

Adage's Passive Partner

2019



http://adagecomponents.com/

Our History

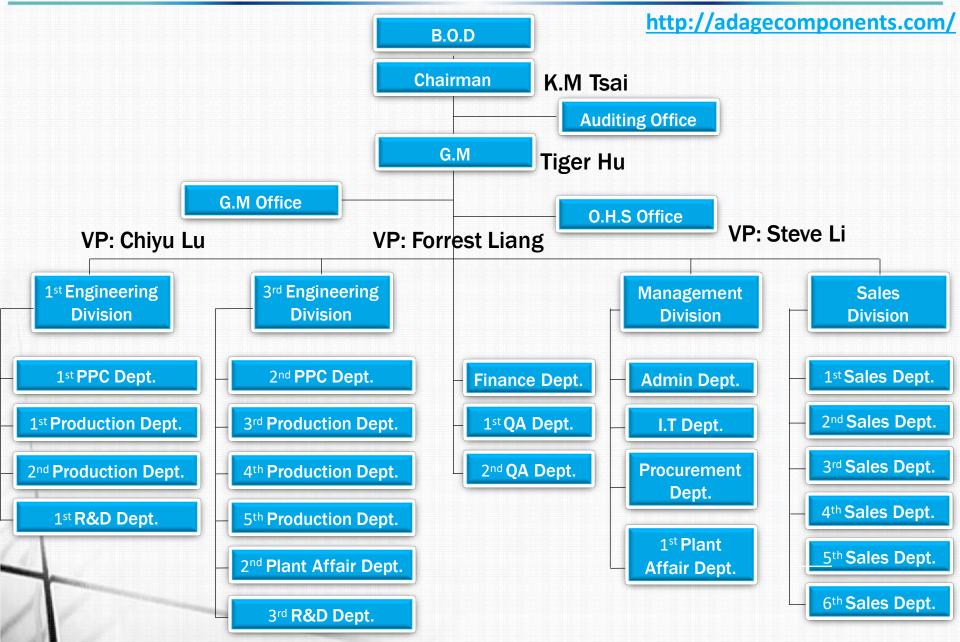
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•Established Hsin Chu Sc in October 1 •Developing Integrated H Devices.	ience Park 1997.	 ·ISO9001/1 TS16949 Ce · Set up Chi offices. Expansion : Ceramic Sub Manufacturi 	rtificated na Sales LED/Solar ostrate	01005 Resist MELF 0102, film Array. Expansion or Ceramic Substrate, thin/thick fil Resistor.	thin f	 Aimed Automotive Grade market, Wireless communications, and Power management market. 	Extension 250kkpcs CSR 85kk Metal Jun TaN thin 1 Green res VDA6.3 IATF1694	pcs, LR mper film sistor
1997	2001	2008~09	2010~12	2012-14	2015	5 2016/17	2018	2019
	Pilot Run and Mass Production : Thin Film Chip R, C, L Thin Film Foundry Service OEM/ODM.		America	assive Partner assive Partner))		Automotive Grade produ Metal strip h power 3W, CN anti-sulfu 01005, Adage's Pass Partner	cts, AR 3 high CSR Auto r, Thick ive High ISO1 Med Impr to au	nsion 50kkpcs 200kkpcs omotive k film 0kkpcs power .3485 lical rovement utomotive



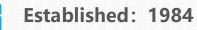
Organization





Adage's Passive Partner







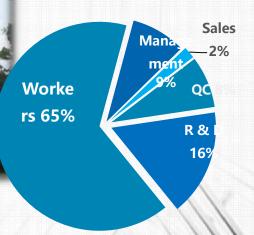
Address: No.18 Fenghua Road, Zhaoqing City,

Guangdong Province

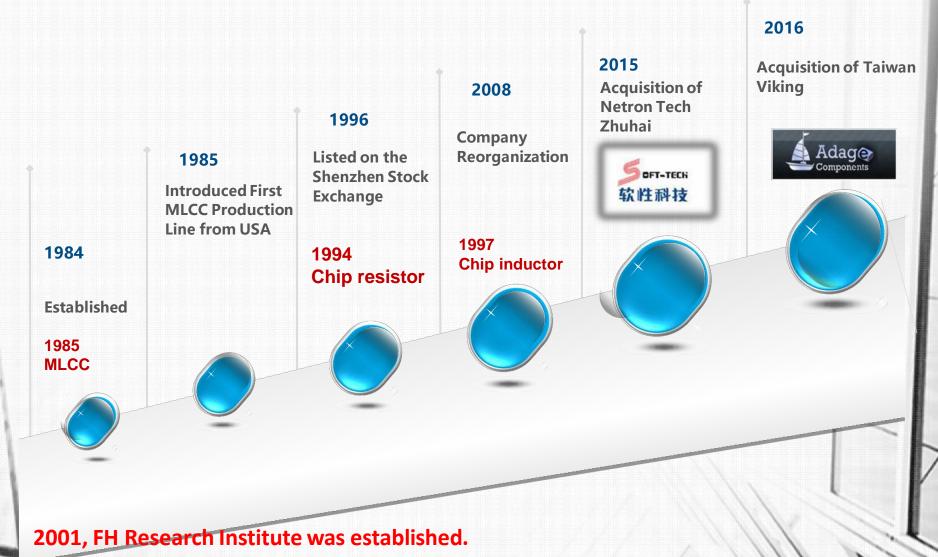
Listed on the Shenzhen Stock Exchange: 1996

Total Assets : About USD 1 Billion

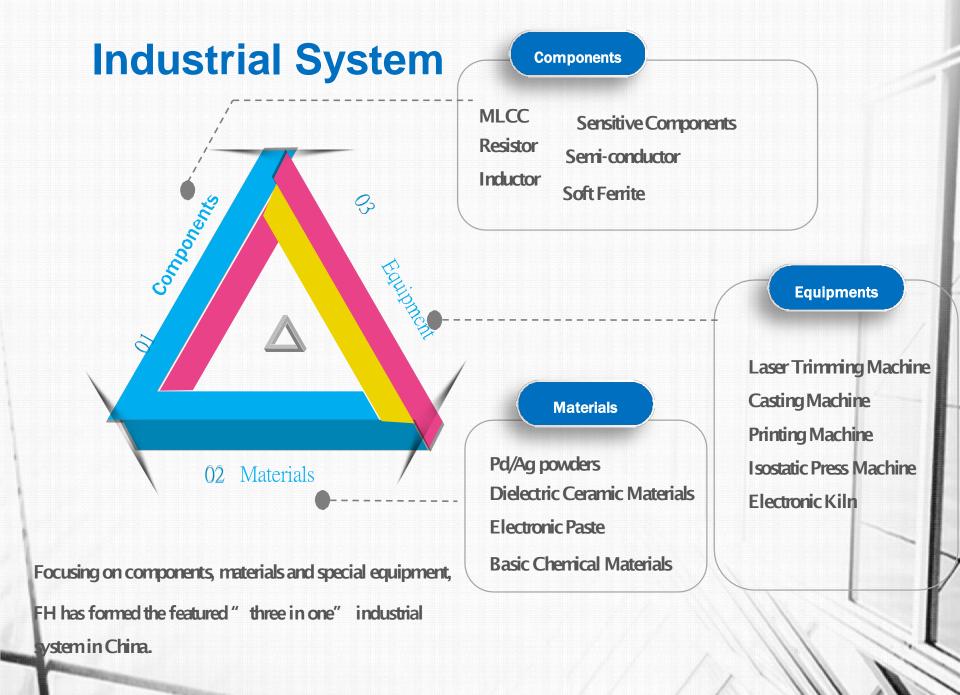
Total Employees : 6,915



Company Development History



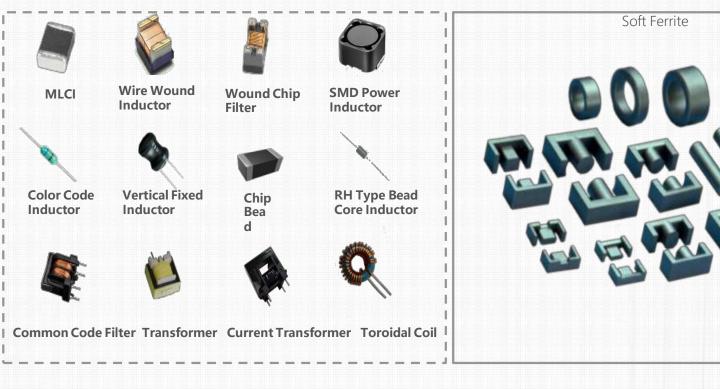
2015 Approved as a key LAB of advanced electronic component material and technology

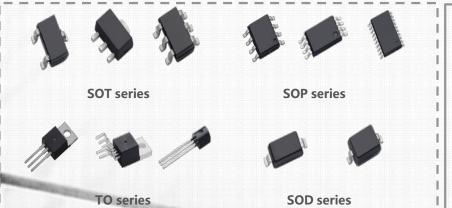


Product Family



Product Family









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Capabilities 01005 ~ 1812

Dimensions	capacity	%
01005	1.2 billion	0.8%
0201	6 billion	33.3%
0402	6 billion	33.3%
0603	2.4 billion	13.3%
0805	2.04 billion	11.3%
1206 & others	1.44 billion	8%
Total	18 billion	100%

Chip Resistor 45B/Month

MLCC current capacity is 18B/Month , will extend to 30B in 2 years.

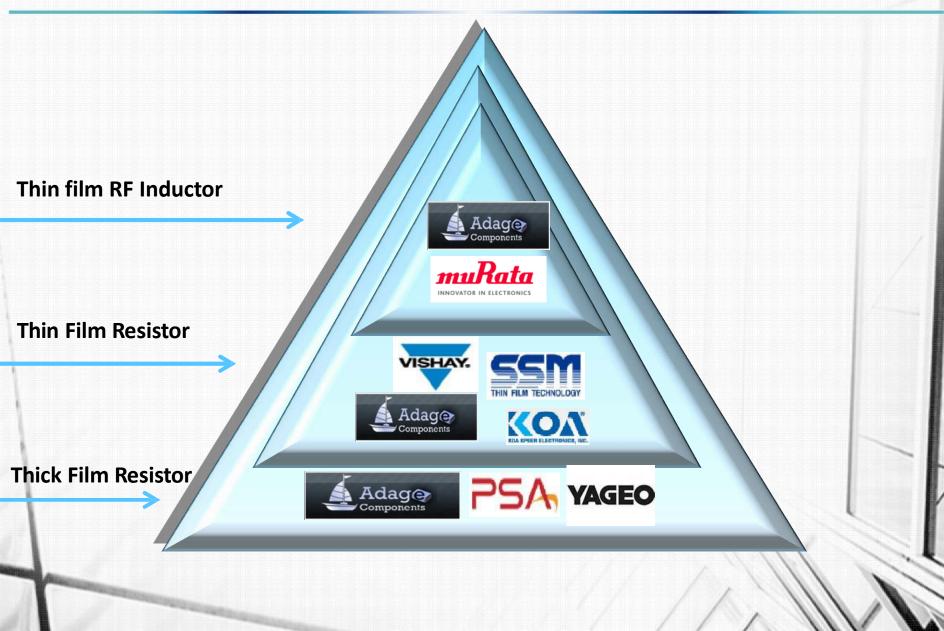
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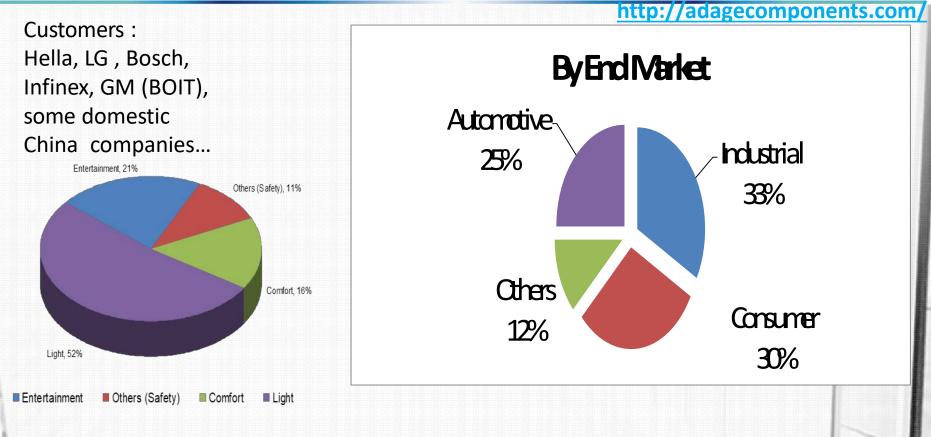


Market Position



Product Application Distribution

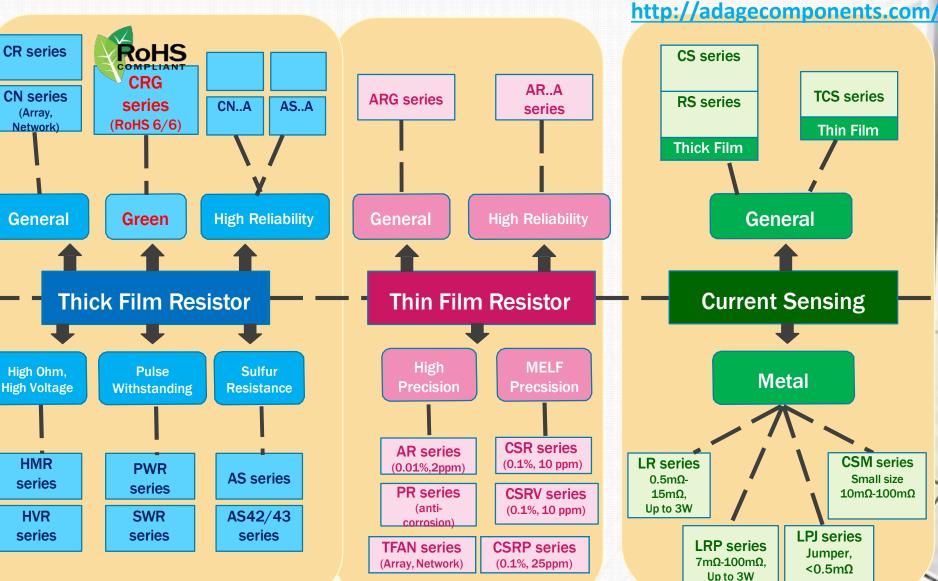




Industrial : Test Measurement equipment ,Energy ,Power and Controller. Consumer : Tablet PC, Personal Devices, Smart life, Automotive : Lights ,Car Entertainments, Car Key. ... Others (Aerospace / Military /Medical) : Communication system , Satellite, Personal Health Care.

Product portfolio- Chip Resistor

7



Product portfolio



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Thin Film Chip Resistor – ARG/AR/PR

ARG –General purpose AR- High Precision PR-Anti-Corrosive

AR..A- Automotive Grade



- Tight tolerance down to ±0.01%
- Extremely low TCR down to ±1,2,3,5 PPM
- Miniature size 0201 available
- High power is available

Applications

- Medical Equipment
- Testing / Measurement Equipment
- Printer Equipment, Automatic Equipment Controller
- Communication Device, Cell phone, GPS, PDA



	Standard	Higher Power Rating	
Size	0201~ 2512	0603~2512	
Power rating @ 70°C	1/32W~ 1/2W	1/10W~ 1W	
Tolerance	±0	.01% ~±1%	
TCR (PPM/°C)	TCR1/2/3/5~ TCR50		
Resistance Range	1Ω~ 3ΜΩ	4.7Ω~ 1ΜΩ	

AEC-Q200 Compliance Anti-sulfur

Product



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 High Po Long sid Resistar Available CS 1200 Applica Cellular SWPS (I 	R of ±100 PPM/ wer rating : 372 de terminations nce Values : 1m le size: 0201~25 6 10m-100moh	20 (1W), 7520 with higher po to 1 Ohm 512, 1225, 061 m 1W SC r, Charger, Ada	ower rating 2,3720, 75 CS1 ptor)	g 20) , 1225 (1W	[3W]	10-27mohm 30-100mohm	TCR400 TCR200
			ck Film F Long Ter				New	
CR-25 (1225)	2W Jumper: 10A	-55~+155°C	200V	40(ov —	10Ω – 20 0Ω (<20r		±100 -
CR-62 (0612)	0.75W	-55 ~ +155°C	200V	40	OV	1Ω~1M	Ω	±100

Product





Product



1

Features Metal F	Foil(Low C CSM)hm)	http://ada	agecomponents
 Small size to 0603 Resistance 10m Ohm - 100 m Ohm 	Product	Power	Resistance	TCR
Applications	CSM0603	1/8W	10-100mohm	100ppm
 LCD Monitor (For Power Management) SWPS (DC-DC Converter, Charger, 	CSM0805	1/4W	10-100mohm	50-100ppm
Adaptor ,Battery.	CSM1206	1/2W	10-100mohm	50-100ppm
Dimensions	CSM2010	3/4W	10-100mohm	50-100ppm
- Size : 0603,0805,1206, 2010, 2512	CSM2512	1W	10-100mohm	50-100ppm
New				

Metal Foil (Low Ohm) MF

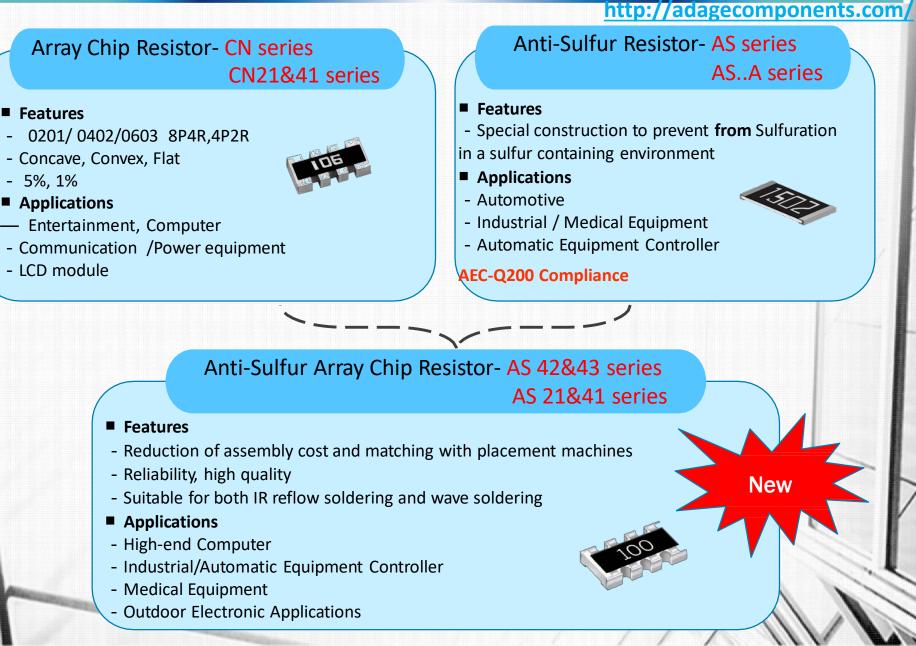
Features

- -Low TCR down to +/- 50/100 ppm/C
- -High Power Dissipation up to 1W
- -Resistance values from 3m Ohm -100 m Ohm
- Applications
- Power Management
- SWPS (DC-DC Converter, Charger, Adaptor ,Battery)
- Dimensions
- Size :0603,0805, 1206, 2010, 2512

Size	Power	Resistance	TCR
0603	1/2W	3m-30m	TCR
0805	1/2W,3/4W	3m-36m	50/100
1206	1/2w,1W	3m-56m	
2010	1W	3m-100m	
2512	1W,2W	3m-100m	

Product portfolio





Chip resistor



TCR

(PPM/°C

100ppm

200ppm

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 Fulse withstanding Resistor PWR/SWR Features 	ltem	Power Rating at	Resistance Range
- Tolerance from to ±0. 5%~5%	Туре	70°C	± 0.1% ~ ±1%
 High power rating Excellent pulse & surge withstanding performance 	0402	1/5W	10Ω-20ΜΩ
 Improved working voltage ratings Applications 	0603 0805	1/4W 2/5W	
- Metering(Testing/Measurement)	1206	1/3W	
- Medical devices	1210 2010	1/2W 3/4W	
- Automotive High power is available	2512	1.5W	

High Voltage Chip Resistor HVR

Duleo Withstanding Desistor DWD/SWD

- Features
- Highly reliable multilayer electrode construction
- Higher component and equipment reliability
- Excellent performance at high voltage
- Reduced size of final equipment
- Applications
- Inverter
- Outdoor Equipments
- Converter
- Automotive Industry
- High Pulse Equipment

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ltem	Power Rating at 70°C	Resistance Range
Туре	Max Overload	±1% , ±5%
0402	200V	30ΚΩ-100ΜΩ
0603	400V	
0805	800V	
1206	1000V	TCR100~400ppm
2010	3000V	
2512	4000V	

Chip resistor

General Chip Resistor CR, HMR

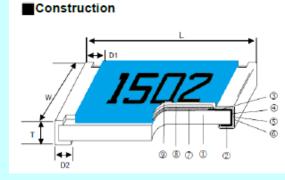


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•		•		TOD
	Item	Power	Resistance Range	TCR
 Features Tolerance from to ±0.1%~5% 	Туре	Rating at 70°C	±0.1%~ ±1%	(PPM/°C)
- High power rating	01005	1/32w	1Ω-100ΜΩ	50ppm
- Excellent pulse & surge withstanding performance	0201	1/20w	110-1Gohm	100ppm
- Improved working voltage ratings	0402	1/8W		
 Applications 	0603	1/4W		
- Metering(Testing/Measurement)	0805	1/3W		
- Medical devices	1206	1/2W		200ppm
- Automotive	1210	1/2W		
High power / High Ohm/Low TC 50ppm	2010	1W		
	2512	2W		

Green Thick film Resistor CRG

For 100% Pb Free , without RoHS Exemption 0402/0603/0805/1206/1210/2010/2512 1-10Mohm



MELF resistor

- Excellent overall stability

Miniature size 0102 available

- Tight tolerance down to ±0.1%

- High power rating up to 1 Watt

- Extremely low TCR down to ±10 PPM/°C



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- Applications
- Automotive
- Telecommunication
- Medical Equipment



CSR series

Features

ltem	Power rating at	Resistance Range	TCR (PPM/°C)
Туре	70C	±0.1%~ ±5%	
0204	1/4W	1Ω - 10ΜΩ	±10~ ±100
0207	1/2W		
	1W		

CSRV series

Item	Power rating	Resist	
	at 70C	ance	CR
		Range	(P
			Р
			M
			°c
Туре		±0.	
		1%	
		~	
		±5	
		%	
0102	1/8W, <mark>1/5W</mark>	8.2	±10~ ±10
0204	1/4W, <mark>2/5W</mark>	Ω-	

AEC-Q200 Compliance Anti-Sulfur is ok

Vishay's MMA/MMB/MMU

CSRP series High Voltage

Item Power rating at Type 70C		Resistance Range ±0.5%~ ±5%	Max. operating Voltage	TCR (PPM/ [°] C)
0204	2/5W	340ΚΩ - 3ΜΩ	500V	±25~ ±50
0207	1W		1000V	

Extension to 3.4M TC25



Power resistor





With desirable thermal performance, the TR/STR Series is intended for high power electronic circuits from 20W to 100W.

Packages includes TO220/263 and TO247(Dpack), which is small in size to help with cost reduction, limited space requirement and to simplify the board layout.

Applications for STR/TR Series include power supply, specially hig. voltage power supply circuits, inverter/converter, and UPS in automotive, industrial and military



	Viking	Vishay	Ohmite	тт
	TR20		TAH20	MHP20
TO220	TR30	LTO30	ТВН30	MHP30
	TR35		ТСН35	MHP35
TO263	STR35	D2TO35	TDH35	SMHP35
TO220	TR50	LTO50		MHP50
10220	TR50H			
TO247	TR100	LTO100	TEH100	MHP100

Product overview- Inductor



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RF Inductor

Thin Film Chip Inductor- AL Series Multilayer Chip Inductor- CL-S Series Wire Wound Chip Inductors- WL Series **IF** Filter

Multilayer Chip Inductor(Ferrite) - ML Series Wound Chip Inductors(Ferrite) - NL FMI

Multilayer Chip Beads- CB Series Chip Common Mode Coke- CM Miniature

Miniature- SDIA/VLH Series **Power Inductor**

Wire wound type- MLP(H) series

*Non-shielded- PDH/PD/PCD 🌑 🥌

Shielded-

PS/PCS/PCDR/PCDS/PSDB/SCDS/SCDA/SCDR/PCF/PDPH/ SDRH/SDB Dip- DRGH/DRGR











Ceramic chip inductor

Thin Film Inductor-AL

Applications

RF Module : Wireless Fidelity 、 BT 、 SGM 、 CDMA、 GPS、 Router、 Smart Phone Voltage Control Oscillator 、 LED Sensor Module 、 Radio 、FSK、ASK、Radar SIP、LED backlight 、LCM Driver Measuring Instrument Household Appliancesh Q, high Current is available

Features

- Photo lithographic single layer ceramic chip
- High SRF, excellent Q, superior temperature stability
- Tight tolerance. of ± 1% or ± 0.1nH
- Highly stable design for critical needs

Dimensions

- 01005 : Tolerance ±0.1nH Inductance 0.3nH~1.5nH
- 0201 : Tolerance ±0.1nH~5%, Inductance 0.1nH~10nH
- 0402 : Tolerance ±0.1nH~5%, Inductance 0.2nH~33nH













Ceramic RF chip inductor



http://adagecomponents.com/

Multilayer Inductor-CL-S

Features

- Tolerance of 2% ,5% or 0.3nH
- For High Frequency Application (~10GHZ)

D i m e nsions

- 0201 : Tolerance ±0.1nH~2%, 5%, Inductance
 0.3nH~56nH
- 0402 : Tolerance ±0.3nH~10%, Inductance 1nH~150nH
- 0603 : Tolerance ±0.3nH~10%, Inductance 1nH~220nH

Applications

WLAN & RF Module :DVB-T、SGM Cellular Phone、 Radio 、 Measuring Instrument Router 、 Motherboard、 Notebook Security System



Ceramic RF chip inductor



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Wire wound chip Inductor-WL

Features

- Low profile , high current are available
- Highest possible SRFs as well as excellent Q values
- Tight tolerance down to +/-2%

Dimensions

- Size : 0402,0603,0805,1008,1206
- High Current / High Q : 0402, 0603 ,0805 ,1008

Applications

- Cellular Phone 、 Pager、 GPS

High Freq. Communication Products

- Wireless Router、 Industry Computer Notebook







Ferrite Chip Inductor



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Multilayer chip Inductor-ML

High Current is available

Features

- Suitable for high density installation and re-flow soldering
- Closed magnetic circuit avoids crosstalk
- D i m e nsions
- 0603

±10%/±20%, 10nH~10uH

- 0805
 ±10%/±20%, 47nH~22uH
- 1206

±10%/±20%, 47nH~33uH

Applications

- Notebook、Monitor 、 PC 、 DVD 、 HD、

TV 、Video Camera



Power Inductor



Wire Wound Type Power Inductor-MLP(H) series

Size	Inductance ±20%	
0806	0.24uH- 2.2uH	New
1004	0.33uH- 4.7uH	
1008	0.47uH- 4.7uH	

High Current is available

- High saturation current realized by material properties and structure design
- Low DC resistance to achieve high conversion efficiency and lower temperature rising
- Magnetically shielded structure to accomplish high resolution in EMC protection
- Halogen free, Lead Free, RoHS Compliance

Applications

Features

- Smart phone, PAD
- Thin-type power supply module
- DC-DC Converters

Viking	Murata/ TOKO	ТДК	Cyntec	Taiyo	Wurth	
MLP06	1285AS (DFE201610C)/ DFE201610R	VLS201610HBX	PIFE20161T	MAKK2016	WE-PMCI 74479276xxx	
MLP04	1269AS (DFE252010C)/ DFE252010R	VLS252010HBX	PIFE25201T	MAKK2520	-	
MLP08	1239AS (DFE252012C)/ DEF252012R	VLS252012HBX	PIFE25201B	MAMK2520		
MLP06(H)	DFE201610P	TFM2016GHM	-	-	-	
MLP04(H)	DFE252010P				WE-PMCI 74479287xxx 74479288xxx	
MLP08(H)	DFE252012P				-	

Chip Inductor Cross Reference

Туре	RF Inductor	Equivalent series					
.,,,,,,	Viking P/N	Murata	TDK	токо	Coil craft	Taiyo-Yuden	KOA
Thin film	AL0201(0603)	LQP03T	-	-	-	-	KL731H (0603)
Thin film	AL0402(1005)	LQP15M/T	-	-	-	-	KL731E(1005)
Thin film	AL0603(1608)	LQP18M	-	-	-	-	KL731J(1608)
Multilayer	CL0402 (1005)	LQG15H	MLG1005	LL1005	-	HK1005	MHL1E(1005)
Multilayer	CL0603(1608)	LQG18H	MLG1608	LL1608	-	HK1608	MHL1J(1608)
Multilayer	CL0805(2012)	-	-	LL2012	-	HK2015	-
Ceramic/Wire Wound	WL0402(1005)	LQW15A	-	LLQ1005	0402CS	-	KQT0402
Ceramic/Wire Wound	WL0603(1608)	LQW18A	-	LLQ1608	0603CS/HC	-	KQ0603/KQC
Ceramic/Wire Wound	WL0805(2012)	LQW2BH	-	LLQ2012	0805CS/HQ/HT	-	KQ0805
Ceramic/Wire Wound	WL1008(2520)	-	-	-	1008CS/HQ/HT	-	KQ1008
Ceramic/Wire Wound	WL1206(3216)	LQW31H	-	-	1206CS	-	-
Ferrite /Wire wound	NL05(2012)	-		-	0805LS	LB2012	-
Ferrite /Wire wound	NL08(2520)	-	NLV25T	LLM2520	1008LS	LB2518	-
Ferrite /Wire wound	NL10(3225)	-	NLV32T	LLM3225	-	LB3218	-
Ferrite /Wire wound	NL12(4532)	-	NL453232T	-	1812LS	-	KL32
Ferrite /Wire wound	NL20(5650)	-	NL565050T	-	-	-	-
Multilayer/Ferrite	ML0603(1608)	LQM18N	MLF1608	-	-	LK1608	MCL1J
Multilayer/Ferrite	ML0805(2012)	LQM21N	MLF2012	-	-	LK2125	MCL2A
Multilayer/Ferrite	ML1206(3216)	-	-	-	-	-	MCL2B

Multilayer Chip Capacitor



Features

- A wide selection of sizes is available
- High capacitance in given case size
- Capacitor with lead-free termination
- AEC-Q200 requirement



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- Applications
- For Navigation & Information Equipment
- For Entertainment Equipment
- For Comfortable Equipment
- For Automotive Electronic Equipment

MC series

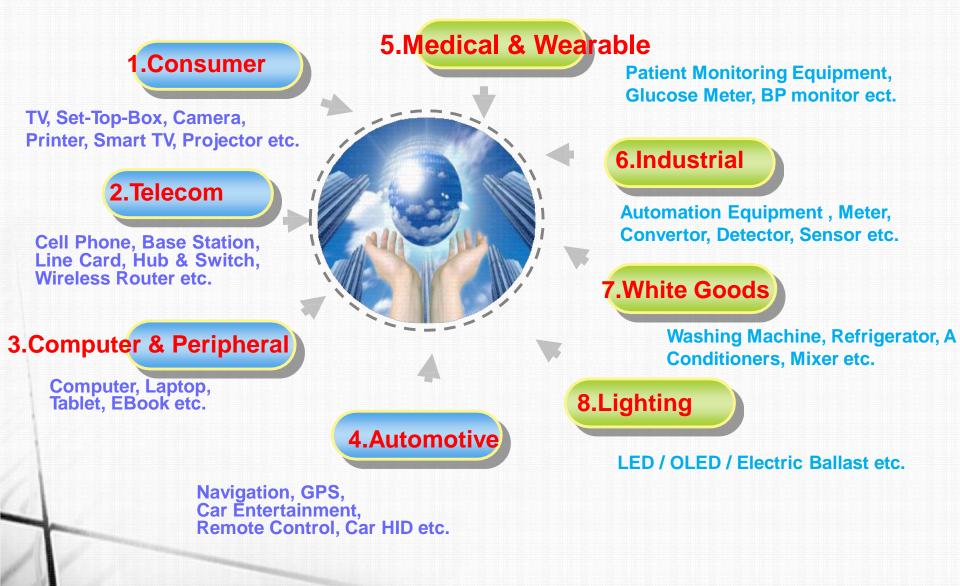
PN	Size	Voltage	Tolerance	Dielectric
MC01	0201	6.3V~50V	±0.1pF~±0.5pF,	NPO/X7R/X5R
MC02	0402	10V~50V		NPO/X7R/X6R/Y5V 0.5pF~100uF
MC03	0603	6.3V~250V	±10%~20%,	
MC05	0805	6.3V~630V	+80/20%	
MC06	1206	6.3V~2000V	1	
MC10	1210	6.3V~2000V	1	
MC08	1808	6.3V~3000V	1	
MC12	1812	6.3V~3000V		
MCHL	High Q and Low ESR			NPO
MCRF	Ultra High Q,Low ESR			
MCLI	Low Inductance			X7R

AEC-Q200

Automotive Availability

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Adage's Passive Partner Application gateway is categorized into 8 major market segments:



Marketing Trend

IATF 16949 , AEC-Q200 AUTOMOTIVE AVAILABILITY

Automotive Grade Products

Quality Assurance

- ✓ AEC-Q200 Compliance
- ✓ IATF-16949 certified production sites
- ✓ High reliability with VDA6.3
- ✓ Certified with Equipment and employees to manufacture automotive products.
- ✓ Commitment to providing zero-defect TASK products
 ✓ PPAP available.
- ✓ Using special function code "A" to distinguish from general products.



Certificate of Registration

照與電感的設計與製造

adagecomponents.com

无倾斜线股份有限公司

竹工業區工業五路231

Automotive Grade Products



http://adagecomponents.com/ AEC-Q200 Compliance

	Resisto	5				
Series		Product	Resistance range	Tolerance	TCR (ppm/°C)	Size
	ARA 🏴	Automotive Grade Thin Film Chip Resistor	10Ω ~ 1ΜΩ	0.05% ~ 1%	±10~±50	0402 ~ 2512
	CRA	Automotive Grade Thick Film Chip Resistor	1Ω ~ 10ΜΩ	1%, 5%	±100, ±200 ±400	0402 ~ 2512
	CSA	Automotive Grade Current Sensing Chip Resistor	0.003Ω ~ 1Ω	1%, 2%, 5%	±100~±600	0402 ~2512 1225/3720/7520
	ASA	Automotive Grade Anti-Sulfur Chip Resistor	1 Ω ~ 10MΩ	0.5%, 1%, 5%	±100, ±200	0402 ~ 2512
	CNA	Automotive Grade Thick Film Array Chip Resistor	10Ω ~ 1ΜΩ	1%, 5%	±200	0402/0603 8P4R
	CSRV 🄎	Metal Film Precision Resistor (AEC-Q200 Compliance)	1Ω ~ 1ΜΩ	0.1% ~ 5%	±10~±100	0204, 0207
1						

Inductors AECQ-200

Desistant

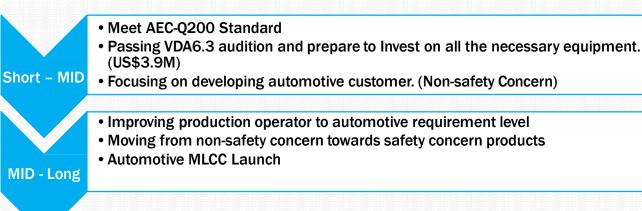
	Series	Product	Inductance range	Tolerance	Size
101000000000000000000000000000000000000	WL 🥯	Wire Wound Inductor (AEC-Q200 Compliance)	1nH ~ 15000nH	0.2nH~10%	0402, 0603, 0805, 1008
	CLS	Multilayer Ceramic	1-680nH	5%	0201/0402/0 603

Business Strategy



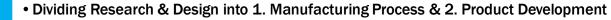
Automotive Market

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High-End Market

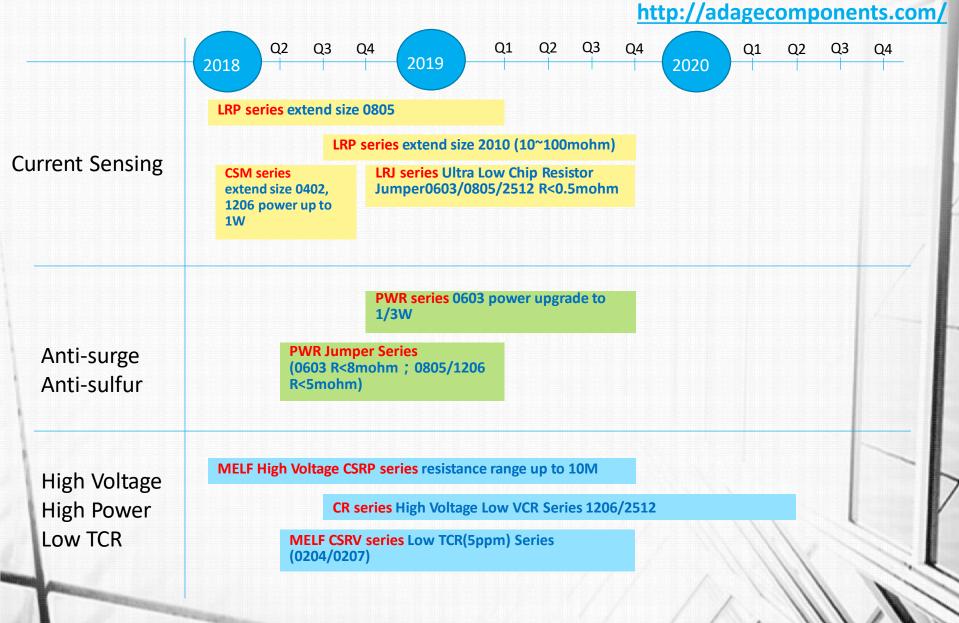
MID - Long



- Upgrading all the current products
- Short MID Increasing R&D Engineers
 - Purchasing all the necessary equipment based on product requirement.
 - Taking Tier one Manufacturer as our reference for developing new product
 - Develop customized product based on customer requirement which create a barrier to prevent Substitute

Development Roadmap 2018-2020

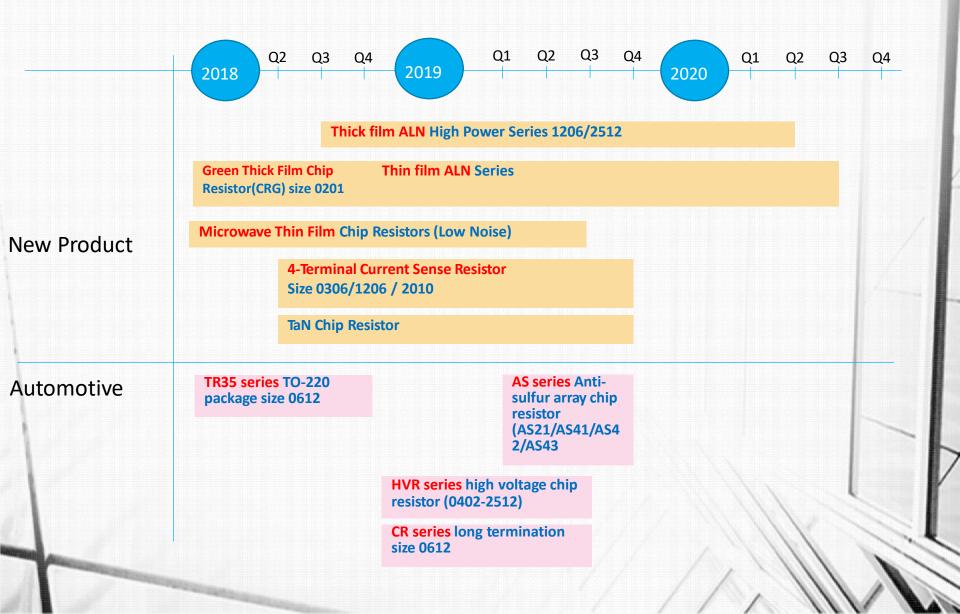




Development Roadmap 2018~2020



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Business Activities







Business Activities



Why Choose Adage Adage

ttt



Advanced ,Experienced Thin/Thick Film Wirewound Technology

Quick Turnaround Time and Response

Flexible Extension Sufficient Capacity

Wide Rang Products, **Excellent** Technical Support

On Public Company Superior Management High Yield, Cost Effective

Short Lead time and Free Sample Support

Well -Organized, ERP System, TS16949 QA System

Extensive RD Team, Miniature Size, High Power, New Product Development



Thank you !





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