













## contents

	<b>YAGEO</b>	<b>Phycomp</b>	
	Multilayer Ceramic Chip Capacitors		04-05
	SMD Ceramic EMI Filter Capacitors - X2Y®		05
	Chip Resistors		06
	Arrays		07
	Networks		08
	Application Specific Resistors		08
	Chip Resistors RF Attenuators		08
	High Frequency Antennas		09-13
	High Frequency Filters		13-14
	High Frequency Balancers		14
	MLV		15
	<b>YAGEO</b>		
	Aluminum Electrolytic Capacitors		16-20
	Leaded Resistors		21-25
	SMD Chip Beads		26
	SMD Multilayer Chip Inductors		26-27
	SMD Wire Wound Chip Inductors		27-29
	SMD Power Inductors		29-30
	DIP Power Inductors		30-31
	Global Directory		32





MLCC

### NP0 Ceramic Chip Series

GENERAL PURPOSE  
MEDIUM VOLTAGE  
HIGH VOLTAGE  
Surface Mount Chip



Size \_ 0201 to 1812  
Capacitance Range \_ 0.22pF to 33nF  
Capacitance Tolerance \_  
C < 10pF: 0.1pF, 0.25pF, 0.5pF  
C ≥ 10pF: ±1%, ±2%, ±5%

Rated Working Voltage \_ 16Vdc to 1,000Vdc  
Operating Temp. Range \_ -55°C to +125°C  
Packaging \_ Reel, Bulk

### X5R Ceramic Chip Series

GENERAL PURPOSE  
MEDIUM VOLTAGE  
HIGH CAPACITANCE  
Surface Mount Chip



Size \_ 0201 to 1812  
Capacitance Range \_ 100pF to 100µF  
Capacitance Tolerance \_ ±10%, ±20%

Rated Working Voltage \_ 6.3Vdc to 50Vdc  
Operating Temp. Range \_ -55°C to +85°C  
Packaging \_ Reel, Bulk

### X7R Ceramic Chip Series

GENERAL PURPOSE  
MEDIUM VOLTAGE  
HIGH VOLTAGE  
HIGH CAPACITANCE  
Surface Mount Chip



Size \_ 0201 to 1812  
Capacitance Range \_ 100pF to 22µF  
Capacitance Tolerance \_ ±10%, ±20%

Rated Working Voltage \_  
6.3Vdc to 4,000Vdc  
Operating Temp. Range \_ -55°C to +125°C  
Packaging \_ Reel, Bulk

### Y5V Ceramic Chip Series

GENERAL PURPOSE  
HIGH CAPACITANCE  
Surface Mount Chip



Size \_ 0201 to 1210  
Capacitance Range \_ 10nF to 47µF  
Capacitance Tolerance \_ ±20%, -20% to +80%

Rated Working Voltage \_ 6.3Vdc, 50Vdc  
Operating Temp. Range \_ -25°C to +85°C  
Packaging \_ Reel, Bulk

### Array Series

NP0, X7R, Y5V CERAMIC CHIPS  
MULTI-VALUE CAPACITORS ARRAY  
Surface Mount Chip



Size \_ 0508, 0612  
Capacitance Range \_ 10pF to 100nF  
Capacitance Tolerance \_  
NP0: ±5%, ±10%  
X7R: ±10%, ±20%  
Y5V: -20% to +80%

Rated Working Voltage \_ 16Vdc to 50Vdc  
Packaging \_ Reel

### Safety Certification Series

NP0, X7R CERAMIC CHIPS  
Surface Mount Chip



Size \_ 1808 to 1812  
Capacitance Range \_ 2pF to 1.5nF  
Capacitance Tolerance \_  
NP0: ±5%  
X7R: ±10%

Rated Working Voltage \_ X1 / Y2, X2 / Y3  
Operating Temp. Range \_ -55°C to +125°C  
Packaging \_ Reel, Bulk

### High Frequency Series

NP0 CERAMIC CHIPS  
Surface Mount Chip



Size \_ 0402 to 0805  
Capacitance Range \_ 0.22pF to 8.2pF  
Capacitance Tolerance \_  
C < 10pF: ±0.1pF, ±0.25pF, ±0.5pF

Rated Working Voltage \_ 50Vdc  
Operating Temp. Range \_ -55°C to +125°C  
Packaging \_ Reel

### Microwave Series

NP0 CERAMIC CHIPS  
Surface Mount Chip

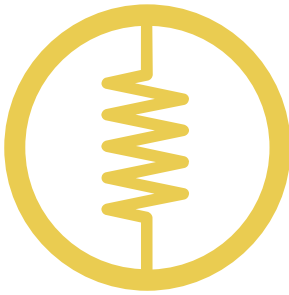


Size \_ 0603 to 1206  
Capacitance Range \_ 0.47pF to 47pF  
Capacitance Tolerance \_  
C < 10pF: ±0.1pF, ±0.25pF, ±0.5pF  
C ≥ 10pF: ±1%, ±2%, ±5%

Rated Working Voltage \_ 50Vdc  
Operating Temp. Range \_ -55°C to +125°C  
Packaging \_ Reel



MLCC	<h3>Low Inductance Series</h3> <p><b>X7R CERAMIC CHIPS</b> Surface Mount Chip</p>	<p>Size _ 0306 to 0612            Capacitance Range _ 10nF to 220nF            Capacitance Tolerance _ <math>\pm 10\%</math>, <math>\pm 20\%</math></p>	<p>Rated Working Voltage _ 10Vdc to 50Vdc            Operating Temp. Range _ <math>-55^{\circ}\text{C}</math> to <math>+125^{\circ}\text{C}</math>            Packaging _ Reel, Bulk</p>
X2Y	<h3>X5R X2Y Series</h3> <p><b>HIGH CAPACITANCE</b> Surface Mount Chip</p>	<p>Size _ 0603            Capacitance Range _ 220nF to 470nF            Capacitance Tolerance _ <math>\pm 20\%</math>            Insulation Resistance _  <math>R_{ins} \times C &gt; 500\text{sec}</math> or <math>R_{ins} &gt; 10\text{G}\Omega</math></p>	<p>Rated Working Voltage _ 10Vdc            Operating Temp. Range _ <math>-55^{\circ}\text{C}</math> to <math>+85^{\circ}\text{C}</math>            Packaging _ Reel</p>
	<h3>X7R X2Y Series</h3> <p><b>GENERAL PURPOSE</b> Surface Mount Chip</p>	<p>Size _ 0603 to 1410            Capacitance Range _ 1nF to 1<math>\mu\text{F}</math>            Capacitance Tolerance _ <math>\pm 20\%</math>            Insulation Resistance _  <math>R_{ins} \times C &gt; 500\text{sec}</math> or <math>R_{ins} &gt; 10\text{G}\Omega</math></p>	<p>Rated Working Voltage _ 10Vdc to 100Vdc            Operating Temp. Range _ <math>-55^{\circ}\text{C}</math> to <math>+125^{\circ}\text{C}</math>            Packaging _ Reel</p>
	<h3>NP0 X2Y Series</h3> <p><b>GENERAL PURPOSE</b> Surface Mount Chip</p>	<p>Size _ 0805            Capacitance Range _ 22pF and 47pF            Capacitance Tolerance _ <math>\pm 20\%</math>            Insulation Resistance _  <math>R_{ins} \times C &gt; 500\text{sec}</math> or <math>R_{ins} &gt; 10\text{G}\Omega</math></p>	<p>Rated Working Voltage _ 50Vdc            Operating Temp. Range _ <math>-55^{\circ}\text{C}</math> to <math>+125^{\circ}\text{C}</math>            Packaging _ Reel</p>



Chip Resistors

### General Purpose

RC SERIES  
THICK FILM CHIP



Case Sizes \_ 01005 to 2512  
Resistance Range (E24/E96) \_ 1Ω to 100MΩ / Jumper  
Rated Power @ 70°C \_ 1/32W to 2W  
Temp. Coefficient \_  
±100, ±200, ±250, ±300, ± 350ppm/°C

Resistance Tolerance \_  
±0.5%, ±1%, ±5%, ±10%, ±20%  
Max. Working Voltage \_ 15Vdc to 200Vdc  
Max. Overload Voltage \_ 30Vdc to 500Vdc  
Packaging \_ Reel, Bulk

### Precision Grade Series

RE SERIES  
THICK FILM CHIP



Case Sizes \_ 0402 to 1206  
Resistance Range (E24/E96) \_ 10Ω to 1MΩ  
Rated Power @ 70°C \_ 1/16W to 1/4W  
Temp. Coefficient \_ ±50ppm/°C

Resistance Tolerance \_ ±0.5%, ±1%  
Packaging \_ Reel

### Low Ohmic

RL / PT SERIES  
THICK FILM CHIP  
Current Sensing Applications



Case Sizes \_ 0402 to 2512  
Resistance Range (E24) \_ 0.01Ω to 1Ω  
Rated Power @ 70°C \_ 1/16W to 2W  
Temp. Coefficient \_ 75ppm/°C to 1,500ppm/°C

Resistance Tolerance \_ ±1%, ±2%, ±5%  
Packaging \_ Reel

### Low Ohmic Low TCR (Wide Termination Type)

PT SERIES  
THICK FILM CHIP  
Current Sensing Applications



Case Sizes \_ 0815  
Resistance Range (E24) \_ 0.025Ω to 0.05Ω  
Rated Power @ 70°C \_ 1/2W & 1W  
Temp. Coefficient \_ ±100ppm/°C

Resistance Tolerance \_ ±1%, ±2%, ±5%  
Packaging \_ Reel

### Current Sensor Low TCR

PR / PF / PH / PE SERIES  
METAL TECHNOLOGY  
Current Sensing Applications



Case Sizes \_ 0402 to 2728  
Resistance Range (E24) \_ 0.001Ω to 0.91Ω  
Rated Power @ 70°C \_ 1/16W to 2W  
Temp. Coefficient \_ ±50, ±75, ±100, ±200ppm/°C

Resistance Tolerance \_ ±1%, ±2%, ±5%  
Packaging \_ Reel

### Current Sensor Low TCR (Wide Termination Type)

PF SERIES  
METAL TECHNOLOGY  
Current Sensing Applications



Case Sizes \_ 0508, 0612, 0815  
Resistance Range (E24) \_ 0.002Ω to 0.05Ω  
Rated Power @ 70°C \_ 1/2W to 1W  
Temp. Coefficient \_ ±75, ±100, ±150ppm/°C

Resistance Tolerance \_ ±1%, ±2%, ±5%  
Packaging \_ Reel

### High Precision High Stability Series

RT SERIES  
THIN FILM CHIP



Case Sizes \_ 0402 to 2512  
Resistance Range (E24/E96) \_ 5.1Ω to 1.5MΩ  
Rated Power @ 70°C \_ 1/16W to 3/4W  
Temp. Coefficient \_ ±10, ±15, ±25, ±50ppm/°C

Resistance Tolerance \_  
±0.05%, ±0.1%, ±0.25%, ±0.5%, ±1%  
Max. Working Voltage \_ 50Vdc to 200Vdc  
Max. Overload Voltage \_ 100Vdc to 400Vdc  
Packaging \_ Reel

### General Purpose Thin Film Series

RJ SERIES  
THIN FILM CHIP



Case Sizes \_ 0402 to 2512  
Resistance Range (E24/E96) \_ 5.1Ω to 1.5MΩ  
Rated Power @ 70°C \_ 1/16W to 3/4W  
Temp. Coefficient \_ ±50ppm/°C

Resistance Tolerance \_ ±1%  
Max. Working Voltage \_ 25Vdc to 150Vdc  
Max. Overload Voltage \_ 100Vdc to 400Vdc  
Packaging \_ Reel



Arrays

**0201 \* 2 Series**

YC102 SERIES  
THICK FILM ARRAY  
Convex 0202



Circuit Types \_ Isolated  
Resistance Range (E24/E96) \_ 10Ω to 1MΩ / Jumper  
Number of Resistance \_ 2  
Rated Power Per Element \_ 1/32W  
Temp. Coefficient \_ ±200ppm/°C

Resistance Tolerance \_ ±1%, ±5%  
Max. Working Voltage \_ 15Vdc  
Max. Overload Voltage \_ 30Vdc  
Packaging \_ Reel

**0402 \* 2 Series**  
**0402 \* 4 Series**

YC122 SERIES  
YC124 SERIES  
THICK FILM ARRAY  
Convex 0404 / 0408



Circuit Types \_ Isolated  
Resistance Range (E24/E96) \_ 1Ω to 1MΩ / Jumper  
Number of Resistance \_ 2 and 4  
Rated Power Per Element \_ 1/16W  
Temp. Coefficient \_ ±200ppm/°C

Resistance Tolerance \_ ±1%, ±5%  
Max. Working Voltage \_ 50Vdc  
Max. Overload Voltage \_ 100Vdc  
Packaging \_ Reel

**0402 \* 2 Series**  
**0402 \* 4 Series**

TC122 SERIES  
TC124 SERIES  
THICK FILM ARRAY  
Concave 0404 / 0408



Circuit Types \_ Isolated  
Resistance Range (E24/E96) \_ 10Ω to 1MΩ / Jumper  
Number of Resistance \_ 2 and 4  
Rated Power Per Element \_ 1/16W  
Temp. Coefficient \_ ±200ppm/°C

Resistance Tolerance \_ ±1%, ±5%  
Max. Working Voltage \_ 50Vdc  
Max. Overload Voltage \_ 100Vdc  
Packaging \_ Reel

**0603 \* 2 Series**

YC162 SERIES  
THICK FILM ARRAY  
Convex 0606



Circuit Types \_ Isolated  
Resistance Range (E24/E96) \_ 10Ω to 1MΩ / Jumper  
Number of Resistance \_ 2  
Rated Power Per Element \_ 1/16W  
Temp. Coefficient \_ ±200ppm/°C

Resistance Tolerance \_ ±5%  
Max. Working Voltage \_ 50Vdc  
Max. Overload Voltage \_ 100Vdc  
Packaging \_ Reel

**0603 \* 4 Series**

YC164 SERIES  
THICK FILM ARRAY  
Convex 0612



Circuit Types \_ Isolated  
Resistance Range (E24/E96) \_ 1Ω to 1MΩ / Jumper  
Number of Resistance \_ 4  
Rated Power Per Element \_ 1/16W  
Temp. Coefficient \_ ±200ppm/°C

Resistance Tolerance \_ ±1%, ±5%  
Max. Working Voltage \_ 50Vdc  
Max. Overload Voltage \_ 100Vdc  
Packaging \_ Reel

**0603 \* 4 Series**

TC164 SERIES  
THICK FILM ARRAY  
Concave 0612



Circuit Types \_ Isolated  
Resistance Range (E24/E96) \_ 10Ω to 1MΩ / Jumper  
Number of Resistance \_ 4  
Rated Power Per Element \_ 1/16W  
Temp. Coefficient \_ ±200ppm/°C

Resistance Tolerance \_ ±1%, ±5%  
Max. Working Voltage \_ 50Vdc  
Max. Overload Voltage \_ 100Vdc  
Packaging \_ Reel

**0602 \* 8 Series**

YC248 SERIES  
THICK FILM ARRAY  
Convex 0616



Circuit Types \_ Isolated  
Resistance Range (E24/E96) \_ 10Ω to 1MΩ / Jumper  
Number of Resistors \_ 8  
Rated Power Per Element \_ 1/16W  
Temp. Coefficient \_ ±200ppm/°C

Resistance Tolerance \_ ±1%, ±5%  
Max. Working Voltage \_ 50Vdc  
Max. Overload Voltage \_ 100Vdc  
Packaging \_ Reel

**1206 \* 4 Series**

YC324 SERIES  
THICK FILM ARRAY  
Convex 2012



Circuit Types \_ Isolated  
Resistance Range (E24/E96) \_ 10Ω to 1MΩ  
Number of Resistors \_ 4  
Rated Power Per Element \_ 1/8W  
Temp. Coefficient \_ ±200ppm/°C

Resistance Tolerance \_ ±1%, ±5%  
Max. Working Voltage \_ 200Vdc  
Max. Overload Voltage \_ 500Vdc  
Packaging \_ Reel



Networks

### 10P8R Series

YC158 SERIES  
YC358 SERIES  
THICK FILM ARRAY  
Convex 0612 / 1225



Circuit Types \_ Dual Common  
Resistance Range (E24) \_ 10Ω to 330KΩ  
Number of Resistors \_ 8  
Rated Power Per Element \_ 1/16W  
Temp. Coefficient \_ ±200ppm/°C

Resistance Tolerance \_ ±5%  
Max. Working Voltage \_ 25Vdc to 50Vdc  
Max. Overload Voltage \_ 50Vdc to 100Vdc  
Packaging \_ Reel

Application  
Specific Resistors

### NiAu-termination Series

AR SERIES  
THICK FILM CHIP



Case Sizes \_ 0402 to 1206  
Resistance Range (E24) \_ 1Ω to 10M / Jumper  
Rated Power @ 70°C \_ 1/16W to 1/4W  
Temp. Coefficient \_ ±100, ±200ppm/°C

Resistance Tolerance \_ ±1%, ±5%  
Max. Working Voltage \_ 50Vdc to 200Vdc  
Max. Overload Voltage \_ 100Vdc to 500Vdc  
Packaging \_ Reel

### High Voltage Series

RV SERIES  
THICK FILM CHIP



Case Sizes \_ 0805, 1206, 2512  
Resistance Range (E24) \_ 100KΩ to 27MΩ  
Rated Power @ 70°C \_ 1/8W to 1W  
Temp. Coefficient \_ ±200ppm/°C

Resistance Tolerance \_ ±1%, ±5%  
Max. Working Voltage \_ 400Vdc to 500Vdc  
Max. Overload Voltage \_ 800Vdc to 1,000Vdc  
Packaging \_ Reel

### Trimmable Series

TR SERIES  
THICK FILM CHIP



Case Sizes \_ 0402 to 1206  
Resistance Range (E24) \_ 1Ω to 10MΩ  
Rated Power @ 70°C \_ 1/16W to 1/4W  
Temp. Coefficient \_ ±100, ±200ppm/°C

Resistance Tolerance \_ 0/-10%, 0/-20%, 0/-30%  
Max. Working Voltage \_ 50Vdc to 200Vdc  
Max. Overload Voltage \_ 100Vdc to 500Vdc  
Packaging \_ Reel

### Surge Series

SR SERIES  
THICK FILM CHIP



Case Sizes \_ 0805 to 2512  
Resistance Range (E24) \_ 1Ω to 100KΩ  
Rated Power @ 70°C \_ 1/8W to 1W  
Temp. Coefficient \_ ±200ppm/°C

Resistance Tolerance \_ ±5%, ±10%, ±20%  
Max. Working Voltage \_ 150Vdc to 200Vdc  
Max. Overload Voltage \_ 300Vdc to 400Vdc  
Packaging \_ Reel

### Anti-Sulfuration Series

AF SERIES  
THICK FILM CHIP



Case Size \_ 0402 to 1206  
Resistance Range (E24) \_ 1Ω to 22MΩ  
Rated Power @ 70°C \_ 1/16W to 1/4W  
Temp. Coefficient \_ ±100, ±200ppm/°C

Resistance Tolerance \_ ±1%, ±5%  
Max. Working Voltage \_ 50Vdc to 200Vdc  
Max. Overload Voltage \_ 100Vdc to 500Vdc  
Packaging \_ Reel

### Automotive Grade Series

AC SERIES  
THICK FILM CHIP



Case Size \_ 0402 to 1206  
Resistance Range (E24) \_ 1Ω to 22MΩ  
Rated Power @ 70°C \_ 1/16W to 1/4W  
Temp. Coefficient \_ ±100, ±200ppm/°C

Resistance Tolerance \_ ±1%, ±5%  
Max. Working Voltage \_ 50Vdc to 200Vdc  
Max. Overload Voltage \_ 100Vdc to 500Vdc  
Packaging \_ Reel

Chip Resistors  
RF Attenuators

### Attenuator

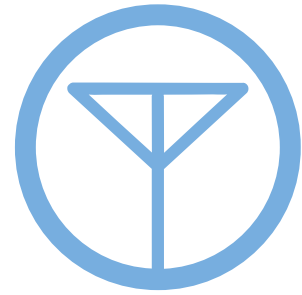
ATV321 SERIES  
THICK FILM CHIP



Case Size \_ 0404  
Attenuance Range \_ 1dB to 20dB  
Attenuation Tolerance \_ 1dB to 5dB: ±0.3dB  
6dB to 10dB: ±0.5dB  
15dB: ±1dB  
20dB: ±2dB

Frequency Range \_ 1dB to 10dB: DC to 2.5GHz  
15dB and 20dB: DC to 2.0GHz  
Max. Permissible Voltage \_ 50V  
Power Rating \_ 40mW  
Temp. Range \_ -55°C to +125°C  
Packaging \_ Reel





High Frequency Antennas

### Chip Antenna

FM



Size (mm) \_ 24 x 5.0 x 1.6  
 Frequency Range\* \_ 88MHz to 108MHz  
 Polarization \_ Linear  
 Azimuth \_ Omni-Directional

Temp. Range \_ -25°C to +85°C  
 Packaging \_ Reel

### Chip Antenna

UHF



Size (mm) \_ 37.5 x 6.8 x 0.9  
 Frequency Range\* \_ 400MHz to 500MHz  
 Band Width \_ > 20MHz  
 Gain (Max.)\* \_ 0.5dB  
 Polarization \_ Linear

Azimuth \_ Omni-Directional  
 VSWR\* \_ < 2.0  
 Temp. Range \_ -55°C to +125°C  
 Packaging \_ Bulk, Reel

### Chip Antenna

UHF

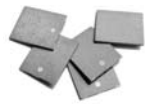


Size (mm) \_ 4 x 12 x 1.5  
 Frequency Range\* \_ 400MHz to 500MHz  
 Band Width \_ > 20MHz  
 Gain (Max.)\* \_ 0.5dB  
 Polarization \_ Linear

Azimuth \_ Omni-Directional  
 VSWR\* \_ < 3.0  
 Temp. Range \_ -40°C to +125°C  
 Packaging \_ Reel

### Chip Antenna

UHF



Size (mm) \_ 16.5 x 14 x 0.9  
 Frequency Range\* \_ 850MHz to 950MHz  
 Band Width \_ > 100MHz  
 Gain (Max.)\* \_ 1.5dB  
 Polarization \_ Linear

Azimuth \_ Omni-Directional  
 VSWR\* \_ < 2.0  
 Temp. Range \_ -55°C to +125°C  
 Packaging \_ Bulk, Reel

### Chip Antenna

UHF



Size (mm) \_ 12 x 4 x 0.9  
 Frequency Range\* \_ 850MHz to 950MHz  
 Band Width \_ > 20MHz  
 Gain (Max.)\* \_ 0.5dB  
 Polarization \_ Linear

Azimuth \_ Omni-Directional  
 VSWR\* \_ < 2.0  
 Temp. Range \_ -55°C to +125°C  
 Packaging \_ Reel

### Chip Antenna

DUAL-BAND  
 900 / 1800 MHz



Size (mm) \_ 21 x 12 x 0.9  
 Frequency Range\* \_ 880MHz to 960MHz, 1,710MHz to 1,880MHz  
 Band Width \_ > 30MHz, > 170MHz  
 Gain (Max.)\* \_ 0.5dB to 1dB  
 Polarization \_ Linear

Azimuth \_ Omni-Directional  
 VSWR\* \_ < 2.7  
 Temp. Range \_ -55°C to +125°C  
 Packaging \_ Bulk

### Chip Antenna

DUAL-BAND  
 2.45 / 5.2 GHz



Size (mm) \_ 8.7 x 8.0 x 0.9  
 Frequency Range\* \_ 2.45 / 5.20 GHz  
 Band Width \_ > 100MHz  
 Gain (Max.)\* \_ 3.5dB / 1.5dB  
 Polarization \_ Linear

Azimuth \_ Omni-Directional  
 VSWR\* \_ < 2.5  
 Temp. Range \_ -55°C to +85°C  
 Packaging \_ Reel

### Triple-band Antenna

PCB VERTICAL  
 900 / 1800 / 1900 MHz



Size (mm) \_ 30 x 9.4 x 0.8  
 Frequency Range\* \_ 880MHz to 960MHz, 1,710MHz to 1,880MHz  
 Band Width \_ > 80MHz, > 280MHz  
 Gain (Max.)\* \_ 1dB to 1.5dB  
 Polarization \_ Linear

Azimuth \_ Omni-Directional  
 VSWR\* \_ < 2.5  
 Temp. Range \_ -55°C to +125°C  
 Packaging \_ Bulk

\* Depends on the Yageo demoboard



High Frequency Antennas

### Triple-band Antenna

WITH CABLE & CONNECTOR  
900 / 1800 / 1900 MHz



Size (mm) \_ 35 x 6.0 x 0.4  
Frequency Range\* \_ 880MHz to 960MHz, 1,710MHz to 1,880MHz, 1,850MHz to 1,990MHz  
Band Width \_ > 80MHz, > 170MHz  
Gain (Max.)\* \_ 0dB to 0.5dB, 0.5dB to 1dB  
Polarization \_ Linear

Azimuth \_ Omni-Directional  
VSWR\* \_ < 3.5  
Temp. Range \_ -40°C to +85°C  
Packaging \_ Bulk

### Chip Antenna

DECT / WCDMA



Size (mm) \_ 8.8 x 6.8 x 0.9  
Frequency Range\* \_ 1.88GHz to 2.1GHz  
Band Width \_ W > 100MHz  
Gain (Max.)\* \_ 2.0dB  
Polarization \_ Linear

Azimuth \_ Omni-Directional  
VSWR\* \_ < 2.0  
Temp. Range \_ -55°C to +125°C  
Packaging \_ Reel

### Chip Antenna

BT / WIFI  
PIFA MODE



Size (mm) \_ 12 x 4.0 x 2.0, 19 x 3.0 x 3.6  
Frequency Range\* \_ 2.45GHz  
Band Width \_ > 200MHz  
Gain (Max.)\* \_ 5.0dB for Size 1930  
6.66dB for Size 1240  
Polarization \_ Linear

Azimuth \_ Omni-Directional  
VSWR\* \_ < 2.0  
Temp. Range \_ -40°C to +85°C for size 1930  
-25°C to +85°C for size 1240  
Packaging \_ Reel

### Chip Antenna

BT / WIFI



Size (mm) \_ 9.5 x 2.0 x 1.1  
Frequency Range\* \_ 2.70GHz, 2.79GHz, 2.90GHz  
Band Width \_ > 200MHz  
Gain (Max.)\* \_ 2.85dB  
Polarization \_ Linear

Azimuth \_ Omni-Directional  
VSWR\* \_ < 2.8  
Temp. Range \_ -55°C to +125°C  
Packaging \_ Reel

### Chip Antenna

BT / WIFI



Size (mm) \_ 8.0 x 1.0 x 1.0  
Center Frequency \_ 2.10GHz, 2.20GHz, 2.30GHz, 2.45GHz, 2.50GHz, 2.60GHz, 2.70GHz, 2.80GHz  
Band Width \_ > 100MHz  
Gain (Max.)\* \_ 3.8dB  
Polarization \_ Linear

Azimuth \_ Omni-Directional  
VSWR\* \_ < 2.5  
Temp. Range \_ -55°C to +125°C  
Packaging \_ Reel

### Chip Antenna

BT / WIFI



Size (mm) \_ 7.8 x 3.6 x 0.9  
Frequency Range\* \_ 2.45GHz, 2.60GHz, 2.70GHz  
Band Width \_ > 100MHz  
Gain (Max.)\* \_ 4.1dB  
Polarization \_ Linear

Azimuth \_ Omni-Directional  
VSWR\* \_ < 2.5  
Temp. Range \_ -55°C to +85°C  
Packaging \_ Reel

### Chip Antenna

BT / WIFI



Size (mm) \_ 7.3 x 5.5 x 1.3  
Frequency Range\* \_ 2.45GHz, 2.60GHz, 2.70GHz, 2.80GHz  
Band Width \_ > 100MHz  
Gain (Max.)\* \_ 1.2dB  
Polarization \_ Linear

Azimuth \_ Omni-Directional  
VSWR\* \_ < 2.0  
Temp. Range \_ -55°C to +125°C  
Packaging \_ Reel

### Chip Antenna

BT / WIFI



Size (mm) \_ 4.0 x 1.8 x 1.2, 6.0 x 2.0 x 1.2, 6.5 x 2.2 x 1.2  
Frequency Range\* \_ 2.45GHz  
Band Width \_ > 200MHz  
Gain (Max.)\* \_ 2.97dB for Size 4018  
4.57dB for Size 6522  
5.1dB for Size 6020  
Polarization \_ Linear

Azimuth \_ Omni-Directional  
VSWR\* \_ < 2.0  
Temp. Range \_ -25°C to +85°C for size 6522  
-55°C to +125°C for size 6020, 4018  
Packaging \_ Reel



High Frequency Antennas

### Chip Antenna

BT / WIFI



Size (mm) \_ 5.3 x 2.0 x 1.3  
 Frequency Range\* \_ 2.00GHz, 2.10GHz, 2.20GHz, 2.30GHz, 2.40GHz, 2.45GHz, 2.50GHz  
 Band Width \_ > 100MHz  
 Gain (Max.)\* \_ 4.0dB  
 Polarization \_ Linear

Azimuth \_ Omni-Directional  
 VSWR\* \_ < 2.5  
 Temp. Range \_ -55°C to +85°C  
 Packaging \_ Reel

### Chip Antenna

BT / WIFI



Size (mm) \_ 5.0 x 1.0 x 1.0  
 Frequency Range\* \_ 2.30GHz, 2.40GHz, 2.80GHz, 2.45GHz, 2.50GHz, 2.60GHz, 3.10GHz, 3.30GHz, 3.70GHz  
 Band Width \_ > 100MHz  
 Gain (Max.)\* \_ 2.45dB  
 Polarization \_ Linear

Azimuth \_ Omni-Directional  
 VSWR\* \_ < 2.0  
 Temp. Range \_ -55°C to +85°C  
 Packaging \_ Reel

### Chip Antenna

BT / WIFI / WIMAX



Size (mm) \_ 3.2 x 1.6 x 1.2  
 Center Frequency \_ 2.20GHz, 2.30GHz, 2.40GHz, 2.45GHz, 2.50GHz, 2.60GHz, 2.70GHz, 2.80GHz, 2.90GHz, 3.3GHz to 3.9GHz for Wimax  
 Band Width \_ > 100MHz  
 Gain (Max.) \_ 3.1dB for BT / Wifi  
 2.8dB for Wimax

Polarization \_ Linear  
 Azimuth \_ Omni-Directional  
 VSWR\* \_ < 2.5  
 Temp. Range \_ -25°C to +85°C  
 Packaging \_ Reel

### Chip Antenna

BT / WIFI



Size (mm) \_ 2.0 x 1.25 x 1.0  
 Frequency Range\* \_ 2.45 GHz  
 Band Width \_ > 100MHz  
 Gain (Max.)\* \_ 2.1dB  
 Polarization \_ Linear

Azimuth \_ Omni-Directional  
 VSWR\* \_ < 2.5  
 Temp. Range \_ -25°C to +85°C  
 Packaging \_ Reel

### Chip Antenna

BT / WIFI  
 PIFA MODE



Size (mm) \_ 3.2 x 1.6 x 1.2, 5.3 x 2.0 x 1.2  
 Frequency Range\* \_ 2.45 GHz  
 Band Width \_ > 200MHz  
 Gain (Max.)\* \_ 3.48dB for Size 3216  
 2.84dB for Size 5320  
 Polarization \_ Linear

Azimuth \_ Omni-Directional  
 VSWR\* \_ < 2.8  
 Temp. Range \_ -25°C to +85°C  
 Packaging \_ Reel

### Chip Antenna

GPS  
 LP MODE  
 CHIP-SMD



Size (mm) \_ 12.5 x 6.6 x 0.9  
 Frequency Range\* \_ 1.575GHz  
 Band Width \_ > 100MHz  
 Gain (Max.)\* \_ 1.5dB  
 Polarization \_ Linear

Azimuth \_ Omni-Directional  
 VSWR\* \_ < 2.0  
 Temp. Range \_ -55°C to +125°C  
 Packaging \_ Bulk

### Chip Antenna

GPS  
 LP MODE  
 CHIP-SMD



Size (mm) \_ 6.15 x 3.0 x 1.25  
 Frequency Range\* \_ 1.575GHz, 1.675GHz  
 Band Width \_ > 100MHz  
 Gain (Max.)\* \_ 1dB  
 Polarization \_ Linear

Azimuth \_ Omni-Directional  
 VSWR\* \_ < 2.0  
 Temp. Range \_ -55°C to +85°C  
 Packaging \_ Reel

### Chip Antenna

GPS  
 PIFA MODE  
 LP MODE  
 CHIP-SMD



Size (mm) \_ 3.2 x 1.6 x 1.2, 5.3 x 2.0 x 1.25  
 Frequency Range\* \_ 1.575GHz  
 Band Width \_ > 100MHz  
 Gain (Max.)\* \_ 7.32dB for Size 3216  
 3.16dB for Size 5320  
 Polarization \_ Linear

Azimuth \_ Omni-Directional  
 VSWR\* \_ < 2.0 for Size 5320  
 < 2.8 for Size 3216  
 Temp. Range \_ -25°C to +85°C  
 Packaging \_ Reel

\* Depends on the Yageo demoboard





High Frequency Antennas

### Active Antenna

GPS / GLONASS / SDARS  
CABLE + IPEX CONNECTOR



**Size (mm)** \_ 13 x 13 x 5, 13 x 13 x 7,  
16 x 16 x 5, 16 x 16 x 7,  
19 x 19 x 5, 19 x 19 x 7,  
21 x 15 x 5.5, 28 x 28 x 5.5,  
30 x 30 x 5.5, 35 x 28 x 5.5  
**Frequency Range\*** \_ 1.575GHz  
**Gain\*** \_ 17 ±1dB (at fc, without SAW filter)

**Noise Figure** \_ 1.5dB typ (at fc, 1.8dB Max)  
**Output VSWR** \_ 2.0 (at fc)  
**Supply Voltage** \_ 3.3 ±5% V  
**Current Consumption** \_ 6mA  
**Output Impedance\*** \_ 50Ω  
**Packaging** \_ Bulk

High Frequency Filters

### Low Pass Filter



**Size (mm)** \_ 1.6 x 0.8 x 0.65  
**Frequency Range** \_ 2.45GHz  
**Pass Band** \_ 2,400MHz to 2,500MHz  
**Impedance** \_ 50Ω  
**Insertion Loss (Max.)** \_ 0.45dB  
**Ripple (Max.)** \_ 0.6dB

**VSWR\*** \_ 1.5  
**Attenuation** \_ 25dB Min @ 2 fo  
18dB Min @ 3 fo  
**Packaging** \_ Reel

### Low Pass Filter



**Size (mm)** \_ 2.0 x 1.25 x 0.85  
**Frequency Range** \_ 2.45GHz  
**Pass Band** \_ 2,400MHz to 2,500MHz  
**Impedance** \_ 50Ω  
**Insertion Loss (Max.)** \_ 0.5dB  
**Ripple (Max.)** \_ 0.6dB

**VSWR\*** \_ 1.8  
**Attenuation** \_ 27dB Min @ 5,000MHz  
25dB Min @ 7,500MHz  
**Packaging** \_ Reel

### Band Pass Filter



**Size (mm)** \_ 1.6 x 0.8 x 0.65  
**Frequency Range** \_ 2.45GHz  
**Pass Band** \_ 2,400MHz to 2,500MHz  
**Impedance** \_ 50Ω  
**Insertion Loss (Max.)** \_ 2.4dB  
**Ripple (Max)** \_ 0.5dB  
**VSWR\*** \_ 2.0

**Attenuation** \_  
30dB Min @ 880MHz to 960MHz  
20dB Min @ 1,710MHz to 1,910MHz  
8.5dB Min @ 2,170MHz  
30dB Min @ 4,800MHz to 5,000MHz  
30dB Min @ 7,200MHz to 7,500MHz  
**Packaging** \_ Reel

### Band Pass Filter



**Size (mm)** \_ 2.0 x 1.25 x 0.6 to 1.0  
**Frequency Range** \_ 2.45GHz  
**Pass Band** \_ 2,400MHz to 2,500MHz  
**Impedance** \_ 50Ω  
**Insertion Loss (Max.)** \_ 2.0dB  
**Ripple (Max.)** \_ 0.6dB  
**VSWR\*** \_ 2.0

**Attenuation** \_  
40dB Min @ 1,000MHz to 1,600MHz  
40dB Min @ 4,900MHz  
20dB Min @ 7,500MHz  
**Packaging** \_ Reel

### Band Pass Filter



**Size (mm)** \_ 2.5 x 2.0 x 0.95 to 1.2  
**Frequency Range** \_ 2.45GHz  
**Pass Band** \_ 2,400MHz to 2,500MHz  
**Impedance** \_ 50Ω  
**Insertion Loss (Max.)** \_ 1.5dB  
**Ripple (Max.)** \_ 0.6dB  
**VSWR\*** \_ 2.0

**Attenuation** \_  
40dB Min @ 880MHz to 960MHz  
30dB Min @ 1,710MHz to 1,785MHz  
30dB Min @ 1,850MHz to 1,910MHz  
20dB Min @ 4,800MHz to 5,000MHz  
30dB Min @ 7,200MHz to 7,500MHz  
**Packaging** \_ Reel

### Diplexer



**Size (mm)** \_ 2.0 x 1.25 x 0.75  
**Frequency Range** \_ 2.4 / 5.0GHz  
**Pass Band** \_ 2,400GHz to 2,500GHz  
**Insertion Loss (Max.)** \_ 0.6dB  
**VSWR\* (Max.)** \_ 2.0  
**Attenuation** \_ 18dB Min @ 4,800MHz to 6,000MHz  
20dB Min @ 7,200MHz to 7,500MHz

**Pass Band** \_ 4,900GHz to 5,900GHz  
**Insertion Loss (Max.)** \_ 1.1dB  
**VSWR\* (Max.)** \_ 2.0  
**Attenuation** \_  
18dB Min @ 1,800MHz to 2,500MHz  
15dB Ref @ 10,300MHz to 10,700MHz  
**Packaging** \_ Reel

### Diplexer



**Size (mm)** \_ 2.0 x 1.25 x 0.75  
**Frequency Range** \_ 2.4 / 5.0GHz  
**Pass Band** \_ 2,400GHz to 2,500GHz  
**Insertion Loss (Max.)** \_ 0.6dB  
**VSWR\* (Max.)** \_ 2.0  
**Attenuation** \_ 17dB Min @ 4,800MHz to 6,000MHz  
20dB Min @ 7,200MHz to 7,500MHz

**Pass Band** \_ 4,900GHz to 5,900GHz  
**Insertion Loss (Max.)** \_ 1.1dB  
**VSWR\* (Max.)** \_ 2.0  
**Attenuation** \_  
17dB Min @ 1,800MHz to 2,500MHz  
20dB Ref @ 10,300MHz to 10,700MHz  
**Packaging** \_ Reel

\* Depends on the Yageo demoboard



High Frequency Filters

### Diplexer



Size (mm) \_ 2.0 x 1.25 x 0.85  
 Frequency Range \_ 2.4 / 5.0GHz  
 Pass Band \_ 2,400GHz to 2,500GHz  
 Insertion Loss (Max.) \_ 0.7dB  
 VSWR\* (Max.) \_ 2.0  
 Attenuation \_  
 20dB Min @ 4,900MHz to 5,900MHz

Pass Band \_ 4,900GHz to 5,900GHz  
 Insertion Loss (Max.) \_ 0.9dB  
 VSWR\* (Max.) \_ 2.0  
 Attenuation \_  
 20dB Min @ 2,400MHz to 2,500MHz  
 Packaging \_ Reel

High Frequency Balancers

### Balanced Filter

COMBO



Size (mm) \_ 2.0 x 1.25 x 0.9  
 Frequency Range \_ 2.40GHz  
 Pass Band \_ 2,400MHz to 2,500MHz  
 Impedance \_ Conjugate match to CSR BC03 / 04 / 05 series  
 Insertion Loss (Max.) \_ 3.5dB  
 Ripple (Max.) \_ 0.5dB  
 Amplitude Balance (Max) \_ 1.0dB  
 Phase Differential \_ 180 ±10 degree

Attenuation \_  
 40dB Min @ 880MHz to 960MHz  
 25dB Min @ 1,300MHz to 1,600MHz  
 35dB Min @ 4,800MHz to 5,000MHz  
 30dB Min @ 7,200MHz to 7,500MHz  
 Packaging \_ Reel

### Balanced Filter

COMBO



Size (mm) \_ 2.0 x 1.25 x 0.8  
 Frequency Range \_ 2.40GHz  
 Pass Band \_ 2,400MHz to 2,500MHz  
 Impedance \_ Conjugate match to CSR BC04/05/06 series  
 Conjugate match to MTK MT6616 series  
 Insertion Loss (Max.) \_ 2.8dB, 3.1dB  
 Ripple (Max.) \_ 0.6dB  
 Amplitude Balance (Max) \_ 1.5dB

Phase Differential \_ 180 ±10 degree  
 Attenuation \_  
 35dB Min @ 880MHz to 960MHz  
 30dB Min @ 1,710MHz to 1,880MHz  
 20dB Min @ 1,880MHz to 1,990MHz  
 30dB Min @ 4,800MHz to 5,000MHz  
 Packaging \_ Reel

### Balanced Filter

COMBO



Size (mm) \_ 2.5 x 2.0 x 1.2  
 Frequency Range \_ 2.40GHz  
 Pass Band \_ 2,400MHz to 2,500MHz  
 Impedance \_ Conjugate match to CSR BC02/03 series  
 Insertion Loss (Max.) \_ 3.1dB  
 Ripple (Max.) \_ 1.0dB  
 Amplitude Balance (Max) \_ 1.0dB  
 Phase Differential \_ 180 ±10 degree

Attenuation \_  
 48dB Min @ 880MHz to 960MHz  
 48dB Min @ 1,710MHz to 1,880MHz  
 40dB Min @ 1,880MHz to 1,990MHz  
 20dB Min @ 2,110MHz to 2,170MHz  
 20dB Min @ 4,800MHz to 5,000MHz  
 20dB Min @ 7,200MHz to 7,500MHz  
 Packaging \_ Reel

### Balun



Size (mm) \_ 1.6 x 0.8 x 0.65  
 Frequency Range \_ 5.0GHz  
 Pass Band \_ 4,900MHz to 5,950MHz  
 Impedance \_ 50 / 100Ω  
 Insertion Loss (Max.) \_ 1.2dB  
 Ripple (Max.) \_ 0.6dB

VSWR\* \_ 2.0  
 Amplitude Balance (Max.) \_ 1.5dB  
 Phase Differential \_ 180 ±10 degree  
 Packaging \_ Reel

### Balun



Size (mm) \_ 2.0 x 1.25 x 0.8  
 Frequency Range \_ 2.40GHz  
 Pass Band \_ 2,400MHz to 2,500MHz  
 Impedance \_ 50 / 50Ω, 50 / 100Ω, 50 / 200Ω  
 Insertion Loss (Max.) \_ 1.0dB  
 Ripple (Max.) \_ 0.6dB

VSWR\* \_ 2.0  
 Amplitude Balance (Max) \_ 2.0dB  
 Phase Differential \_ 180 ±10 degree  
 Packaging \_ Reel

### Balun



Size (mm) \_ 2.0 x 1.25 x 0.8  
 Frequency Range \_ 5.0GHz  
 Pass Band \_ 4,900MHz to 5,900MHz  
 Impedance \_ 50 / 100Ω  
 Insertion Loss (Max.) \_ 1.2dB  
 Ripple (Max.) \_ 0.6dB

VSWR\* \_ 2.0  
 Amplitude Balance (Max.) \_ 2.0dB  
 Phase Differential \_ 180 ±10 degree  
 Packaging \_ Reel



MLV

## MLV Series

**SURGE SUPPRESSOR**  
**ESD PROTECTION**  
 Meet IEC 61051-2-2



**Size** \_ 0402 to 1206  
**Capacitance Range** \_ 3pF to 3000pF  
**Capacitance Tolerance** \_  $\pm 30\%$   
**Varistor Voltage Tolerance** \_  
 $\pm 10\%$ ,  $\pm 15\%$ ,  $\pm 20\%$ , Special Range

**Rated Working Voltage** \_ 3.3Vdc to 42Vdc  
**Operating Temp. Range** \_  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$   
**Packaging** \_ Reel





Aluminum Electrolytic Caps.

### S5/SS Series

**MINIATURE**  
5mm and 7mm Height Radial



Capacitance Range \_ 0.1 $\mu$ F to 470 $\mu$ F  
Rated Working Voltage \_ 4Vdc to 63Vdc  
Operating Temp. Range \_ -40°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.01CV or 3 $\mu$ A  
Load Life \_ 1,000Hr. @ 105°C  
Packaging \_ Bulk / Tape

### SK Series

**GENERAL PURPOSE**  
Radial



Capacitance Range \_ 0.1 $\mu$ F to 22,000 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 450Vdc  
Operating Temp. Range \_ -40°C to +85°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.01CV + 3 $\mu$ A  $\leq$  100Vdc  
= 0.03CV + 10 $\mu$ A  $\geq$  160Vdc  
Load Life \_ 2,000Hr. @ 85°C  
Packaging \_ Bulk / Tape

### SE-K Series

**GENERAL PURPOSE**  
Radial



Capacitance Range \_ 0.47 $\mu$ F to 15,000 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 450Vdc  
Operating Temp. Range \_  
V  $\leq$  250Vdc: -40°C to +105°C  
V  $\geq$  350Vdc: -25°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.01CV + 3 $\mu$ A  $\leq$  100Vdc  
= 0.03CV + 10 $\mu$ A  $\geq$  160Vdc  
Load Life \_ 1,000Hr. @ 105°C  
Packaging \_ Bulk / Tape

### SH Series

**GENERAL PURPOSE**  
Radial



Capacitance Range \_ 0.47 $\mu$ F to 15,000 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 450Vdc  
Operating Temp. Range \_  
V  $\leq$  100Vdc: -40°C to +105°C  
V  $\geq$  160Vdc: -25°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.01CV + 3 $\mu$ A  $\leq$  100Vdc  
= 0.03CV + 10 $\mu$ A  $\geq$  160Vdc  
Load Life \_ 2,000Hr. @ 105°C  
Packaging \_ Bulk / Tape

### SG Series

**MINIATURE AND LONG LIFE**  
Radial



Capacitance Range \_ 3.3 $\mu$ F to 330 $\mu$ F  
Rated Working Voltage \_ 160Vdc to 450Vdc  
Operating Temp. Range \_ -40°C to +105°C  
V  $\leq$  400Vdc: -40°C to +105°C  
V  $\geq$  450Vdc: -25°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.06CV + 10 $\mu$ A  
Load Life \_ 5,000Hr. @ 105°C  
Packaging \_ Bulk / Tape

### SP Series

**LONG LIFE**  
Radial



Capacitance Range \_ 3.3 $\mu$ F to 330 $\mu$ F  
Rated Working Voltage \_ 160Vdc to 450Vdc  
Operating Temp. Range \_  
V  $\leq$  400Vdc: -40°C to +105°C  
V  $\geq$  450Vdc: -25°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.04CV + 100 $\mu$ A  
Load Life \_ 8,000Hr. to 10,000Hr. @ 105°C  
Packaging \_ Bulk / Tape

### SQ Series

**HIGH VOLTAGE AND LOW IMPEDANCE**  
Radial



Capacitance Range \_ 2.2 $\mu$ F to 220 $\mu$ F  
Rated Working Voltage \_ 160Vdc to 450Vdc  
Operating Temp. Range \_ -40°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  $\leq$  0.03CV + 10 $\mu$ A  
Load Life \_ 2,000Hr. @ 105°C  
Packaging \_ Bulk / Tape

### SC Series

**LOW IMPEDANCE**  
Radial



Capacitance Range \_ 4.7 $\mu$ F to 15,000 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 100Vdc  
Operating Temp. Range \_ -40°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.01CV or 3 $\mu$ A  
Load Life \_ 2,000Hr. to 3,000Hr. @ 105°C  
Packaging \_ Bulk / Tape





Aluminum  
Electrolytic Caps.

## SZ Series

ULTRA LOW IMPEDANCE AND  
HIGH RIPPLE  
Radial



Capacitance Range \_ 470 $\mu$ F to 3,300 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 16Vdc  
Operating Temp. Range \_ -40°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.03CV  
Load Life \_ 2,000Hr. @ 105°C  
Packaging \_ Bulk / Tape

## SY Series

LOW IMPEDANCE AND  
LONG LIFE  
Radial



Capacitance Range \_ 2.2 $\mu$ F to 15,000 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 100Vdc  
Operating Temp. Range \_ -40°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.01CV or 3 $\mu$ A  
Load Life \_ 3,000Hr. to 6,000Hr. @ 105°C  
Packaging \_ Bulk / Tape

## SN Series

NON-POLAR  
Radial



Capacitance Range \_ 0.22 $\mu$ F to 2,200 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 250Vdc  
Operating Temp. Range \_  
V  $\leq$  100Vdc: -40°C to +105°C  
V  $\geq$  160Vdc: -25°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.03CV + 3 $\mu$ A  
Load Life \_ 1,000Hr. @ 105°C  
Packaging \_ Bulk / Tape

## SB Series

LOW LEAKAGE CURRENT  
Radial



Capacitance Range \_ 0.1 $\mu$ F to 4,700 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 100Vdc  
Operating Temp. Range \_ -40°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.002CV or 0.4 $\mu$ A  
Load Life \_ 1,000Hr. @ 105°C  
Packaging \_ Bulk / Tape

## SR Series

BI-POLAR  
Radial

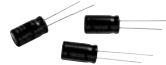


Capacitance Range \_ 2.2 $\mu$ F to 47 $\mu$ F  
Rated Working Voltage \_ 25Vdc to 50Vdc  
Operating Temp. Range \_ -40°C to +85°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  
100 $\mu$ A (after 2Min. both direction)  
Load Life \_ 1,000Hr. @ 85°C  
Packaging \_ Bulk / Tape

## SJ Series

LOW IMPEDANCE AND  
LONG LIFE  
Radial



Capacitance Range \_ 5.6 $\mu$ F to 6,800 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 100Vdc  
Operating Temp. Range \_ -40°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  $\leq$  0.01CV or 3 $\mu$ A  
Load Life \_ 1,000Hr. to 5,000Hr. @ 105°C  
Packaging \_ Bulk / Tape

## ST Series

LOW IMPEDANCE AND  
LONG LIFE  
Radial



Capacitance Range \_ 6.8 $\mu$ F to 15,000 $\mu$ F  
Rated Working Voltage \_ 10Vdc to 63Vdc  
Operating Temp. Range \_ -40°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.01CV or 3 $\mu$ A  
Load Life \_ 4,000Hr. to 10,000Hr. @ 105°C  
Packaging \_ Bulk / Tape

## SU Series

HIGH TEMPERATURE  
Radial



Capacitance Range \_ 4.7 $\mu$ F to 4,700 $\mu$ F  
Rated Working Voltage \_ 10Vdc to 63Vdc  
Operating Temp. Range \_ -40°C to +125°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.01CV or 3 $\mu$ A  
Load Life \_ 2,000Hr. @ 125°C  
Packaging \_ Bulk / Tape



Aluminum Electrolytic Caps.

### SW Series

**HIGH TEMPERATURE AND LONG LIFE**  
Radial



Capacitance Range \_ 47 $\mu$ F to 4,700 $\mu$ F  
Rated Working Voltage \_ 10Vdc to 63Vdc  
Operating Temp. Range \_ -40°C to +125°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.01CV or 3 $\mu$ A  
Load Life \_ 2,000Hr. to 5,000Hr. @ 125°C  
Packaging \_ Bulk / Tape

### SD Series

**HIGH RIPPLE CURRENT**  
Radial

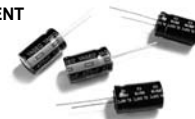


Capacitance Range \_ 22 $\mu$ F to 330 $\mu$ F  
Rated Working Voltage \_ 160Vdc to 450Vdc  
Operating Temp. Range \_ -25°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  $\leq$  0.02CV +15 $\mu$ A  
Load Life \_ 5,000Hr. @ 105°C  
Packaging \_ Bulk / Tape

### SL Series

**HIGH RIPPLE CURRENT AND LONG LIFE**  
Radial



Capacitance Range \_ 2.2 $\mu$ F to 18,000 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 450Vdc  
Operating Temp. Range \_ 6.3Vdc to 100Vdc: -40°C to +105°C  
160Vdc to 450Vdc: -25°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  $\leq$  0.01CV or 3 $\mu$ A  
Load Life \_ 3,000Hr. to 7,000Hr. @ 105°C  
Packaging \_ Bulk / Tape

### LH Series

**GENERAL PURPOSE**  
Snap-In



Capacitance Range \_ 56 $\mu$ F to 120,000 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 500Vdc  
Operating Temp. Range \_ 6.3Vdc to 100Vdc: -40°C to +85°C  
160Vdc to 500Vdc: -25°C to +85°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.02CV or 3mA  
Load Life \_ 2,000Hr. @ 85°C  
Packaging \_ Bulk

### LG Series

**GENERAL PURPOSE**  
Snap-In



Capacitance Range \_ 47 $\mu$ F to 82,000 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 450Vdc  
Operating Temp. Range \_ 6.3Vdc to 100Vdc: -40°C to +105°C  
160Vdc to 450Vdc: -25°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ I = 0.02CV, L = 20 m/m  
I = 0.03CV or 3mA  
Load Life \_ 2,000Hr. @ 105°C  
Packaging \_ Bulk

### LV Series

**LONG LIFE**  
Snap-In



Capacitance Range \_ 270 $\mu$ F to 68,000 $\mu$ F  
Rated Working Voltage \_ 10Vdc to 450Vdc  
Operating Temp. Range \_ -40°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  $\leq$  0.02VC or 3mA  
Load Life \_ 3,000Hr. @ 105°C  
Packaging \_ Bulk

### LC Series

**LONG LIFE**  
Snap-In



Capacitance Range \_ 270 $\mu$ F to 2,200 $\mu$ F  
Rated Working Voltage \_ 4Vdc to 100Vdc  
Operating Temp. Range \_ -25°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  $\leq$  0.02VC or 3mA  
Load Life \_ 5,000Hr. @ 105°C  
Packaging \_ Bulk

### CA Series

**LOW PROFILE**  
SMD V-Chip



Capacitance Range \_ 0.1 $\mu$ F to 1,000 $\mu$ F  
Rated Working Voltage \_ 4Vdc to 100Vdc  
Operating Temp. Range \_ -40°C to +85°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  $\leq$  0.01CV or 3 $\mu$ A  
Load Life \_ 2,000Hr. @ 85°C  
Packaging \_ Reel



Aluminum  
Electrolytic Caps.

## CB Series

**LOW PROFILE**  
SMD V-Chip



Capacitance Range \_ 0.1 $\mu$ F to 1,000 $\mu$ F  
Rated Working Voltage \_ 4Vdc to 100Vdc  
Operating Temp. Range \_ -40°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  $\leq$  0.01CV or 3 $\mu$ A  
Load Life \_ 1,000Hr. @ 105°C  
Packaging \_ Reel

## CD Series

**ULTRA LOW IMPEDANCE**  
SMD V-Chip



Capacitance Range \_ 4.7 $\mu$ F to 1,500 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 35Vdc  
Operating Temp. Range \_ -40°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  $\leq$  0.01CV or 3 $\mu$ A  
Load Life \_ 2,000Hr. @ 105°C  
Packaging \_ Reel

## CE Series

**LONG LIFE**  
SMD V-Chip



Capacitance Range \_ 0.1 $\mu$ F to 1,000 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 100Vdc  
Operating Temp. Range \_ -40°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  $\leq$  0.01CV or 3 $\mu$ A  
Load Life \_ 2,000Hr. @ 105°C  
Packaging \_ Reel

## CZ Series

**LOW IMPEDANCE**  
SMD V-Chip



Capacitance Range \_ 0.1 $\mu$ F to 1,000 $\mu$ F  
Rated Working Voltage \_ 4Vdc to 50Vdc  
Operating Temp. Range \_ -40°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  $\leq$  0.01CV or 3 $\mu$ A  
Load Life \_ 1,000Hr. @ 105°C  
Packaging \_ Reel

## CH Series

**ULTRA LOW IMPEDANCE AND  
HIGH TEMPERATURE**  
SMD V-Chip



Capacitance Range \_ 47 $\mu$ F to 1,000 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 50Vdc  
Operating Temp. Range \_ -40°C to +125°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  $\leq$  0.01CV or 3 $\mu$ A  
Load Life \_ 1,000Hr. to 2,000Hr. @ 125°C  
Packaging \_ Reel

## CX Series

**ULTRA LOW IMPEDANCE  
AND LONG LIFE**  
SMD V-Chip



Capacitance Range \_ 1 $\mu$ F to 1,000 $\mu$ F  
Rated Working Voltage \_ 6.3Vdc to 50Vdc  
Operating Temp. Range \_ -40°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  $\leq$  0.01CV or 3 $\mu$ A  
Load Life \_ 3,000Hr. to 5,000Hr. @ 105°C  
Packaging \_ Reel

## CP Series

**ULTRA LOW IMPEDANCE**  
8mm Height Radial  
Conductive Polymer Capacitor



Capacitance Range \_ 470 $\mu$ F to 820 $\mu$ F  
Rated Working Voltage \_ 2.5Vdc to 6.3Vdc  
Operating Temp. Range \_ -55°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  $\leq$  0.2CV  
Load Life \_ 2,000Hr. @ 105°C  
Packaging \_ Bulk / Tape

## CG Series

**ULTRA LOW IMPEDANCE**  
Conductive Polymer Capacitor



Capacitance Range \_ 33 $\mu$ F to 2,700 $\mu$ F  
Rated Working Voltage \_ 2.5Vdc to 25Vdc  
Operating Temp. Range \_ -55°C to +105°C  
Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  $\leq$  0.2CV  
Load Life \_ 2,000Hr. @ 105°C  
Packaging \_ Bulk / Tape



Aluminum Electrolytic Caps.

### NP Series

**GENERAL PURPOSE**  
Screw Type



Capacitance Range \_ 270 $\mu$ F to 820,000 $\mu$ F  
 Rated Working Voltage \_ 10Vdc to 450Vdc  
 Operating Temp. Range \_  
 10Vdc to 250Vdc: -40°C to +85°C  
 315Vdc to 450Vdc: -25°C to +85°C  
 Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.02CV or 5 $\mu$ A  
 Load Life \_ 2,000Hr. @ 85°C  
 Packaging \_ Bulk

### NM Series

**FOR WIDE TEMPERATURE**  
Screw Type



Capacitance Range \_ 220 $\mu$ F to 330,000 $\mu$ F  
 Rated Working Voltage \_ 25Vdc to 450Vdc  
 Operating Temp. Range \_  
 25Vdc to 100Vdc: -40°C to +105°C  
 160Vdc to 450Vdc: -25°C to +105°C  
 Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.02CV or 5 $\mu$ A  
 Load Life \_ 2,000Hr. @ 105°C  
 Packaging \_ Bulk

### NF Series

**LONG LIFE FOR INVERTER**  
Screw Type



Capacitance Range \_ 1,800 $\mu$ F to 22,000 $\mu$ F  
 Rated Working Voltage \_ 400Vdc to 450Vdc  
 Operating Temp. Range \_ -40°C to +85°C  
 Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.02CV or 5 $\mu$ A  
 Load Life \_ 5,000Hr. @ 85°C  
 Packaging \_ Bulk

### NH Series

**HIGH TEMPERATURE AND LONG LIFE FOR INVERTER**  
Screw Type



Capacitance Range \_ 330 $\mu$ F to 390,000 $\mu$ F  
 Rated Working Voltage \_ 10Vdc to 500Vdc  
 Operating Temp. Range \_  
 10Vdc to 100Vdc: -40°C to +105°C  
 160Vdc to 500Vdc: -25°C to +105°C  
 Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_ = 0.02CV or 5 $\mu$ A  
 Load Life \_ 5,000Hr. @ 105°C  
 Packaging \_ Bulk

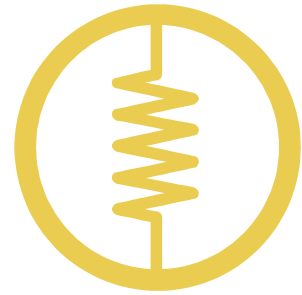
### NG Series

**FOR LOW VOLTAGE AND LARGE CAPACITY**  
Screw Type



Capacitance Range \_ 2,200 $\mu$ F to 1,000,000 $\mu$ F  
 Rated Working Voltage \_ 10Vdc to 100Vdc  
 Operating Temp. Range \_ -40°C to +85°C  
 Capacitance Tolerance \_  $\pm$ 20%

Max. Leakage Current \_  
 = 35mm l  $\leq$  0.02CV ( $\mu$ A) or 4mA  
 $\geq$  51mm l  $\leq$  0.03CV ( $\mu$ A) or 6mA  
 Load Life \_ 2,000Hr. @ 85°C  
 Packaging \_ Bulk



Leaded Resistors

**MFR Series**

**METAL FILM**  
Normal & Miniature Style

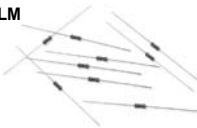


Resistance Range \_ 1Ω to 10MΩ & 0Ω  
Rated Power @ 70°C \_ 1/6W to 3W  
Temp. Coefficient \_  
±15, ±25, ±50, ±100ppm/°C  
Resistance Tolerance \_ ±0.5%, ±1%

Max. Working Voltage \_ 200Vdc to 500Vdc  
Max. Overload Voltage \_ 400Vdc to 1KVdc  
Packaging \_ Bulk, Tape / Box, Tape / Reel

**MFP Series**

**PRECISION METAL FILM**  
Normal & Miniature Style

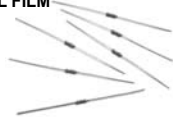


Resistance Range \_ 10Ω to 1MΩ  
Rated Power @ 70°C \_ 1/6W to 3W  
Temp. Coefficient \_ ±15, ±25ppm/°C  
Resistance Tolerance \_ ±0.1%, ±0.25%

Max. Working Voltage \_ 150Vdc to 500Vdc  
Max. Overload Voltage \_ 300Vdc to 1KVdc  
Packaging \_ Bulk, Tape / Box, Tape / Reel

**MHP Series**

**HIGH PRECISION METAL FILM**  
Normal Style

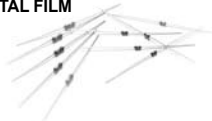


Resistance Range \_ 100Ω to 500KΩ  
Rated Power @ 70°C \_ 1/4W & 1/2W  
Temp. Coefficient \_ ±5, ±10ppm/°C  
Resistance Tolerance \_ ±0.02%, ±0.05%

Max. Working Voltage \_ 200Vdc to 250Vdc  
Max. Overload Voltage \_ 400Vdc to 500Vdc  
Packaging \_ Bulk

**MF0 Series**

**PROFESSIONAL METAL FILM**  
Miniature Style



Resistance Range \_ 1Ω to 10MΩ & 0Ω  
Rated Power @ 70°C \_ 0.4W & 0.6W  
Temp. Coefficient \_ ±50ppm/°C  
Resistance Tolerance \_ ±1%

Max. Working Voltage \_ 250Vdc to 350Vdc  
Max. Overload Voltage \_ 500Vdc to 700Vdc  
Packaging \_ Bulk, Tape / Box, Tape / Reel

**MFN Series**

**METAL FILM**  
High Temp / High Humidity

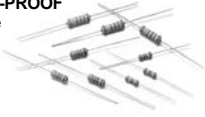


Resistance Range \_ 1Ω to 10MΩ & 0Ω  
Rated Power @ 70°C \_ 1/6W to 3W  
Temp. Coefficient \_ ±15, ±25, ±50, ±100ppm/°C  
Resistance Tolerance \_ ±0.5%, ±1%

Max. Working Voltage \_ 200Vdc to 500Vdc  
Max. Overload Voltage \_ 400Vdc to 1KVdc  
Packaging \_ Bulk, Tape / Box, Tape / Reel

**FMF Series**

**METAL FILM FLAME-PROOF**  
Normal & Miniature Style



Resistance Range \_ 1Ω to 10MΩ & 0Ω  
Rated Power @ 70°C \_ 1/4W to 3W  
Temp. Coefficient \_ ±50, ±100ppm/°C  
Resistance Tolerance \_ ±1%

Max. Working Voltage \_ 250Vdc to 500Vdc  
Max. Overload Voltage \_ 500Vdc to 1KVdc  
Flameproof Silicone Coating Meet \_ UL94V-0  
Packaging \_ Bulk, Tape / Box, Tape / Reel

**FM0 Series**

**PROFESSIONAL METAL FILM FLAME-PROOF**  
Miniature Style

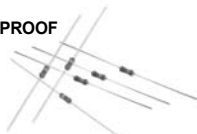


Resistance Range \_ 1Ω to 10MΩ & 0Ω  
Rated Power @ 70°C \_ 0.4W & 0.6W  
Temp. Coefficient \_ ±50ppm/°C  
Resistance Tolerance \_ ±1%

Max. Working Voltage \_ 200Vdc to 300Vdc  
Max. Overload Voltage \_ 400Vdc to 600Vdc  
Flameproof Silicone Coating Meet \_ UL94V-0  
Packaging \_ Bulk, Tape / Box, Tape / Reel

**FMP Series**

**HIGH POWER FLAME-PROOF METAL FILM**  
Ultra Miniature Style



Resistance Range \_ 1Ω to 10MΩ & 0Ω  
Rated Power @ 70°C \_ 1/2W to 3W  
Temp. Coefficient \_ ±100ppm/°C  
Resistance Tolerance \_ ±1%, ±5%

Max. Working Voltage \_ 200Vdc to 750Vdc  
Max. Overload Voltage \_ 400Vdc to 1KVdc  
Flameproof Silicone Coating Meet \_ UL94V-0  
Packaging \_ Bulk, Tape / Box, Tape / Reel



Leaded Resistors

### RSF Series

**METAL OXIDE FILM**  
Normal & Miniature Style



Resistance Range \_ 1Ω to 1MΩ & 0Ω  
Rated Power @ 70°C \_ 1/4W to 5W  
Temp. Coefficient \_ ±300ppm/°C  
Resistance Tolerance \_ ±2%, ±5%

Max. Working Voltage \_ 200Vdc to 750Vdc  
Max. Overload Voltage \_ 300Vdc to 1KVdc  
Flameproof Silicone Coating Meet \_ UL94V-0  
Packaging \_ Bulk, Tape / Box, Tape / Reel

### LIR Series

**LOW INDUCTIVE METAL OXIDE FILM**  
Normal & Miniature Style



Resistance Range \_ 1Ω to 100KΩ & 0Ω  
Rated Power @ 70°C \_ 1/4W to 3W  
Temp. Coefficient \_ ±300ppm/°C  
Resistance Tolerance \_ ±5%, ±10%

Max. Working Voltage \_ 200Vdc to 350Vdc  
Max. Overload Voltage \_ 300Vdc to 600Vdc  
Packaging \_ Bulk, Tape / Box, Tape / Reel

### FRM Series

**FUSIBLE METAL FILM**  
Normal & Miniature Style



Resistance Range \_ 4.7Ω to 560Ω (±2%)  
2.2Ω to 560Ω (±5%)  
Rated Power @ 70°C \_ 1/4W to 3W  
Temp. Coefficient \_ ±200ppm/°C  
Resistance Tolerance \_ ±2%, ±5%

Fusing Characteristics \_  
Fusing time within 30 seconds at 16 times of rated power.  
Fusing residual resistive value at least 100 times rated resistance.  
Packaging \_ Bulk, Tape / Box, Tape / Reel

### HTM Series

**HIGH TEMPERATURE**  
Normal Style



Resistance Range \_ 2KΩ to 68KΩ  
Rated Power @ 70°C \_ 2.5W  
Temp. Coefficient \_ ±250ppm/°C  
Resistance Tolerance \_ ±5%

Max. Working Voltage \_ 750Vdc  
Packaging \_ Bulk, Tape / Box, Tape / Reel

### MMF Series

**MELF METAL RESISTORS**  
Normal & Miniature Style



Resistance Range \_ 1Ω to 1MΩ & 0Ω  
Rated Power @ 70°C \_ 0.25W to 1W  
Temp. Coefficient \_ ±15, ±25, ±50, ±100, ±200ppm/°C  
Resistance Tolerance \_ ±0.1%, ±0.25%, ±0.5%, ±1%

Max. Working Voltage \_ 150Vdc to 350Vdc  
Max. Overload Voltage \_ 300Vdc to 700Vdc  
Packaging \_ Tape / Reel

### MMP Series

**MELF METAL RESISTORS**  
Ultra Miniature Style



Resistance Range \_ 1Ω to 1MΩ & 0Ω  
Rated Power @ 70°C \_ 1W & 2W  
Temp. Coefficient \_ ±50, ±100, ±200ppm/°C  
Resistance Tolerance \_ ±1%, ±2%, ±5%

Max. Working Voltage \_ 350Vdc  
Max. Overload Voltage \_ 700Vdc  
Packaging \_ Tape / Reel

### CFR Series

**CARBON FILM**  
Normal & Miniature Style

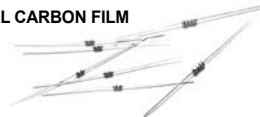


Resistance Range \_ 1Ω to 10MΩ & 0Ω  
Rated Power @ 70°C \_ 1/6W to 3W  
Temp. Coefficient \_ -1,500ppm/°C to +350ppm/°C  
Resistance Tolerance \_ ±2%, ±5%

Max. Working Voltage \_ 150Vdc to 500Vdc  
Max. Overload Voltage \_ 300Vdc to 1KVdc  
Packaging \_ Bulk, Tape / Box, Tape / Reel

### CF0 Series

**PROFESSIONAL CARBON FILM**  
Miniature Style



Resistance Range \_ 1Ω to 10MΩ & 0Ω  
Rated Power @ 70°C \_ 0.4W & 0.6W  
Temp. Coefficient \_ -1,500ppm/°C to +350ppm/°C  
Resistance Tolerance \_ ±2%, ±5%

Max. Working Voltage \_ 200Vdc to 300Vdc  
Max. Overload Voltage \_ 400Vdc to 600Vdc  
Packaging \_ Bulk, Tape / Box, Tape / Reel



Leaded Resistors

### CFN Series

**CARBON FILM**  
High Temp / High Humidity

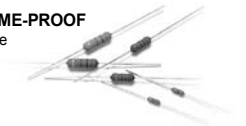


Resistance Range \_ 1Ω to 10MΩ & 0Ω  
Rated Power @ 70°C \_ 1/6W to 3W  
Temp. Coefficient \_ -1,500ppm/°C to +350ppm/°C  
Resistance Tolerance \_ ±2%, ±5%

Max. Working Voltage \_ 150Vdc to 500Vdc  
Max. Overload Voltage \_ 300Vdc to 1KVdc  
Packaging \_ Bulk, Tape / Box, Tape / Reel

### FCR Series

**CARBON FILM FLAME-PROOF**  
Normal & Miniature Style



Resistance Range \_ 1Ω to 10MΩ & 0Ω  
Rated Power @ 70°C \_ 1/4W to 3W  
Temp. Coefficient \_ -1,500ppm/°C to +350ppm/°C  
Resistance Tolerance \_ ±2%, ±5%

Max. Working Voltage \_ 250Vdc to 500Vdc  
Max. Overload Voltage \_ 500Vdc to 1KVdc  
Flameproof Silicone Coating Meet \_ UL94V-0  
Packaging \_ Bulk, Tape / Box, Tape / Reel

### FC0 Series

**PROFESSIONAL CARBON FILM  
FLAME-PROOF**  
Miniature Style



Resistance Range \_ 1Ω to 10MΩ & 0Ω  
Rated Power @ 70°C \_ 0.4W & 0.6W  
Temp. Coefficient \_ -1,500ppm/°C to +350ppm/°C  
Resistance Tolerance \_ ±2%, ±5%

Max. Working Voltage \_ 200Vdc to 300Vdc  
Max. Overload Voltage \_ 400Vdc to 600Vdc  
Flameproof Silicone Coating Meet \_ UL94V-0  
Packaging \_ Bulk, Tape / Box, Tape / Reel

### NCR Series

**NON-INDUCTIVE CARBON FILM**  
Normal & Miniature Style



Resistance Range \_ 2.2Ω to 10KΩ  
Rated Power @ 70°C \_ 1/4W to 3W  
Temp. Coefficient \_ -800ppm/°C to -500ppm/°C  
Resistance Tolerance \_ ±5%, ±10%

Max. Working Voltage \_ 250Vdc to 500Vdc  
Max. Overload Voltage \_ 500Vdc to 1KVdc  
Flameproof Silicone Coating Meet \_ UL94V-0  
Inductance \_ < 1μH  
Packaging \_ Bulk, Tape / Box, Tape / Reel

### HTR Series

**HIGH TEMPERATURE**  
Normal Style



Resistance Range \_ 2KΩ to 68KΩ  
Rated Power @ 70°C \_ 2W  
Temp. Coefficient \_ ±250ppm/°C  
Resistance Tolerance \_ ±5%

Max. Working Voltage \_ 500Vdc  
Packaging \_ Bulk, Tape / Box, Tape / Reel

### MCF Series

**MELF CARBON RESISTORS**  
Normal & Miniature Style



Resistance Range \_ 1Ω to 1MΩ & 0Ω  
Rated Power @ 70°C \_ 1/6W to 1W  
Temp. Coefficient \_ -1,500ppm/°C to +350ppm/°C  
Resistance Tolerance \_ ±2%, ±5%

Max. Working Voltage \_ 200Vdc to 350Vdc  
Max. Overload Voltage \_ 400Vdc to 700Vdc  
Packaging \_ Tape / Reel

### MCP Series

**MELF CARBON RESISTORS**  
Ultra Miniature Style



Resistance Range \_ 1Ω to 1MΩ & 0Ω  
Rated Power @ 70°C \_ 1W & 2W  
Temp. Coefficient \_ -1,500ppm/°C to +350ppm/°C  
Resistance Tolerance \_ ±2%, ±5%

Max. Working Voltage \_ 350Vdc  
Max. Overload Voltage \_ 700Vdc  
Packaging \_ Tape / Reel

### HHV Series

**HIGH VOLTAGE &  
HIGH OHMIC RESISTORS**  
Normal Style



Resistance Range \_ 100KΩ to 68MΩ  
Rated Power @ 70°C \_ 1/4W to 3W  
Temp. Coefficient \_ ±200ppm/°C  
Resistance Tolerance \_ ±1%, ±5%

Max. Working Voltage \_ 1.6KVdc to 7KVdc  
Max. Overload Voltage \_ 3KVdc to 14KVdc  
Packaging \_ Tape / Box





Leaded Resistors

### APR Series

**PULSE-LOADING RESISTORS**  
Normal & Miniature Style



Resistance Range \_ 100KΩ to 10MΩ  
Rated Power @ 70°C \_ 1/4W to 2W  
Temp. Coefficient \_ ±300ppm/°C  
Resistance Tolerance \_ ±5%

Packaging \_ Bulk, Tape / Box, Tape / Reel

### ZOR Series

**ZERO OHM RESISTORS**  
Normal Style



Max. Resistance Value \_ 20mΩ or less  
Rated Power \_ 1/6W & 1/4W

Rated Current \_  
2.5AMPS @ 70°C for 1/4W  
1.5AMPS @ 70°C for 1/6W  
Packaging \_ Bulk, Tape / Box, Tape / Reel

### JPW Series

**JUMPER WIRES**  
Normal Style



Material \_ Soft Copper Wire with Tin Plating  
Conductor Resistance \_ 0.54mΩ / cm  
Wire Diameter \_  
Φ0.5mm to Φ0.8mm & Φ1.0mm (±0.05mm)

Conductivity \_  
Φ0.5mm: Min. 94%  
Φ0.6mm to 1.0mm: Min. 96%  
Thickness of Plating \_ 4μm ± 1μm  
Packaging \_ Tape / Box, Tape / Reel

### KNP Series

**WIREWOUND RESISTORS**  
Normal & Miniature Style



Resistance Range \_ 0.1Ω to 1KΩ  
Rated Power @ 70°C \_ 1/4W to 7W  
Temp. Coefficient \_ ±300ppm/°C  
Resistance Tolerance \_ ±1%, ±5%

Dielectric Withstanding Voltage \_  
200Vdc to 400Vdc  
Flameproof Silicone Coating Meet \_  
UL94V-0  
Packaging \_ Bulk, Tape / Box, Tape / Reel

### NKN Series

**NON-INDUCTIVE WIREWOUND RESISTORS**  
Normal & Miniature Style



Resistance Range \_ 0.1Ω to 33Ω  
Rated Power @ 70°C \_ 1/2W to 7W  
Temp. Coefficient \_ ±300ppm/°C  
Resistance Tolerance \_ ±5%

Dielectric Withstanding Voltage \_  
250Vdc to 400Vdc  
Flameproof Silicone Coating Meet \_ UL94V-0  
Packaging \_ Bulk, Tape / Box, Tape / Reel

### FKN Series

**FUSIBLE WIREWOUND FLAME-PROOF TYPE**  
Normal & Miniature Style



Resistance Range \_ 0.1Ω to 390Ω  
Rated Power @ 70°C \_ 1/4W to 4W  
Temp. Coefficient \_ ±350ppm/°C  
Resistance Tolerance \_ ±1%, ±5%

Dielectric Withstanding Voltage \_  
200Vdc to 300Vdc  
Packaging \_ Bulk, Tape / Box, Tape / Reel

### PNP Series

**POWER WIREWOUND RESISTORS**  
Ultra Miniature Style



Resistance Range \_ 0.1Ω to 330Ω  
Rated Power @ 70°C \_ 1W to 4W  
Temp. Coefficient \_ ±300ppm/°C  
Resistance Tolerance \_ ±1%, ±5%

Dielectric Withstanding Voltage \_ 300Vdc  
Packaging \_ Bulk, Tape / Box, Tape / Reel

### PNP V Series

**POWER WIREWOUND RESISTORS**  
High Power Style



Resistance Range \_ 0.1Ω to 8.2KΩ  
Rated Power @ 70°C \_ 1W to 10W  
Temp. Coefficient \_ ±300ppm/°C  
Resistance Tolerance \_ ±1%, ±5%

Dielectric Withstanding Voltage \_ 300Vdc  
Packaging \_ Bulk, Tape / Box, Tape / Reel





Leaded Resistors

### SQP & NSP Series

**CEMENT RESISTORS**  
Axial Lead Style



Resistance Range \_ 0.1Ω to 200KΩ  
Rated Power @ 70°C \_ 2W to 40W  
Temp. Coefficient \_ ±300ppm/°C  
Resistance Tolerance \_ ±5%

Load Life \_ ±5.0% + 0.05Ω  
Insulation Resistance \_ > 1,000MΩ  
Packaging \_ Bulk

### SQM & NSM Series

**CEMENT RESISTORS**  
Vertical Lead Style



Resistance Range \_ 0.1Ω to 200KΩ  
Rated Power @ 70°C \_ 2W to 10W  
Temp. Coefficient \_ ±300ppm/°C  
Resistance Tolerance \_ ±5%

Load Life \_ ±5.0% + 0.05Ω  
Insulation Resistance \_ > 1,000MΩ  
Packaging \_ Bulk

### SQZ & NSZ Series

**CEMENT RESISTORS**  
Radial Terminals Style



Resistance Range \_ 0.1Ω to 200KΩ  
Rated Power @ 70°C \_ 3W to 20W  
Temp. Coefficient \_ ±300ppm/°C  
Resistance Tolerance \_ ±5%

Load Life \_ ±5.0% + 0.05Ω  
Insulation Resistance \_ > 1,000MΩ  
Packaging \_ Bulk

### PSP Series

**CEMENT RESISTORS**  
AXIAL LEAD TYPE  
Power Wirewound Style



Resistance Range \_ 0.1Ω to 3.9KΩ  
Rated Power @ 70°C \_ 4W to 9W  
Temp. Coefficient \_ ±400ppm/°C  
Resistance Tolerance \_ ±5%, ±10%

Load Life \_ ±5.0% + 0.1Ω  
Insulation Resistance \_ ≥ 1,000MΩ  
Packaging \_ Bulk

### PSM Series

**CEMENT RESISTORS**  
VERTICAL LEAD TYPE  
Power Wirewound Style



Resistance Range \_ 0.1Ω to 3.9KΩ  
Rated Power @ 70°C \_ 4W to 9W  
Temp. Coefficient \_ ±400ppm/°C  
Resistance Tolerance \_ ±5%, ±10%

Load Life \_ ±5.0% + 0.1Ω  
Insulation Resistance \_ ≥ 1,000MΩ  
Packaging \_ Bulk

### FTR Series

**CEMENT RESISTORS**  
VERTICAL LEAD TYPE  
Fusible Thermal Style



Resistance Range \_ 1Ω to 10KΩ  
Rated Current \_ 2A to 10A  
Temp. Coefficient \_ ±250ppm/°C  
Resistance Tolerance \_ ±5%, ±10%

Standard Voltage \_ 250Vdc  
Packaging \_ Bulk

### SLR Series

**CERAMIC METAL PLATE RESISTORS**  
Normal Style



Resistance Range \_ 0.05Ω to 3.3Ω  
Rated Power @ 70°C \_ 2W to 10W  
Temp. Coefficient \_ ±250ppm/°C  
Resistance Tolerance \_ ±5%, ±10%

Max. Working Voltage \_ 250Vdc to 500Vdc  
Max. Overload Voltage \_ 500Vdc to 1KVdc  
Packaging \_ Bulk

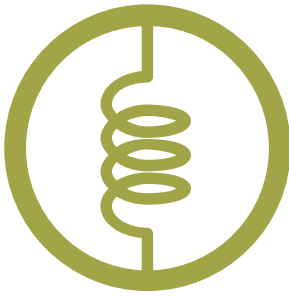
### AHA & AHP Series

**ALUMINUM HOUSED RESISTORS**  
Power Wirewound Style



Resistance Range \_ 0.1Ω to 3KΩ  
Rated Power @ 70°C \_ 5W to 250W  
Temp. Coefficient \_ ±200ppm/°C  
Resistance Tolerance \_ ±0.25% to ±10%

Packaging \_ Bulk



SMD Chip Beads

### SB Series

**MULTILAYER FERRITE**  
General Applications



**Size** \_ 100505, 160808, 201209, 321611, 321616, 322513, 451616, 453215  
**Impedance Range** \_ 6Ω to 2,700Ω  
**Test Frequency** \_ 30MHz to 100MHz  
**Tolerance** \_ ±25%

**DC Resistance** \_ 0.05Ω to 1.4Ω  
**Rated Current** \_ 100mA to 600mA  
**Packaging** \_ Tape, Reel

### NB Series

**MULTILAYER FERRITE**  
Data Line / Digital Signals



**Size** \_ 100505, 160808, 201209, 321611  
**Impedance Range** \_ 6Ω to 2,700Ω  
**Test Frequency** \_ 100MHz  
**Tolerance** \_ ±25%

**DC Resistance** \_ 0.05Ω to 1.0Ω  
**Rated Current** \_ 50mA to 800mA  
**Packaging** \_ Tape, Reel

### HF Series



**Size** \_ 100505, 160808  
**Impedance Range** \_ 120Ω to 1,800Ω  
**Test Frequency** \_ 100MHz & 1,000MHz  
**Tolerance** \_ ±25%

**DC Resistance** \_ 0.095Ω to 2.2Ω  
**Rated Current** \_ 50mA to 1,500mA  
**Packaging** \_ Tape, Reel

### GB Series

**MULTILAYER FERRITE**  
Medium Current Applications



**Size** \_ 160808, 201209, 321611, 321616, 322513, 451616, 453215  
**Impedance Range** \_ 7Ω to 2,000Ω  
**Test Frequency** \_ 30MHz to 100MHz  
**Tolerance** \_ ±25%

**DC Resistance** \_ 0.03Ω to 0.55Ω  
**Rated Current** \_ 300mA to 1,000mA  
**Packaging** \_ Tape, Reel

### PB Series

**MULTILAYER FERRITE**  
Large Current Applications



**Size** \_ 100505, 160808, 201209, 321611, 322513, 451616, 453215  
**Impedance Range** \_ 10Ω to 1,500Ω  
**Test Frequency** \_ 50MHz to 100MHz  
**Tolerance** \_ ±25%

**DC Resistance** \_ 0.01Ω to 0.25Ω  
**Rated Current** \_ 800mA to 6,000mA  
**Packaging** \_ Tape, Reel

### UPB Series

**MULTILAYER FERRITE**  
Ultra Current Applications



**Size** \_ 160808, 201209, 201212, 321611, 451616, 453215  
**Impedance Range** \_ 11Ω to 150Ω  
**Test Frequency** \_ 100MHz  
**Tolerance** \_ ±25%

**DC Resistance** \_ 0.01Ω to 0.025Ω  
**Rated Current** \_ 4,500mA to 9,000mA  
**Packaging** \_ Tape, Reel

### FB Series

**SHIELDED BEADS**  
Surface Mount



**Size** \_ 423226, 784729, 863226, 865626  
**Impedance Range** \_ 24Ω to 72Ω  
**Test Frequency** \_ 25MHz & 100MHz  
**Tolerance** \_ ±20%

**DC Resistance** \_ 0.6Ω to 0.9Ω  
**Packaging** \_ Tape, Reel

SMD Multilayer Chip Inductors

### CL Series

**MULTILAYER FERRITE**  
Monolithic Structure For Signals



**Size** \_ 100505, 160808, 201209, 201212, 321611  
**Inductance Range** \_ 0.01μH to 33μH  
**Test Frequency** \_ 1MHz to 50MHz  
**Tolerance** \_ ±10%, ±20%

**DC Resistance** \_ 0.15Ω to 2.2Ω  
**IDC** \_ 1mA to 300mA  
**Packaging** \_ Tape, Reel



SMD Multilayer  
Chip Inductors

## CLH Series

MULTILAYER HIGH FREQUENCY



Size \_ 1005, 1608, 2012  
Inductance Range \_ 1nH to 470nH  
Test Frequency \_ 50MHz to 800MHz  
Tolerance \_  $\pm 0.3$ ,  $\pm 5\%$ ,  $\pm 10\%$   
SRF \_ 300MHz to 10,000MHz

DC Resistance \_ 0.1 $\Omega$  to 4 $\Omega$   
IDC \_ 100mA to 600mA  
Packaging \_ Tape, Reel

SMD Wire Wound  
Chip Inductors

## SQV Series

FERRITE  
High Q & F /  
Low DC Resistance



Size \_ 322520, 453226  
Inductance Range \_ 0.1 $\mu$ H to 2,200 $\mu$ H  
Test Frequency \_ 1KHz to 1MHz  
Tolerance \_  $\pm 5\%$ ,  $\pm 10\%$ ,  $\pm 20\%$   
SRF \_ 1.3MHz to 200MHz

DC Resistance \_ 0.025 $\Omega$  to 50 $\Omega$   
Rated Current \_ 30mA to 700mA  
Packaging \_ Tape, Reel

## SQC Series

FERRITE  
High Current /  
Low DC Resistance



Size \_ 201609, 321618, 322517, 322520, 453226  
Inductance Range \_ 0.12 $\mu$ H to 560 $\mu$ H  
Test Frequency \_ 0.001MHz to 1MHz  
Tolerance \_  $\pm 5\%$ ,  $\pm 10\%$ ,  $\pm 20\%$   
SRF \_ 3MHz to 250MHz

DC Resistance \_ 0.08 $\Omega$  to 15.6 $\Omega$   
Rated Current \_ 60mA to 1,080mA  
Packaging \_ Tape, Reel

## NL Series

FERRITE  
Open Wire



Size \_ 201614, 252018  
Inductance Range \_ 0.005 $\mu$ H to 100 $\mu$ H  
Test Frequency \_ 0.796MHz to 25.2MHz  
Tolerance \_  $\pm 5\%$ ,  $\pm 10\%$   
SRF \_ 12MHz to 3,000MHz

DC Resistance \_ 0.08 $\Omega$  to 15.6 $\Omega$   
IDC \_ 70mA to 2,000mA  
Packaging \_ Tape, Reel

## NLC Series

FERRITE  
Open for High Current



Size \_ 252018, 322522  
Inductance Range \_ 0.47 $\mu$ H to 680 $\mu$ H  
Test Frequency \_ 0.796MHz to 25.2MHz  
Tolerance \_  $\pm 5\%$ ,  $\pm 10\%$   
SRF \_ 2MHz to 450MHz

DC Resistance \_ 0.07 $\Omega$  to 28 $\Omega$   
IDC \_ 65mA to 1,800mA  
Packaging \_ Tape, Reel

## NLV Series



Size \_ 322522  
Inductance Range \_ 0.01 $\mu$ H to 470 $\mu$ H  
Test Frequency \_ 0.796MHz to 100MHz  
Tolerance \_  $\pm 5\%$ ,  $\pm 10\%$   
SRF \_ 4MHz to 2,500MHz

DC Resistance \_ 0.13 $\Omega$  to 40 $\Omega$   
IDC \_ 25mA to 450mA  
Packaging \_ Tape, Reel

## NLCV Series



Size \_ 453232  
Inductance Range \_ 1 $\mu$ H to 330 $\mu$ H  
Test Frequency \_ 0.796MHz to 7.96MHz  
Tolerance \_  $\pm 5\%$ ,  $\pm 10\%$   
SRF \_ 4MHz to 200MHz

DC Resistance \_ 0.11 $\Omega$  to 13 $\Omega$   
IDC \_ 90mA to 1,050mA  
Packaging \_ Tape, Reel

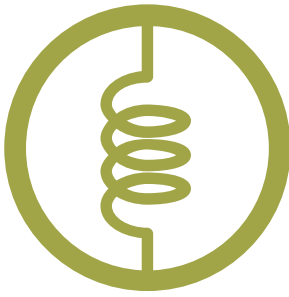
## LS Series

HIGH FREQUENCY



Size \_ 0603, 0805, 1008  
Inductance Range \_ 1.2nH to 47,000nH  
Test Frequency \_ 2.5MHz to 7.9MHz  
Tolerance \_  $\pm 5\%$ ,  $\pm 10\%$   
SRF \_ 15MHz to 1,700MHz

RDC \_ 0.06 $\Omega$  to 14.5 $\Omega$   
IDC \_ 180mA to 2,000mA  
Packaging \_ Tape, Reel



SMD Wire Wound  
Chip Inductors

### LT Series



Size \_ 0805, 1210  
Inductance Range \_ 120nH to 39,000nH  
Test Frequency \_ 2.52MHz to 25.2MHz  
Tolerance \_  $\pm 5\%$ ,  $\pm 10\%$   
SRF \_ 15MHz to 1,500MHz

RDC \_ 0.33 $\Omega$  to 16 $\Omega$   
IDC \_ 190mA to 1,500mA  
Packaging \_ Tape, Reel

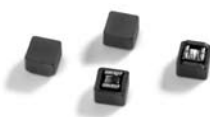
### LD Series



Size \_ 0805  
Inductance Range \_ 1.0 $\mu$ H to 100 $\mu$ H  
Test Frequency \_ 1MHz to 7.96MHz  
Tolerance \_  $\pm 10\%$ ,  $\pm 20\%$   
SRF \_ 9MHz to 100MHz

RDC \_ 0.1 $\Omega$  to 9 $\Omega$   
IDC \_ 70mA to 800mA  
Packaging \_ Tape, Reel

### PS Series



Size \_ 1008  
Inductance Range \_ 1.0 $\mu$ H to 1,000 $\mu$ H  
Test Frequency \_ 100KHz  
Tolerance \_  $\pm 10\%$ ,  $\pm 20\%$   
SRF \_ 1.5MHz to 344MHz

RDC \_ 0.05 $\Omega$  to 29.2 $\Omega$   
IDC \_ 0.1A to 3A  
Packaging \_ Tape, Reel

### CS Series

HIGH FREQUENCY



Size \_ 0402, 0603, 0805, 1008  
Inductance Range \_ 1.0nH to 10,000nH  
Test Frequency \_ 2.52MHz to 250MHz  
Tolerance \_  $\pm 2\%$ ,  $\pm 5\%$ ,  $\pm 10\%$   
SRF \_ 25MHz to 12,500MHz

RDC \_ 0.03 $\Omega$  to 8 $\Omega$   
I<sub>rms</sub> \_ 30mA to 1,360mA  
Packaging \_ Tape, Reel

### CT Series



Size \_ 0805  
Inductance Range \_ 1.8nH to 1,000nH  
Test Frequency \_ 25MHz to 250MHz  
Tolerance \_  $\pm 2\%$ ,  $\pm 5\%$ ,  $\pm 10\%$   
SRF \_ 330MHz to 9,400MHz

RDC \_ 0.03 $\Omega$  to 3.1 $\Omega$   
I<sub>rms</sub> \_ 300mA to 800mA  
Packaging \_ Tape, Reel

### HC Series



Size \_ 0603  
Inductance Range \_ 1.6nH to 24nH  
Test Frequency \_ 250MHz  
Tolerance \_  $\pm 2\%$ ,  $\pm 5\%$ ,  $\pm 10\%$   
SRF \_ 2,400MHz to 12,500MHz

RDC \_ 0.03 $\Omega$  to 0.105 $\Omega$   
I<sub>rms</sub> \_ 1,800mA to 2,400mA  
Packaging \_ Tape, Reel

### HQ Series



Size \_ 0805, 1008  
Inductance Range \_ 2.5nH to 390nH  
Test Frequency \_ 25MHz to 250MHz  
Tolerance \_  $\pm 2\%$ ,  $\pm 5\%$ ,  $\pm 10\%$   
SRF \_ 530MHz to 6,000MHz

RDC \_ 0.02 $\Omega$  to 0.7 $\Omega$   
I<sub>rms</sub> \_ 900mA to 1,600mA  
Packaging \_ Tape, Reel

### LCN Series

HIGH FREQUENCY



Size \_ 0603, 0805, 1008, 1206  
Inductance Range \_ 1.6nH to 8,200nH  
Test Frequency \_ 7.9MHz to 250MHz  
Tolerance \_  $\pm 2\%$ ,  $\pm 5\%$ ,  $\pm 10\%$   
SRF \_ 25MHz to 12,500MHz

RDC \_ 0.03 $\Omega$  to 6 $\Omega$   
I<sub>rms</sub> \_ 170mA to 1,000mA  
Packaging \_ Tape, Reel

SMD Wire Wound  
Chip Inductors**CMM Series**

COMMON MODE



Size \_ 21  
 Impedance Range \_ 30Ω to 900Ω  
 Test Frequency \_ 100MHz  
 Tolerance \_ ±20%

RDC \_ 0.2Ω to 0.6Ω  
 IDC \_ 80mA to 450mA  
 Packaging \_ Tape, Reel

SMD Power Inductors

**SSL Series**

UNSHIELDED



Size \_ 04LP, 0400, 0402, 0614, 0802, 0804,  
 0810, 1306  
 Inductance Range \_ 1.0μH to 1,000μH  
 Test Frequency \_ 100KHz  
 Tolerance \_ ±20%

DC Resistance \_ 0.009Ω to 22.6Ω  
 Isat \_ 0.08A to 20A  
 Irms \_ 0.05A to 8.6A  
 Packaging \_ Tape, Reel

**SSL\_HC Series**

UNSHIELDED



Size \_ 0503, 0804, 1306  
 Inductance Range \_ 0.33μH to 100μH  
 Test Frequency \_ 100KHz  
 Tolerance \_ ±20%

DC Resistance \_ 0.002Ω to 32Ω  
 Isat2 \_ 0.87A to 30A  
 Irms3 \_ 0.72A to 16A  
 Packaging \_ Tape, Reel

**SCD Series**

UNSHIELDED



Size \_ 0301, 03011, 03015, 03021, 0403, 0501, 0502,  
 0503, 0504, 0506, 0703, 0705, 0706, 1004,  
 1005, 1006  
 Inductance Range \_ 1.0μH to 8,200μH  
 Test Frequency \_ 1KHz to 7.96MHz  
 Tolerance \_ ±20%, ±30%

DC Resistance \_ 0.005Ω to 50Ω  
 Rated Current \_ 0.03A to 4.5A  
 Packaging \_ Tape, Reel

**SCDS Series**

SHIELDED



Size \_ 2D09, 2D11, 2D14, 2D18, 3D11, 3D16, 3D28,  
 4D18, 4D28, 5D18, 5D28, 6D28, 6D38, 62, 64,  
 73, 74, 124, 125, 127, 104R, 105R  
 Inductance Range \_ 0.6μH to 1,000μH  
 Test Frequency \_ 1KHz to 7.96MHz  
 Tolerance \_ ±20%, ±30%, +40%/-20%

DC Resistance \_ 1.09mΩ to 9,440mΩ  
 Rated Current \_ 0.13A to 13.8A  
 Packaging \_ Tape, Reel

**SDS Series**

SHIELDED



Size \_ 0402BL, 0402, 0804, 1306  
 Inductance Range \_ 0.1μH to 10,000μH  
 Test Frequency \_ 100KHz  
 Tolerance \_ ±20%  
 SRF \_ 0.4MHz to 200MHz

DC Resistance \_ 0.021Ω to 74Ω  
 Current \_ 0.01A to 5.6A  
 Packaging \_ Tape, Reel

**SDT Series**

SHIELDED



Size \_ 0402, 0804  
 Inductance Range \_ 1.0μH to 1,000μH  
 Test Frequency \_ 100KHz  
 Tolerance \_ ±20%  
 SRF \_ 2.3MHz to 157MHz

DC Resistance \_ 0.025Ω to 8.1Ω  
 Rated Current \_ 0.08A to 5A  
 Packaging \_ Tape, Reel

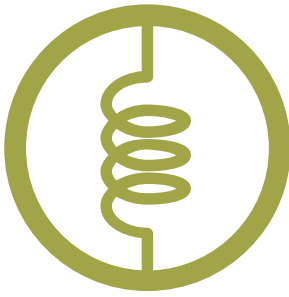
**SLF Series**

SHIELDED



Size \_ 0628, 0728, 0730, 0732, 0745, 1045,  
 1055, 1255, 1265, 1275  
 Inductance Range \_ 1.2μH to 1,500μH  
 Test Frequency \_ 1KHz  
 Tolerance \_ ±20%, ±30%

DC Resistance \_ 0.0069Ω to 4.78Ω  
 Rated Current \_ 0.13A to 13A  
 Packaging \_ Tape, Reel



SMD Power Inductors

**SCDA Series**



Size \_ 2D12, 2D15, 2D18  
 Inductance Range \_ 1.2μH to 47μH  
 Test Frequency \_ 100KHz / 1.0V  
 Tolerance \_ ±20%, ±30%

DC Resistance \_ 120mΩ to 1,700mΩ  
 IDC \_ 0.23A to 1.3A  
 Packaging \_ Tape, Reel

**STD Series**

UNSHIELDED



Size \_ 1109  
 Inductance Range \_ 10μH to 1,200μH  
 Test Frequency \_ 1KHz  
 Tolerance \_ ±20%

DC Resistance \_ 0.06Ω to 3.5Ω  
 Rated Current \_ 0.35A to 3.5A  
 Packaging \_ Tape, Reel

**SLH Series**



Size \_ 0630, 0650, 1040, 1250  
 Inductance Range \_ 0.1μH to 10μH  
 Test Frequency \_ 100KHz / 1.0V  
 Tolerance \_ ±20%

DC Resistance \_ 0.53mΩ to 105mΩ  
 Rated Current \_ 4.5A to 118A  
 Packaging \_ Reel

**SFI Series**



Size \_ 100605  
 Inductance Range \_ 0.1μH to 0.2μH  
 Test Frequency \_ 1MHz  
 Tolerance \_ ±10%, ±15%, ±20%

DC Resistance \_ 0.65mΩ  
 Packaging \_ Reel

DIP Power Inductors

**PMC Series**



Size \_ 107, 109, 115, 127, 129  
 Inductance Range \_ 0.25μH to 4.7μH  
 Test Frequency \_ 100MHz  
 Tolerance \_ ±20%

DC Resistance \_ 0.45mΩ to 5.1mΩ  
 Rated Current \_ 8A to 40A  
 Packaging \_ Bulk

**PMD Series**



Size \_ 0808, 1109, 9595  
 Inductance Range \_ 0.3μH to 1.2μH  
 Test Frequency \_ 100KHz / 200KHz  
 Tolerance \_ ±20%

DC Resistance \_ 0.67mΩ to 4mΩ  
 Rated Current \_ 21A to 50A  
 Packaging \_ Bulk

**PMF Series**



Size \_ 0806, 1008, 107, 109, 118, 129  
 Inductance Range \_ 0.25μH to 220μH  
 Test Frequency \_ 100KHz / 200KHz  
 Tolerance \_ ±20%

DC Resistance \_ 0.65mΩ to 305mΩ  
 Rated Current \_ 1.5A to 50A  
 Packaging \_ Bulk

**NSF Series**



Size \_ 0806, 0808, 109, 118, 1210, 1310  
 Inductance Range \_ 0.25μH to 220μH  
 Test Frequency \_ 100KHz / 1.0V  
 Tolerance \_ ±20%

DC Resistance \_ 0.75mΩ to 350mΩ  
 Rated Current \_ 2A to 60A  
 Packaging \_ Bulk



DIP Power Inductors

**MC Series**

Size \_ 1208, 1209, 1210, 1211  
 Inductance Range \_ 0.22 $\mu$ H to 4.7 $\mu$ H  
 Test Frequency \_ 100KHz / 1.0V  
 Tolerance \_  $\pm$ 20%

DC Resistance \_ 0.5m $\Omega$  to 10m $\Omega$   
 Rated Current \_ 10A to 56A  
 Packaging \_ Bulk

**SLM Series**

Size \_ 0709, 0808, 1112  
 Inductance Range \_ 1.0 $\mu$ H to 4,700 $\mu$ H  
 Tolerance \_  $\pm$ 10%,  $\pm$ 15%,  $\pm$ 20%

DC Resistance \_ 0.006 $\Omega$  to 7.6 $\Omega$   
 Packaging \_ Bulk

**SL Series**

CHOKE COILS



Size \_ 0406, 0608, 1016  
 Inductance Range \_ 1.0 $\mu$ H to 47,000 $\mu$ H  
 Test Frequency \_ 1KHz to 7.96MHz  
 Tolerance \_  $\pm$ 10%

DC Resistance \_ 0.018 $\Omega$  to 190 $\Omega$   
 IDC \_ 15mA to 10A  
 Packaging \_ Tape, Bulk

**MB Series**

CHOKE COILS



Size \_ 5018, 5026, 5052, 6018, 6052  
 Inductance Range \_ 1 $\mu$ H to 10 $\mu$ H  
 Test Frequency \_ 1KHz to 300KHz  
 Tolerance \_  $\pm$ 15%

DC Current \_ 2A to 20A

**BC Series**

CHOKE COILS



Size \_ 1005, 1104, 1305, 1306, 1506, 1806,  
 2006, 2310, 2711, 3311  
 Inductance Range \_ 30 $\mu$ H to 140 $\mu$ H  
 Test Frequency \_ 100KHz  
 Tolerance \_  $\pm$ 15%

RDC \_ 30m $\Omega$  to 71 $\Omega$   
 Turns \_ 24 to 40  
 Packaging \_ Tape, Bulk



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Note

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