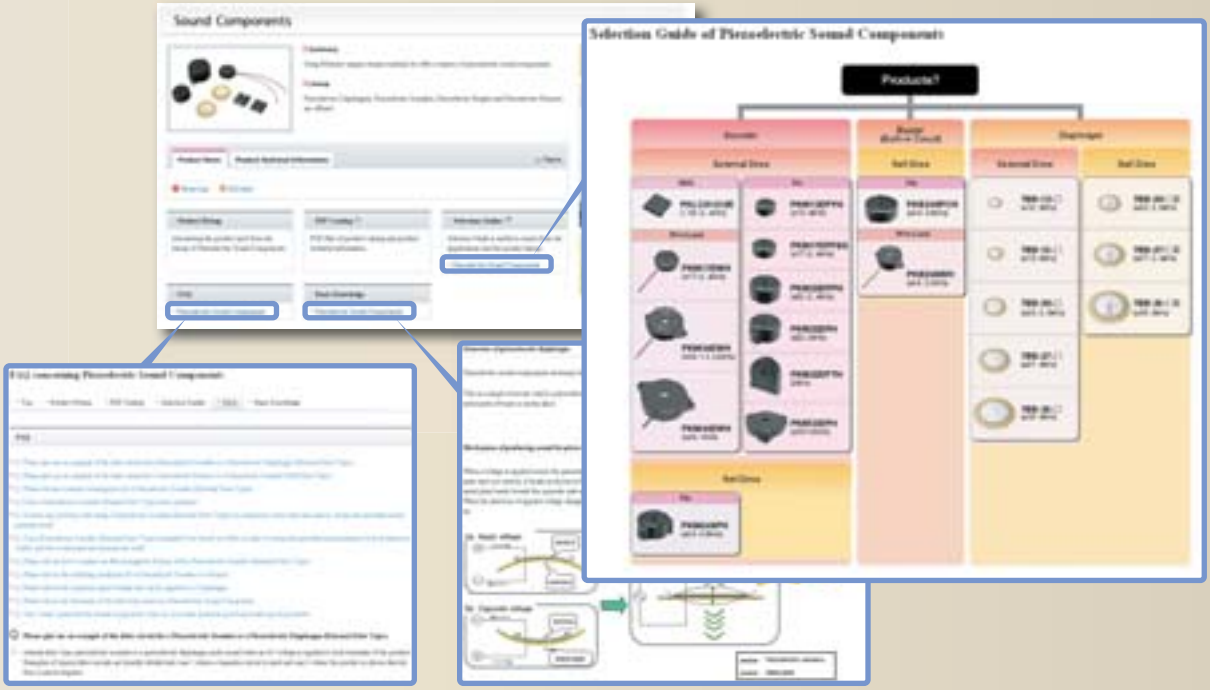
Using Murata's unique ceramic material we offer a variety of piezoelectric sound components.

Lineup

- Piezoelectric Sounders
- Piezoelectric Buzzers
- Piezoelectric Diaphragms

Web Content

Introducing Sound Component content on our website.



http://www.murata.com/products/sound/

Detailed Catalogs

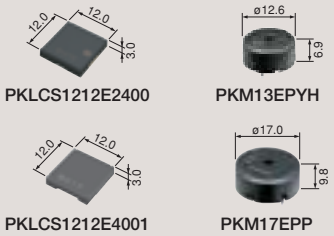
For more details, please refer to our printed catalogs and the PDF catalogs on our website.

- Piezoelectric Sound Components Cat. No. P37E
- Piezoelectric Sound Components Application Manual Cat. No. P15E

http://www.murata.com/products/sound/catalog/

Piezoelectric Sounders

Low power consumption, lightweight
Suitable for office equipment/home appliances/audio equipment



PKLCS1212E2400 PKM13EPYH PKM22EPH PKM22EPPH PKM17EWH PKM24SPH

PKLCS1212E4001 PKM17EPP

(in mm)

Drive Type	Mounting Type	Main Part Number	Sound Pressure Level (dB)	Measurement Condition of Sound Pressure Level
External Drive	Surface Mounting Type	**PKLCS1212E2400-R1**	75 min.	[3Vp-p, 2.4kHz, square wave, 10cm]
		PKLCS1212E4001-R1	75 min.	[3Vp-p, 4kHz, square wave, 10cm]
	Pin Type	**PKM13EPYH4000-A0**	70 min.	[3Vp-p, 4kHz, square wave, 10cm]
		PKM17EPP-2002-B0	70 min.	[3Vp-p, 2kHz, square wave, 10cm]
		PKM22EPH2001	75 min.	[3Vp-p, 2kHz, square wave, 10cm]
		PKM22EPPH2001-B0	70 min.	[3Vp-p, 2kHz, square wave, 10cm]
	Lead Type	**PKM17EWH4000**	75 min.	[3Vp-p, 4kHz, square wave, 10cm]
Self Drive	Pin Type	**PKM24SPH3805**	90 min.	[12Vdc, 10cm]

Piezoelectric Buzzers

This is a unified piezoelectric sounder connected to a built-in self drive circuit, and it easily generates sound with only a DC power supply.
Suitable for gas detector alarms/burglar alarms/home-electronic appliances

PKB24SPCH

(in mm)

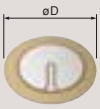
Drive Type	Mounting Type	Main Part Number	Sound Pressure Level (dB)	Measurement Condition of Sound Pressure Level
Self Drive	Pin Type	**PKB24SPCH3601-B0**	90 min.	[12Vdc, 10cm]

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

Piezoelectric Diaphragms

Low power consumption, lightweight
Suitable for Clocks/Calculators/Digital cameras/Various alarms (Burglar alarms, etc.)

7BB-□□-□



7BB-□□-□C

Drive Type	Main Part Number	Plate Size (øD)
External Drive	**7BB-12-9**	ø12.0mm
	7BB-15-6	ø15.0mm
	7BB-20-6	ø20.0mm
	7BB-27-4	ø27.0mm
Self Drive	**7BB-20-6C**	ø20.0mm
	7BB-27-4C	ø27.0mm

For more details on each series, please refer to our website.
Product Search ⇒ http://search.murata.co.jp/

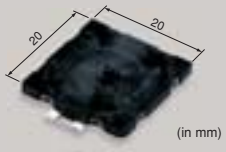
Others

Micromechatronics

Utilizing the vibration and deformation of piezoelectric materials.

Microblowers

Tiny air pumps without a motor



(in mm)

Features

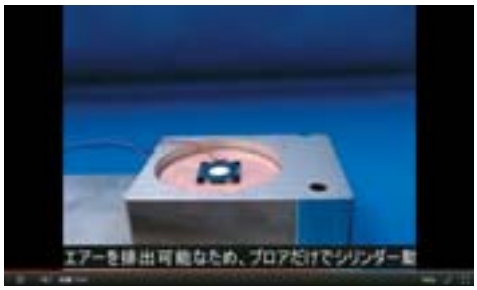
Microblowers are designed to function as an air pump, using the ultrasonic vibrations of piezoelectric ceramics, which can generate high pressure air from a thin and extremely compact unit.

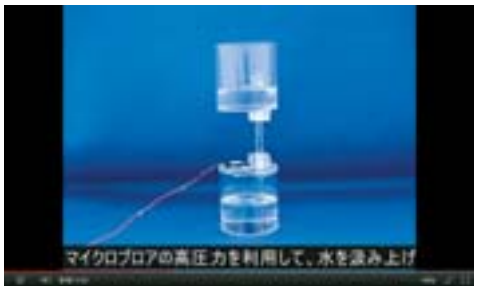
Applications

Aroma/diffuser, Gas & Alcohol Sensor, Air ionizer, Amusement, etc.

Part Number	Size	Air Flow	Static Pressure	Voltage of Operation
MZB1001T02	20(W)×20(L)×1.85(H)mm without the nozzle	≧0.7L/min@15Vp-p	≧1.42kPa@15Vp-p	10 to 20Vp-p

Microblower demonstration videos
http://www.murata.com/products/micromechatronics/demonstration/microblower/





Piezoelectric Actuators

Quick response and high-accuracy position control.

PALPRM Series

Features

Piezoelectric actuators, utilizing the deformation properties of the Piezoelectric ceramics itself, are used for position control within the autofocus system of cellular camera modules and within the image stabilization system of digital still cameras. The features of Murata's piezoelectric actuators contribute to miniaturization of various modules, due to its very usable displacement in spite of its small size and a low profile.

*Please contact us for custom specifications.

For more details on Micromechatronics products, please refer to our website.
http://www.murata.com/products/micromechatronics/

Others

Wireless Communication Modules

Available for a wide range of applications such as automotive, mobile computing devices, and household appliances.

Wi-Fi Modules / Bluetooth® · Wi-Fi Combo Modules

Features

Compact, highly efficient and flexible custom-made correspondence

Applications

Mobile phones, automotive, tablet PC, POS, HT, electric equipment, smart grid, etc.

Bluetooth® Modules / Bluetooth® Low Energy Modules

Features

Compact, highly efficient and flexible custom-made correspondence

Applications

Mobile phones, automotive, PMP, POS, HT, healthcare, wireless remote control, etc.

Please contact us about Wireless Communication Modules.

Others

Ceramic Applied Products

Contribution to high integration and miniaturization requirements of the automotive industry and RF modules.

Low Temperature Co-fired Ceramics (LTCC) Multi-layer Module Boards

LTCC, Low Temperature Co-fired Ceramics is a multi-layer, glass ceramic substrate that is co-fired with low resistance metal conductors. What makes Murata's LTCC special is our unique "Zero Shrinking Sintering Process," which restricts the ceramic shrinkage to only thickness.
Murata's LTCC multilayer substrates LFC® are useful in a wide range of electronic equipment such as substrates for highly-reliable electronic control units equipping vehicles and functional substrates for miniaturized high-frequency modules in cellular phones.

LFC® Series

Murata's LFC® Series LTCC substrate meets high integration and miniaturization requirements necessary for the automotive industry.

AWG Series

Utilized in low profile, small outline RF modules, the AWG Series features ultra-thin ceramic tapes, multiple material tape lamination and enhanced board strength.

For more details on Ceramic Applied Products, please refer to our website and the PDF catalogs on our website.
http://www.murata.com/products/ceramic/

Cat.No. N20E

Others

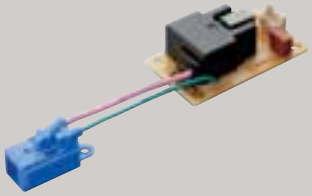
Ionizer Modules Ionissimo®

High-concentration ion, compact design, ozone control

Ionissimo® is an ionizer module with unprecedented compactness and high efficiency, capable of generating the largest amount of ions in the industry* owing to Murata's own high-voltage technology and structural design. The ion generator is connected to the driving power supply for modularization and ease of incorporating into equipment.

*Surveyed by Murata (As of March 2011)

MHM Series



Features

- Ion is generated at low voltage (-2.0kV) with high efficiency, resulting in high ion concentration.
- Compact equipment may be designed due to small ionizer element and driving power supply.
- Ozone amounts may be optimized for specific applications by controlling the generation of ozone without changing the number of ions.

Applications

Air Conditioner, Air Purifier, Static Eliminator, Vacuum Cleaner, etc.

For more details on the Ionizer Modules, please refer to our website.
http://www.murata.com/products/ionissimo/

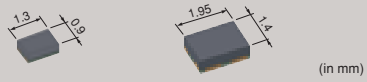
View a demonstration video of Ionizer Modules Ionissimo® on our website

Others

Variable Capacitor

Capacitance value can be adjusted by the tuning voltage

LXRW_V Series



(in mm)

LXRW19V Series　　LXRWJFV Series

Thin Film Variable Capacitors can carry out the variable of the capacitor by adjusting the tuning voltage.
It is designed for use as Frequency Matching for HF band (13.56MHz).

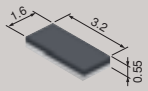
Others

RFID Devices

Built-in IC module for high functional and robust small RFID tags

UHF-band MAGICSTRAP®

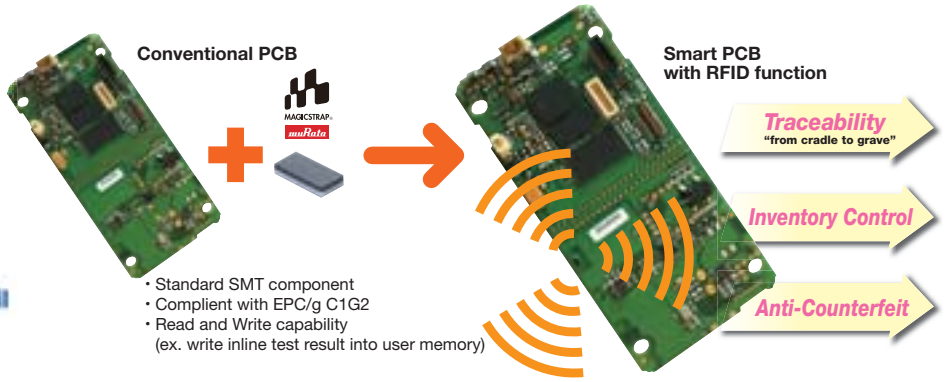
LXMS31 Series



(in mm)

MAGICSTRAP® can be easily assembled by means of reflow soldering and adhesive (electrically conductive or non-conductive). Even if non-conductive adhesive is used, communication will take place when MAGICSTRAP® is bonded onto the antenna, and the RFID tag will function correctly.
MAGICSTRAP® complies with international standard EPC/gC1G2. It is an ultra-miniature (3.2x1.6x0.55mm) robust package with impedance transformation function. MAGICSTRAP® can be bonded onto the antenna over a wide range (±500μm). In addition, MAGICSTRAP® supports wide UHF band (860-960MHz) for worldwide use in a single design.

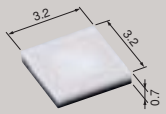
Green IT AWARD 2013
Green IT Promotion Council
Green IT Promotion Council Chairman's Awards



- Standard SMT component
- Compliant with EPC/g C1G2
- Read and Write capability
  (ex. write inline test result into user memory)

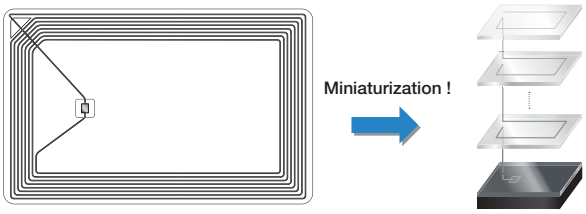
HF-band MAGICSTRAP®

LXMS33 Series



(in mm)

HF-band MAGICSTRAP® is one of the world's smallest HF-band RFID tags (3.2x3.2x0.7mm). Murata has applied its proprietary multi-layer circuit board technology and high-frequency module technology, with which the successful miniaturization of an RFID tag to one-tenth the size of an RFID tag composed of plane surface, was achieved. Furthermore, the new RFID product uses a ceramic module structure that makes it highly resistant to the environment and enables it to achieve stable operation under various environmental conditions.



Horizontal　　Multi-layer

Applications

Small appliance/object tracking, management, certification, authentication, etc.

Electrical Characteristics

Read range: 15mm (reader/writer output: 200mW, antenna size: 35x54mm)

For more details on RFID Devices, please refer to our website.
http://www.murata.com/products/rfid/

Others

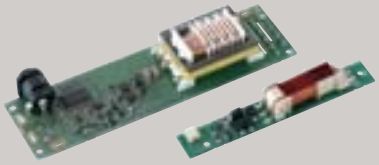
Wireless Power Transmission Modules

Realization of wireless charging systems

Murata has begun mass production of the capacitive coupling type* of wireless power transmission modules capable of charging at 10W.
This module makes wireless charging systems a reality (Wireless charging systems are capable of charging equipment placed on a charging pad without the need for cable connection).

*Capacitive coupling system
The capacitive coupling system is a method that involves transmitting energy using the electrical fields generated between these electrodes.
Since the electric field is generated between the electrodes, it is also called an electric field coupling system.

LXWS Series



Features

- Wide charging area
- Ease of mounting
- No heat generation in the wireless power transmission area

For more details on Wireless Power Transmission Modules, please refer to our website.
http://www.murata.com/products/wireless_power/

View demonstration videos of Wireless Power Transmission Modules on our website

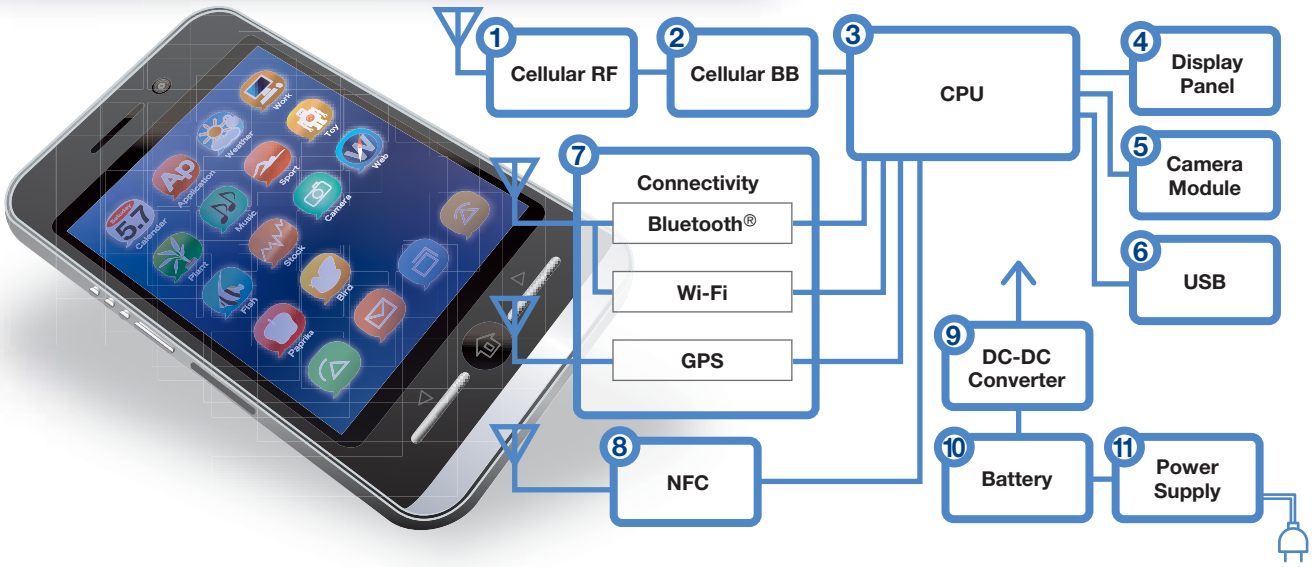
Memo

Application Guides

muRata

Application Guides

Mobile Phones



1 Cellular RF

- RF Diode Switches SWITCHPLEXER® LMSP Series
- Chip Multilayer Diplexers LFD Series p51
- SAW Duplexers SAY Series p44
- SAW Filters SAF Series p44
- Chip Multilayer LC Filters p45
- Chip Multilayer Hybrid Baluns LDB/LDM Series p50
- Chip Multilayer Hybrid Dividers LDD Series p51
- RF Transformer SMST Series
- Coaxial Connectors p52
- GaAs Switch IC
- Isolators CEG23 Series p49
- Micro DC-DC Converters LXDC Series p69
- Chip Inductors (Chip Coils) LQW/LQP Series p30
- Trimmer Capacitors TZY2 Series p22
- ESD Protection Devices LXES Series p27
- Thermistors NCP/PRF Series p61

2 Cellular BB

- Micro DC-DC Converters LXDC Series p69
- 3 Terminal Capacitors NFM Series p25
- Chip Common Mode Choke Coils DLW/DLP Series p26
- Thermistors NCP/PRF Series p61

3 CPU

- Crystal Units XRCGB Series p37
- Chip Ferrite Beads BLM Series p24
- 3 Terminal Capacitors NFM Series p25
- Thermistors NCP/PRF Series p61

4 Display Panel

- Micro DC-DC Converters LXDC Series p69
- Ceramic Resonators CERALOCK® CSTCE Series p37
- EMI Suppression Filters EMIFIL® NFA Series p25
- Chip Common Mode Choke Coils DLW/DLP Series p26
- Trimmer Potentiometers PVZ2 Series p34
- ESD Protection Devices LXES Series p27
- Thermistors NCP/PRF Series p61

5 Camera Module

- Micro DC-DC Converters LXDC Series p69
- Electrical Double Layer Capacitors DMF Series p71
- Monolithic Ceramic Capacitors for Medium Voltage GR7 Series p9
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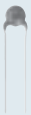
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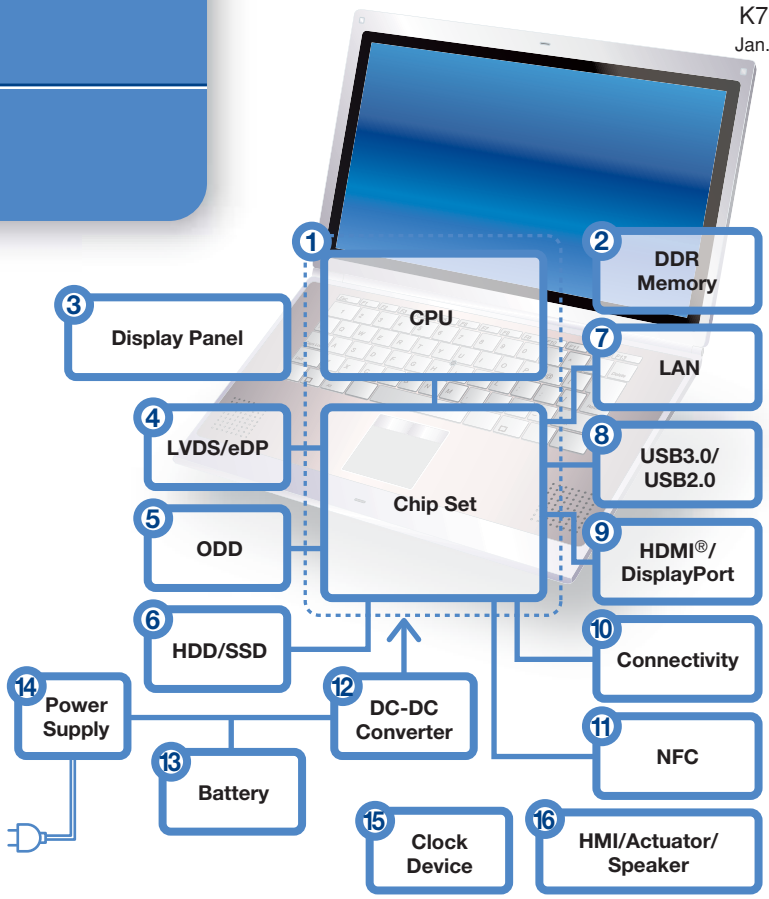

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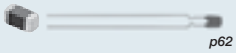
NXR/PRF/PRG Series  p62

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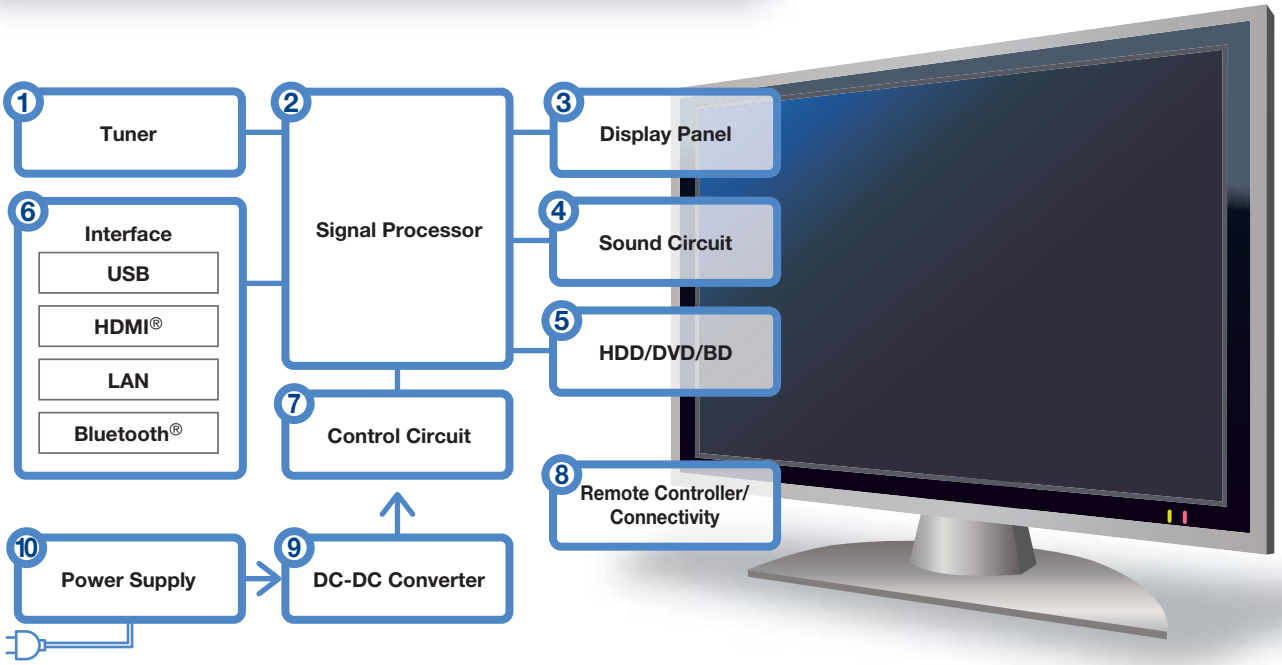

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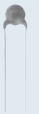
DEA/DES Series  p17

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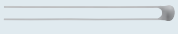
- Radial Lead Type Monolithic Ceramic Capacitors RCE Series  p19
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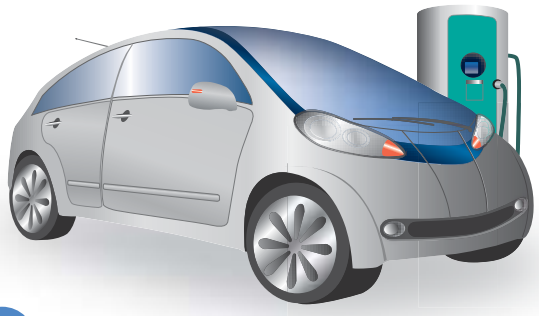

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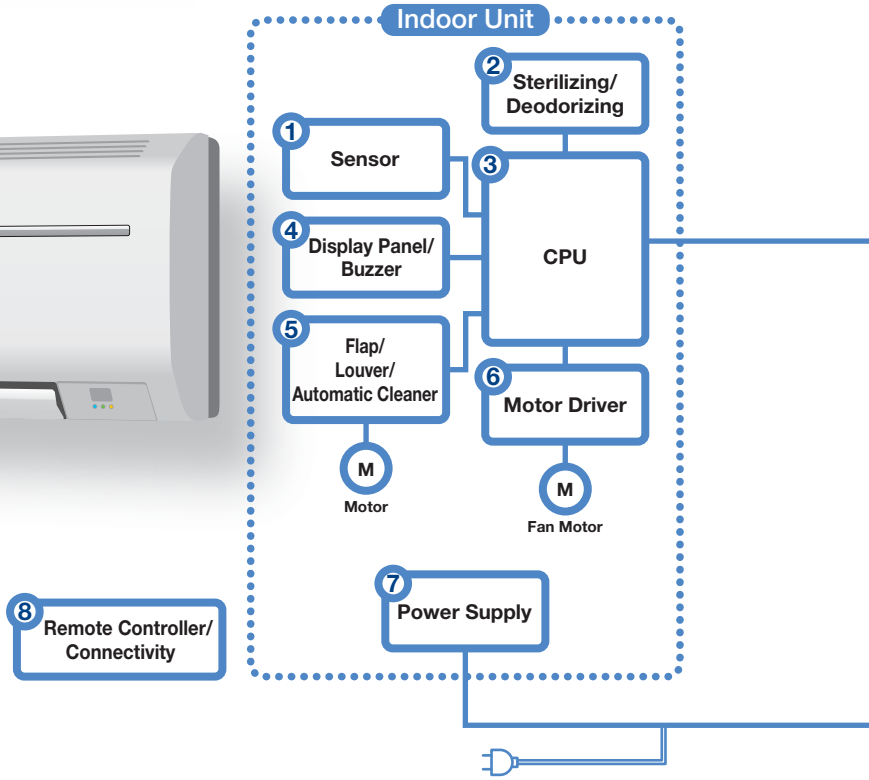

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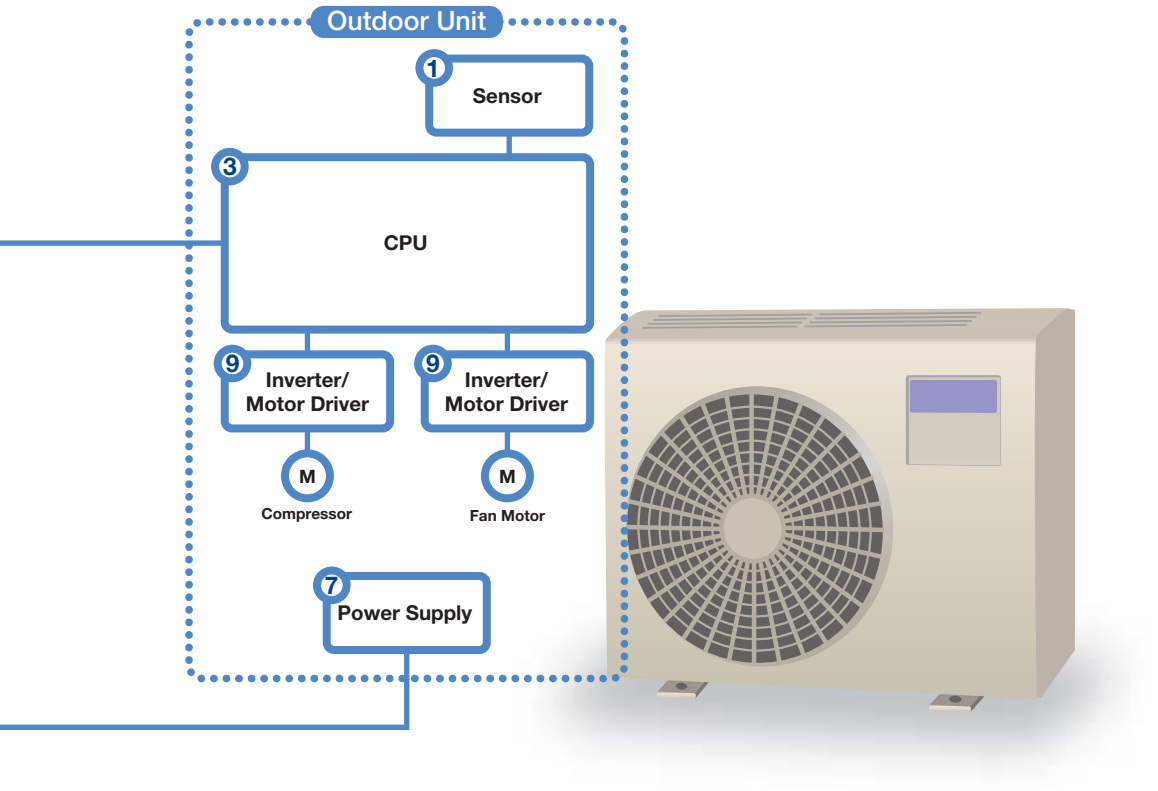

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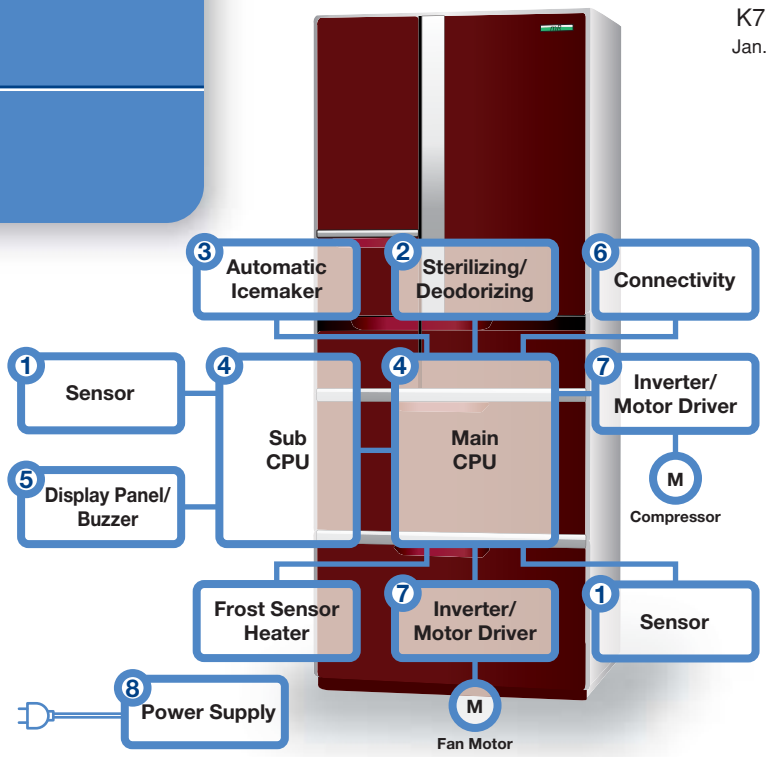

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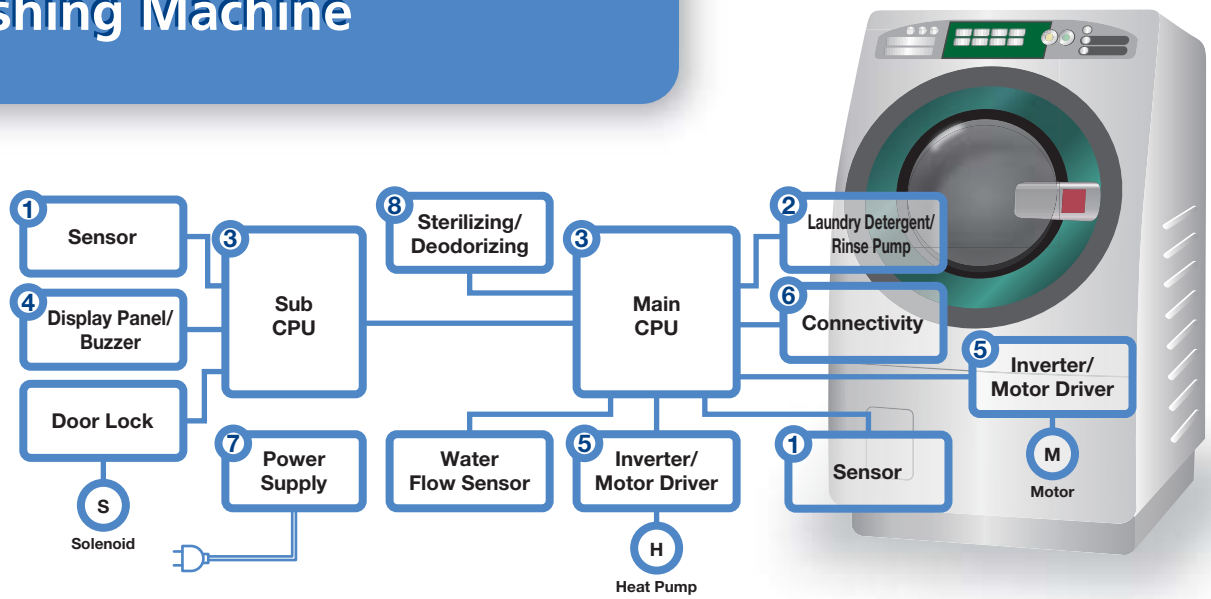

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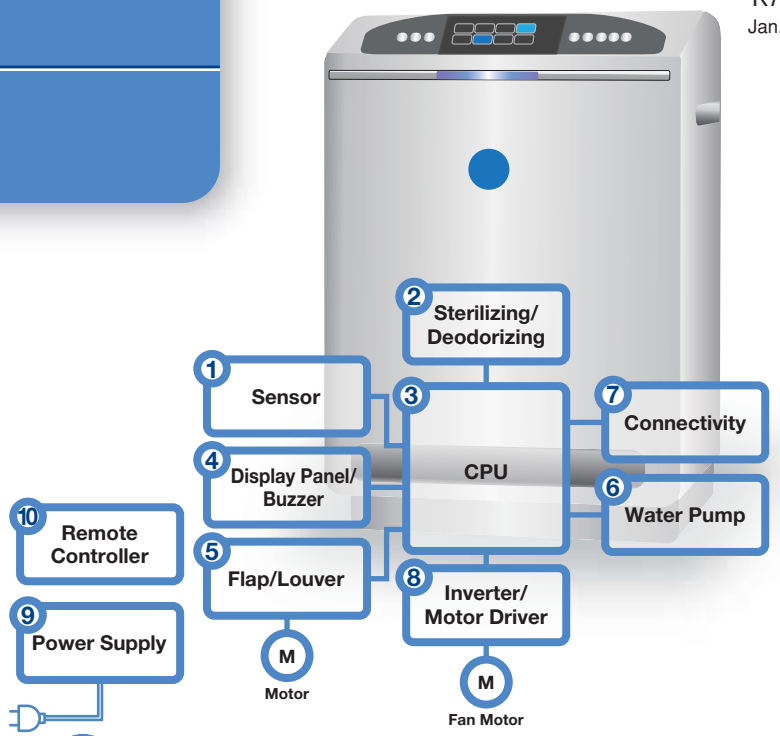

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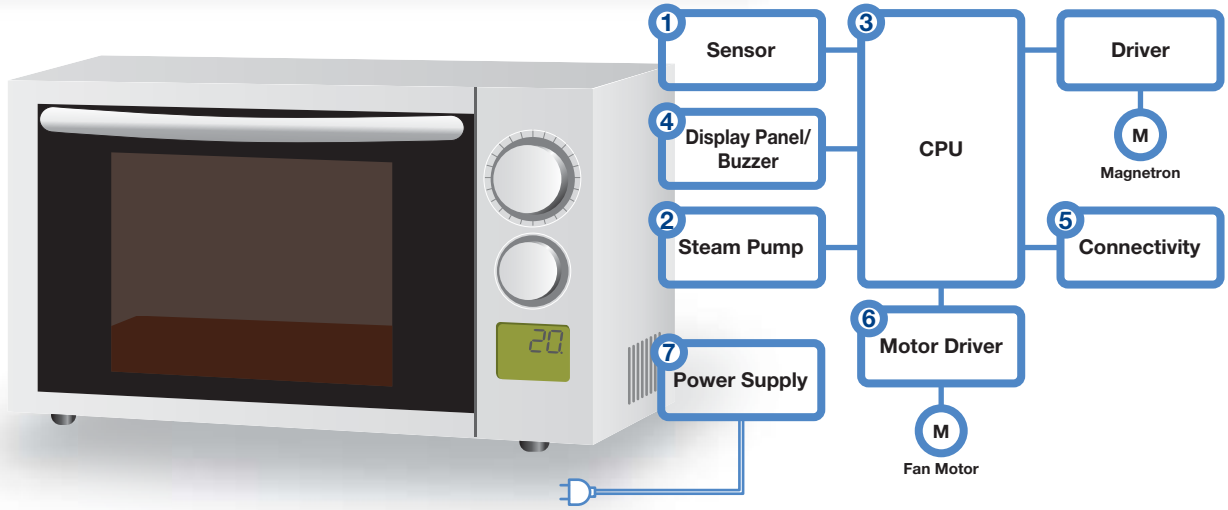

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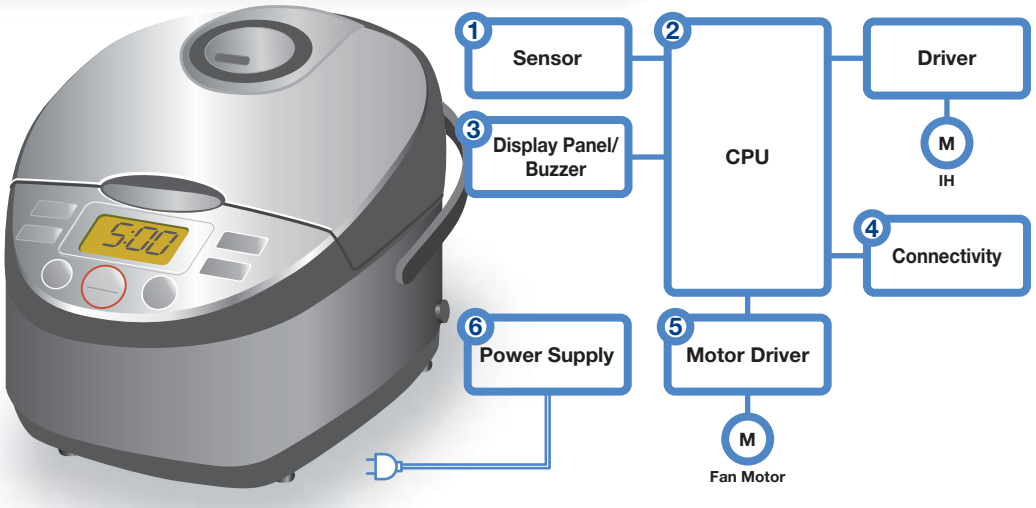

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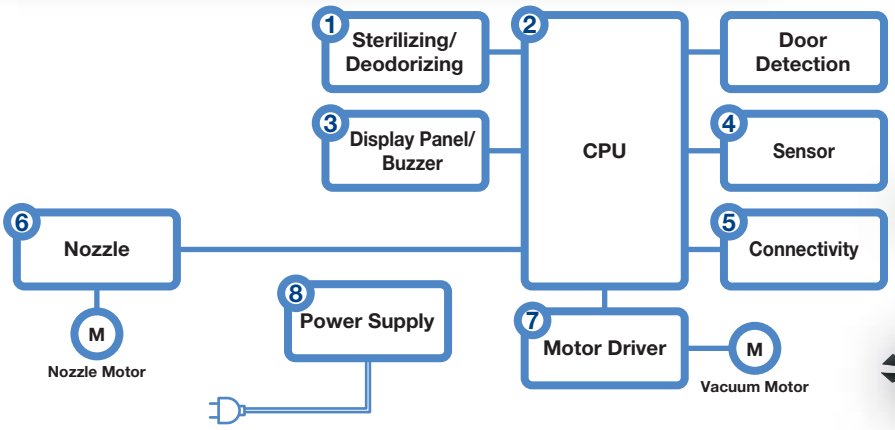

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http://www.murata.com/products/apps/whitegoods/clean.html

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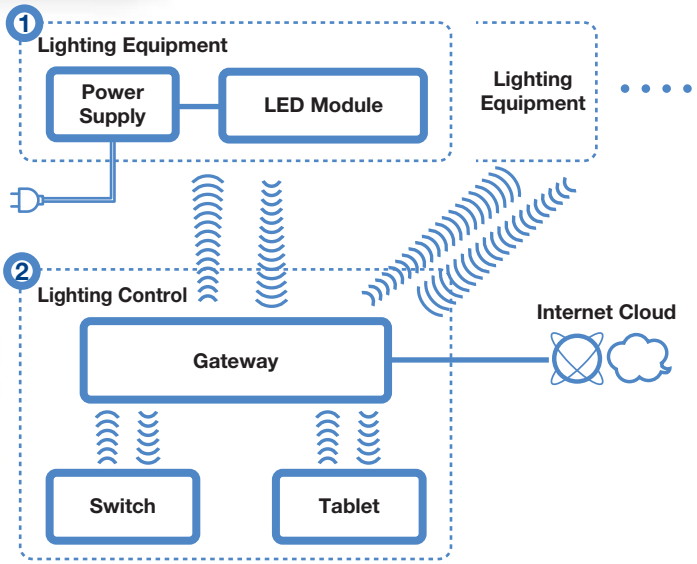
Lighting Control System



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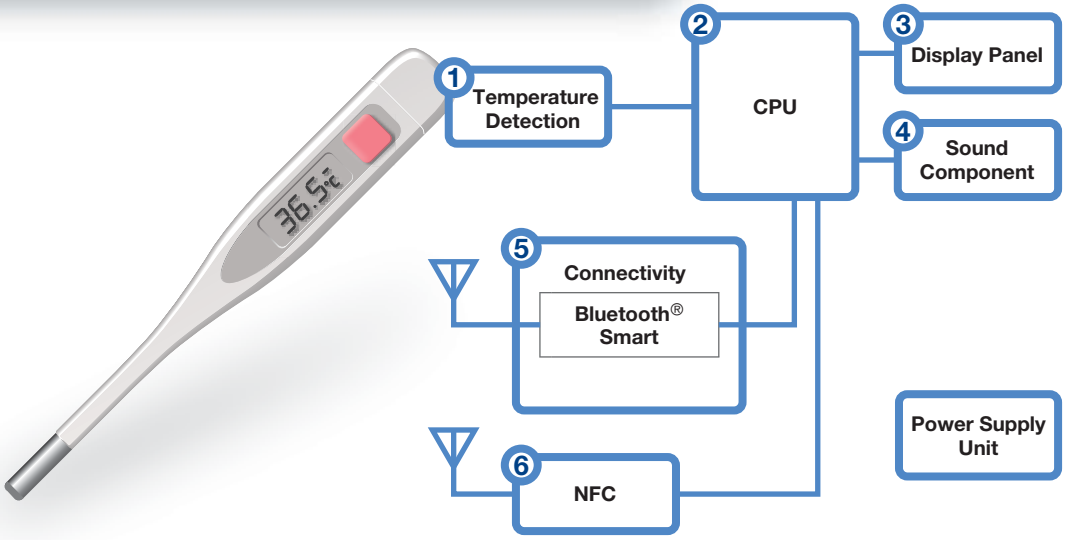

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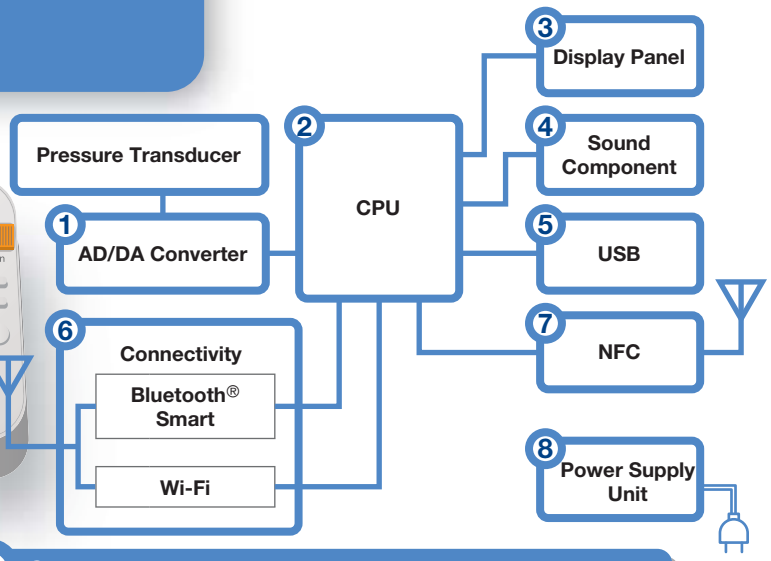

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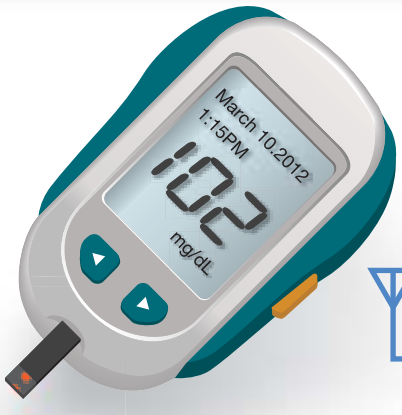

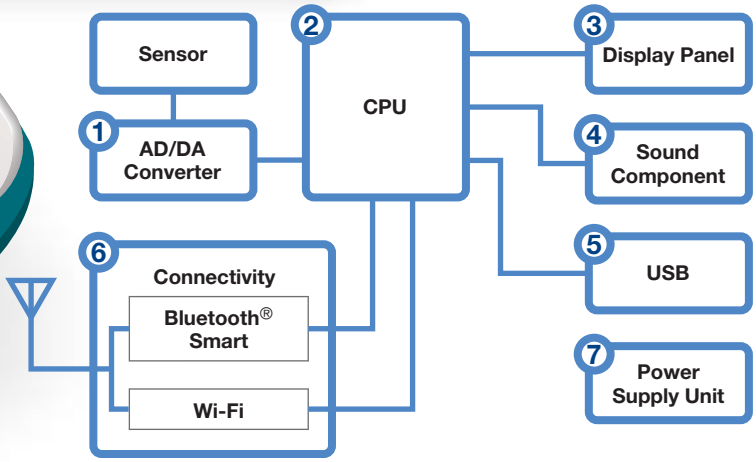

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Ceramic Resonators CERALOCK®
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3 Display Panel

3 Terminal Capacitors
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Chip Ferrite Beads
BLM Series
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Trimmer Potentiometers
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Ceramic Resonators CERALOCK®
CSTCR-G-L/CSTCE-G-L/CSTCE-V-L/CSTCW-X Series
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7 Power Supply Unit

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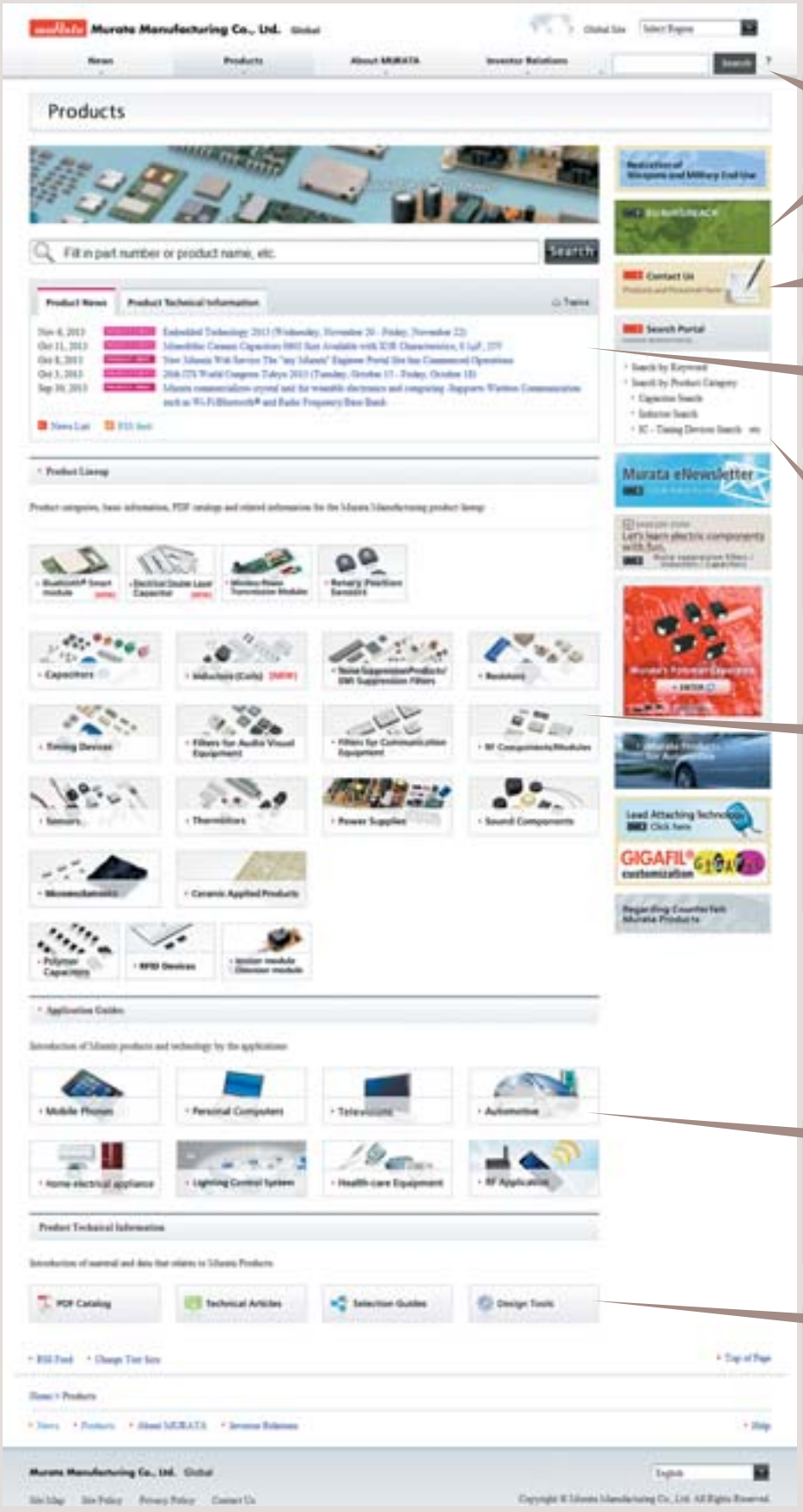
General Purpose

Monolithic Ceramic Capacitors	GRM Series	High Frequency Filter Circuit	p3
Monolithic Ceramic Capacitors	GRM Series	Coupling/Decoupling/For Step-up	p3
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance	p30
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion	p30
Chip Ferrite Beads	BLM Series	Noise Suppression	p24
3 Terminal Capacitors	NFM Series	Noise Suppression	p25

Website http://www.murata.com/products/

For detailed information regarding products, please visit the "Products" page on the Murata website. The "Products" page is full of valuable information.



Using the keyword search function, you can search every page of the Murata website.

Murata's RoHS compliance is clarified.

Please make any inquiries using the "Contact Us" form.

It contains information updates regarding both new product news and new product content.

You can search for product information using various search functions. In particular, the capacitor search function is covered extensively.

The product information listed on the website is organized into different product categories. The wealth of information ranges in complexity from basic product knowledge through technical information.

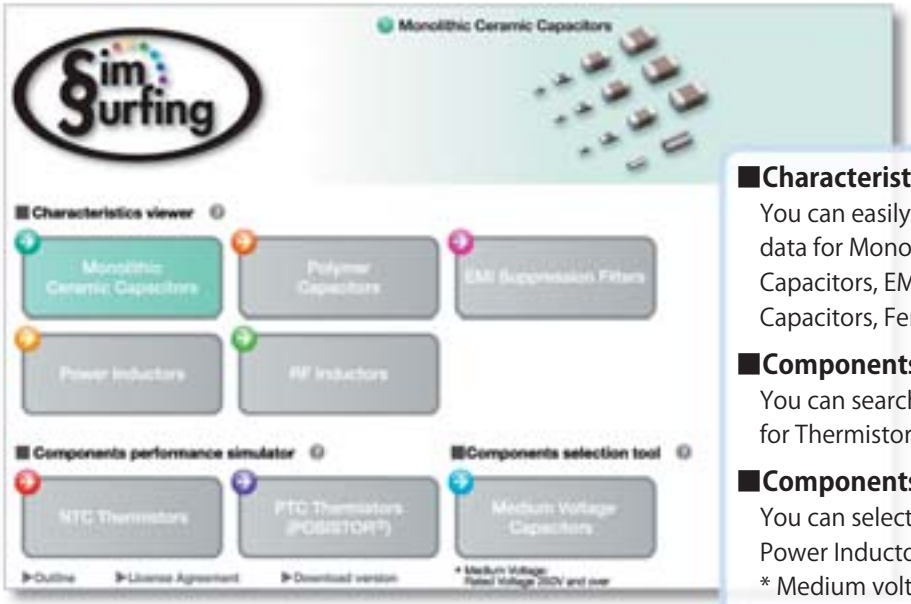
You can find Murata's products and technologies by choosing the application (mobile phones, PCs, televisions, automotive, white goods, RF).

The website offers a wide variety of information, covering different technologies, such as PDF catalogs, design tools, product information etc.

Design Support Software SimSurfing

http://www.murata.com/simsurfing/

This is the latest tool to get the electrical characteristics for Capacitors, Inductors, and EMI Suppression Filters, and to simulate Thermistors' behavior !



■Characteristics viewer

You can easily search and download the following data for Monolithic Ceramic Capacitors, Polymer Capacitors, EMI Suppression Filters (Three-terminal Capacitors, Ferrite Beads) and Power/RF Inductors.

■Components performance simulator

You can search by the simulation on simple circuits for Thermistors.

■Components selection tool

You can select Medium voltage Capacitors and Power Inductors according to conditions of use.
* Medium voltage: Rated Voltage 250V and over

■ Usage example of "Chip Monolithic Ceramic Capacitors"

1 Select the products

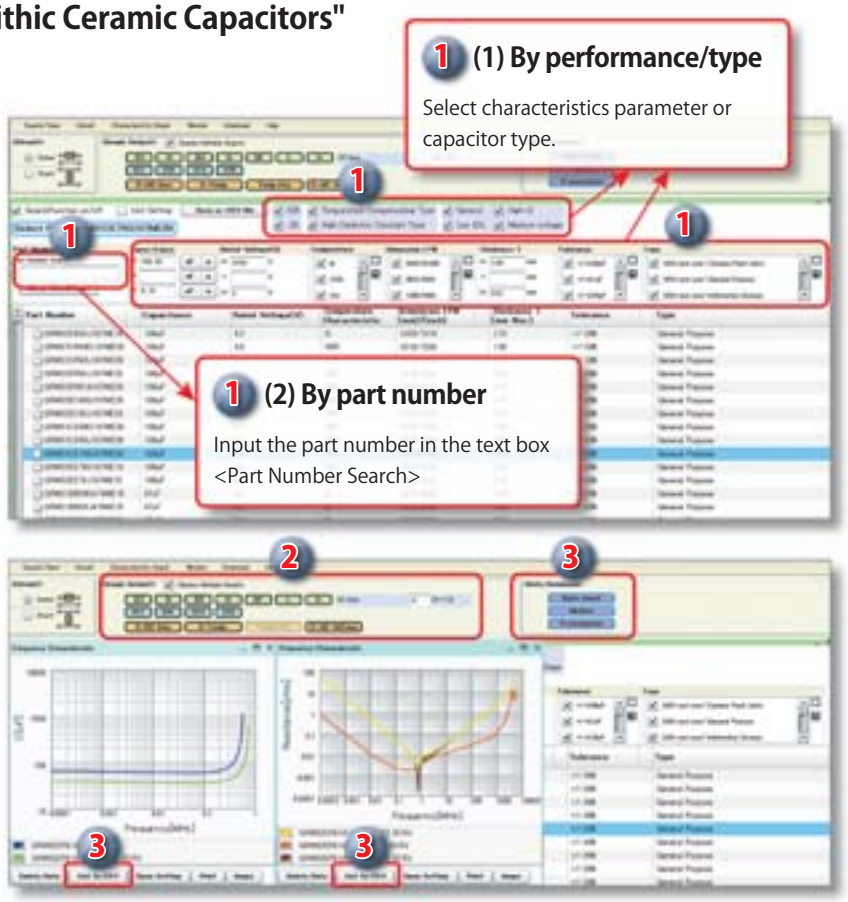
(1) By performance/type
(2) By part number

2 Show graph

Click each button in the <Graph Output> area.

3 Data download

Click each button in the <Data Download> area.



These images were captured in November of 2013. Be assured that this software will be updated frequently.

http://www.murata.com/simsurfing/

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