

Search query (2): fn=(49959316 or 49959316 or 51796867 or 51796867 or 67376407 or 67376407 or 32711851 or 28553780 or 28553780 or 32711851 or 32711851 or 28553780 or 28553780 or 30827218 or 31394561 or 28553780 or 34457896 or 31394561 or 42615810 or 51796867 or 30827218 or 31394561 or 31394561 or 28553780 or 34457896 or 42615810 or 28553780 or 51796867 or 28553780 or 32711851 or 15222399 or 10662582 or 8981320 or 10378290 or 15182438 or 10060539 or 13680177 or 28120046 or 28120046)

Results: 17

1) Family number: 28120046 (US2001000215A)

© PatBase

Title: CHIP DEVICE, AND METHOD OF MAKING THE SAME

Abstract: A chip device and a manufacturing method therefor are disclosed, in which the resistivity of the chip resistor device is constantly maintained even without using silver for lowering the self resistance in portions other than the upper electrode, thereby curtailing the manufacturing cost of the chip resistor. The chip resistor device 1 includes a chip block 10 having an upper face 12 and a pair of mutually oppositely facing side faces 14. An electrode part 20 has an upper electrode 22 formed on the upper face 12 of the chip block 10, and a side electrode 24 formed on the side faces 14 of the chip block 10. A special electrical property layer 30 is connected to the upper electrode 22 of the chip block 10. A protecting layer 40 is formed upon the special electrical property layer 30 to protect it. A terminal electrode layer 50 is formed on the electrode part 20 of the chip block 10, and a terminal connection part S is necessarily provided to form a signal bypassing path. In this chip device, even without using silver in the electrodes other than the upper electrode, the resistance characteristics of the chip resistor device are maintained constantly, so as to make it possible to save the manufacturing cost.

Classifications:

International (IPC 8-9): H01C1/01 H01C1/14 H01C1/142 H01C1/148 H01C17/00 H01C17/06 H01C7/00 H01C7/18

H01L21/02 (Advanced/Invention);
H01C1/14 (Advanced/Non-invention)

International (IPC 1-7): H01C1/01 H01C1/012 H01C1/14 H01C17/06 H01C7/00 H01L21/02

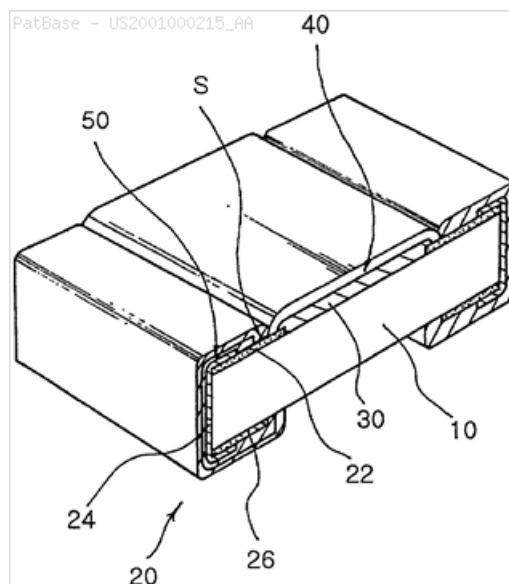
CPC: H01C1/148 H01C7/18 H01C17/006

European: H01C1/148 H01C17/00F H01C7/18

US: 338/306 338/306P 338/309 338/309S 338/313 338/332

JP F-Term: 5E028 5E028/BA04 5E028/BB01 5E028/CA01 5E028/EB02 5E028/JC03 5E028/JC07 5E028/JC12 5E032 5E032/BA07 5E032/BA25 5E032/BB01 5E032/CA02 5E032/CC03 5E032/CC06 5E032/CC14 5E032/CC16 5E032/CC18 5E033 5E033/AA27 5E033/BB02 5E033/BC01 5E033/BD01 5E033/BE02 5E033/BF05 5E033/BG02 5E033/BG03 5E033/BH02

JP F-Index: H01C1/142 H01C17/06/B H01C17/06/P H01C17/06S/110 H01C17/06S/500 H01C7/00/B H01C7/00/110



Family:

Publication number	Publication date	Application number	Application date
JP2000223301 A2	20000811	JP19990325449	19991116
JP3462438 B2	20031105	JP19990325449	19991116
KR100328255 B1	20020316	KR19990038950	19990913
KR20000052325 A	20000816	KR19990038950	19990913
TW445509 B	20010711	TW19990119725	19991111
US2001000215 AA	20010412	US20000730240	20001205
US6359546 BA	20020319	US19990436822	19991109

Priority:

KR19990002499 19990127 KR19990038950 19990913 US19990436822 19991109
US20000730240 20001205

Probable Assignee: SAMSUNG ELECTRO MECHANICS CO LTD

Assignee(s): (std): SAMSUNG ELECTRO MECH

Assignee(s): SAMSUNG ELECTRO MECH CO LTD ; SAMSUNG ELECTRO MECHANICS CO ; SAMSUNG ELECTRO MECHANICS CO LTD ; OH SOON HEE

Inventor(s): (std): OH SOON HEE ; OH SUN HEE ; GO JUNKI

Inventor(s): SOON HEE OH

Agent(s): RENNER OTTO BOISSELLE AND SKLAR LLP

2) Family number: 13680177 (JP8213203A)

© PatBase

Title: CHIP RESISTOR

Abstract: PURPOSE: To obtain a ground layer of which coating film is excellent in surface condition and platability by a method wherein the ground layer contains scaly silver powder and specific spherical conductive particles in a specific ratio as conductive particles. CONSTITUTION: Conductive paste which contains one or more kinds of conductive particles and one or more kinds of thermosetting resin is applied onto a resistor and cured for the formation of a terminal electrode ground layer 6, so that 5 to 70 percent by volume of the conductive particles is of scaly silver powder. Or, 20 to 60 percent by volume of the conductive particles is of spherical silver powder 0.3 to 10 micro m in grain diameter. Furthermore, 5 to 30 percent by volume of spherical silver particles 0.05 to 0.2 micro m in grain diameter or 5 to 15 percent by volume of at least one of nickel, copper, stainless steel or carbon black is used as coloring conductive particles. By this setup, the ground layer 6 is enhanced in coating surface condition and platability, and it is easily judged that conductive paste is applied well or not.

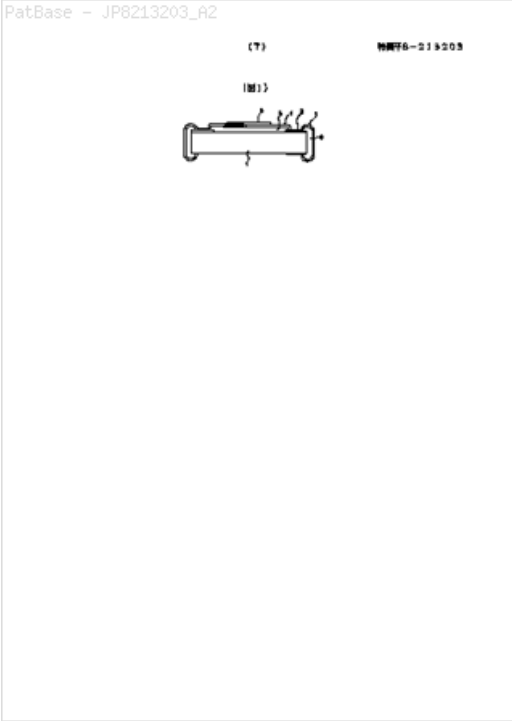
Classifications:

International (IPC 8-9): H01C1/148 H01C7/00 (Advanced/Invention);
H01C1/14 H01C7/00 (Core/Invention)

International (IPC 1-7): H01C1/148 H01C7/00

JP F-Term: 5E028 5E028/AA10 5E028/BA04 5E028/BB01 5E028/CA02
5E028/DA00 5E028/JA00 5E028/JB00 5E028/JC01 5E028/JC02
5E028/JC03 5E028/JC06 5E028/JC07 5E028/JC12 5E033 5E033/AA18
5E033/AA27 5E033/BB02 5E033/BC01 5E033/BD01 5E033/BE01
5E033/BF05 5E033/BG03 5E033/BH02

JP F-Index: H01C1/148/A H01C7/00/B H01C7/00/110



Family:

Publication number	Publication date	Application number	Application date
JP3686442 B2	20050824	JP19950017770	19950206
JP8213203 A2	19960820	JP19950017770	19950206

Priority:

JP19950017770 19950206

Probable Assignee:

NAMITSUKUSU KK

Assignee(s): (std):

NAMITSUKUSU KK

Assignee(s):

NAMICS CO

Inventor(s): (std):

YOSHIMURA HIROKI ; ABE SHINICHI

3) Family number: 30827218 (US2004164841A)

© PatBase

Title: CHIP RESISTOR

Abstract: A chip resistor includes an insulating chip substrate, a resistor film formed on the substrate, a pair of upper electrodes formed from silver paste to be connected to the resistor film, a cover coat covering the resistor film, an auxiliary electrode formed on each of the upper electrodes to partially overlap the cover coat, a side electrode formed on each of the side surfaces of the substrate to be connected to the upper electrode and the auxiliary electrode, a nickel-plated layer covering the auxiliary electrode and the side electrode, and a soldering layer covering the nickel-plated layer. The side electrode is made from nonmagnetic conductive resin paste, whereas the auxiliary upper electrode is made from carbon-based conductive resin paste.

Classifications:

International (IPC 8-9): H01C1/01 H01C1/012 H01C1/142 H01C17/00
H01C17/28 H01C7/00 (Advanced/Invention);
H01C1/01 H01C1/14 H01C17/00 H01C17/28 H01C7/00 (Core/Invention)

International (IPC 1-7): H01C1/012 H01C7/00

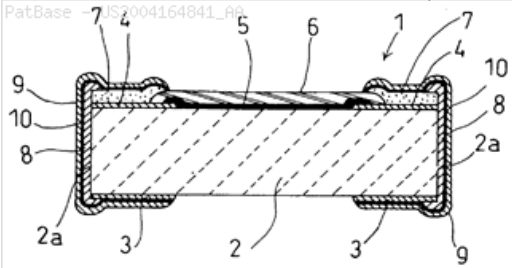
CPC: H01C1/142 H01C7/003 H01C17/006 H01C17/281

European: H01C1/142 H01C7/00F H01C17/28B H01C7/00D

US: 338/309 338/313 338/332

JP F-Term: 5E033 5E033/BA01 5E033/BC01 5E033/BE01 5E033/BG02
5E033/BH01

JP F-Index: H01C7/00/B H01C7/00/110



Family:

Publication number	Publication date	Application number	Application date
CN1525496 A	20040901	CN200410005587	20040218

JP2004259864 A2	20040916	JP20030047518	20030225
US2004164841 AA	20040826	US20040786386	20040223
US6982624 BB	20060103	US20040786386	20040223

Priority:

JP20030047518 20030225

Probable Assignee: ROHM CO LTD

Assignee(s): (std): ROHM CO LTD

Assignee(s): ROHM CO

Inventor(s): (std): DOI MASATO ; KURIYAMA TAKAHIRO ; MASATO KURIYAMA TAKAHIRO SAITO ; SAITO DAISUKE ; KURIYAMA HISAHIRO

Inventor(s): KURIYAMA TAKAHIRO SAITO DAISUKE DOI MASATO

Agent(s): HAMRE SCHUMANN MUELLER AND LARSON PC

4) Family number: 10378290 (US5441788A)

© PatBase

Title: METHOD OF PREPARING RECORDING MEDIA FOR A DISK DRIVE AND DISK DRIVE RECORDING MEDIA

Abstract: A magnetic recording disk has a layered structure comprising a metal substrate, a layer of NiP atop the metal substrate, the NiP layer having a surface roughness of less than 2.0 nanometers RMS, a metal layer over the polished NiP layer, the metal layer having a desired textured outer surface as a result of the sputter deposition, the textured outer surface being characterized by a cobblestone-like metallic grain structure with between 10 and 100 grains per square micron, an RMS surface roughness of between 1.0 and 8.0 nanometers, and with peak heights as measured from the mean plane of the surface over a 10 micron square area of between 2.0 and 20.0 nanometers, a magnetic layer atop the metal layer.

Classifications:

International (IPC 8-9): G11B5/73 G11B5/738 G11B5/82

G11B5/84 (Advanced/Invention);

G11B5/62 G11B5/82 G11B5/84 (Core/Invention)

International (IPC 1-7): B32B3/02 B32B3/10 G11B5/64 G11B5/66

G11B5/82 G11B5/84

CPC: Y10S428/90 Y10T428/12465 Y10T428/12736 Y10T428/12743

Y10T428/1275 Y10T428/12764 Y10T428/12806 Y10T428/12847

Y10T428/12854 Y10T428/24355 Y10T428/265 Y10T428/31 G11B5/7325

G11B5/8404

European: G11B5/64B G11B5/73N3 G11B5/84B

US: 428/141 428/336 428/409 428/611 428/65.6 428/650 428/651

428/652 428/654 428/660 428/666 428/667 428/694SG 428/694T

428/694TR 428/694TS 428/831.2 428/900 G9B/5.288 G9B/5.299

JP F-Term: 5D006 5D006/CA02 5D006/DA03 5D006/DA04 5D006/EA02

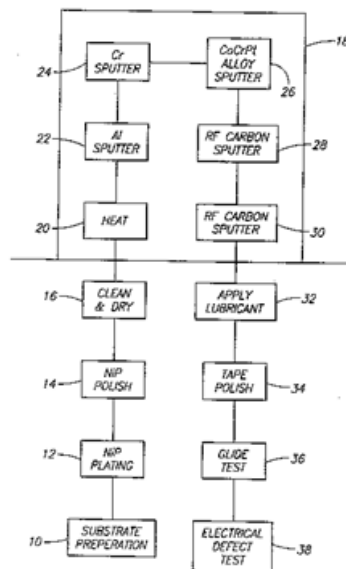
5D006/FA05 5D112 5D112/AA03 5D112/AA24 5D112/BD03 5D112/EE01

5D112/GB06

JP F-Index: G11B5/738 G11B5/82 G11B5/84/A

PatBase - US5441788_A

U.S. Patent Aug. 16, 1995 Sheet 1 of 2 5,441,788



Family:

Publication number	Publication date	Application number	Application date
EP0651380 A1	19950503	EP19940110411	19940705
JP7192257 A2	19950728	JP19940292270	19941101
US5441788 A	19950815	US19930148136	19931103

Priority:

US19930148136 19931103

Probable Assignee: HEWLETT PACKARD CO

Assignee(s): (std): HEWLETT PACKARD CO

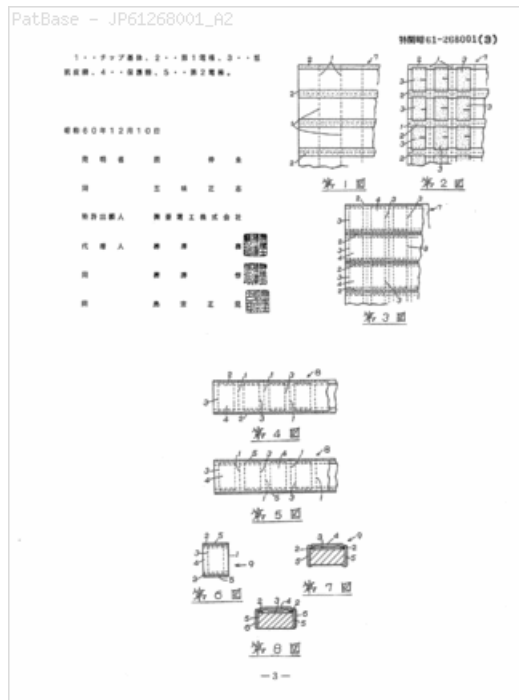
Assignee(s): HEWLETT PACKARD COMPANY ; HP INC

Inventor(s): (std): AGARWAL ARUN K ; ARAN KEI AGAAUORU ; BLOOMQUIST DARREL R ; DARERU AARU BURUUMUKUISUTO ; HOWE STEPHAN P ; SUTEIIBUN PII HAU

Designated states: DE FR GB IT

5) Family number: 49959316 (US2011285498A)

© PatBase



Family:

Publication number	Publication date	Application number	Application date
JP61268001 A2	19861127	JP19850277558	19851210

Priority:

JP19840279810 19841228

Probable Assignee: KOA CORP

Assignee(s): (std): KOA CORP

Inventor(s): (std): GOMI MASASHI ; HARA NOBUYOSHI

7) Family number: 15222399 (JP10121012A)

© PatBase

Title: CONDUCTIVE RESIN PASTE AND SEMICONDUCTOR DEVICE PREPARED USING THE SAME

Abstract: PROBLEM TO BE SOLVED: To provide a conductive resin paste which possesses good electrical conductivity and wet-spreadability and has low ionic impurity content by incorporating a spherical silver powder, an epoxy resin, an org. filler, and γ-glycidioxypropyltrimethoxysilane as indispensable ingredients. SOLUTION: This conductive resin paste comprises: 30 to 80 weight percent spherical silver powder having an average particle diameter of not more than 5 micro m; 5 to 30 weight percent org. filler, with an average particle diameter of 5 to 30 micro m, having thereon a metallic surface coating; and 0.01 to 8 weight percent γ-glycidioxypropyltrimethoxysilane(GTS). The epoxy resin is liq. at room temp. Pref., the org. filler is made of a thermosetting resin, such as an epoxy resin. A carbonized filler and carbon are also pref. Metals usable for the metallic coating include gold, silver, nickel, and copper. For GTS, a methoxy group as the terminal group is demethanolized upon heating to cause self-condensation, offering high heat resistance. Solder, when heated to a temp. above the m.p. (350 deg.C), becomes liq., making it impossible to conduct soldering. By contrast, in the case of GTS, bonding can be carried out even at a temp. of 350 deg.C or above in one to 2min.

Classifications:

International (IPC 8-9): C08K13/06 C09C3/06 C09J11/00 C09J163/00 C09J9/02 H01L21/52 (Advanced/Invention); C08K13/00 C09C3/06 C09J11/00 C09J163/00 C09J9/00 H01L21/02 (Core/Invention)

International (IPC 1-7): C08K13/06 C08K3/08 C08K5/54 C08K7/16 C08K9/02 C09C3/06 C09J11/00 C09J161/06 C09J163/00 C09J9/02 H01L21/52

JP F-Term: 4J002 4J002/CC03/2 4J002/CD01/1 4J002/CD02/1 4J002/CD03/1 4J002/CD05/1 4J002/CD06/1 4J002/DA03/7 4J002/DA07/6 4J002/EX06/8 4J002/FD01/7 4J002/FD11/2 4J002/FD11/6 4J002/FD11/7 4J002/GJ01 4J002/HA06 4J037 4J037/AA02 4J037/AA04 4J037/AA30 4J037/CA03 4J037/CB11 4J037/CB23 4J037/CB26 4J037/CC23 4J037/DD05 4J037/DD12 4J037/EE03 4J037/EE12 4J037/FF11 4J037/FF30 4J040 4J040/EB03/2 4J040/EC00/1 4J040/EC03/1 4J040/EC05/1 4J040/EC06/1 4J040/EC07/1 4J040/EC26/1 4J040/HA02/6 4J040/HA06/6 4J040/HD35 4J040/JA05 4J040/JB10 4J040/KA02 4J040/KA03 4J040/KA07 4J040/KA16 4J040/KA24 4J040/KA32 4J040/KA42 4J040/LA06 4J040/NA20 5F047 5F047/BA15 5F047/BA21 5F047/BA34 5F047/BA35 5F047/BB11 5F047/BC26

JP F-Index: C08K13/06 C09C3/06 C09J11/00 C09J163/00 C09J9/02 H01L21/52/E

項目	実施例														備考
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
エボキシ	9	8	8	8	8	8	8	8	8	8	11	12	13	14	
配 C GE	3	3	3	3	3	3	3	3	3	3	8	15	5	9.5	6.5
7±1/μm ² 77	6	5	5	5	5	5	5	5	5	5	10	3	4	4.5	3
合 2 F 4 M Z															
G P T	5	5	4	5	5	5	5	5	5	5	7	3	0.5	7.5	
F 1 (平均粒径 6 μm)				19											
F 1 (平均粒径 17 μm)	7	19	28			19	19				29	7	19	19	
F 2 (平均粒径 28 μm)															
F 2 (平均粒径 17 μm)								19							
F 3 (平均粒径 17 μm)									19						
F 4 (平均粒径 17 μm)										19					
銀粉 (平均粒径 2 μm)	70	60	52	60	60		60	60	60	60	31	78	60	60	
銀粉 (平均粒径 4 μm)															
粘度 初期	350	280	212	182	210	178	150	260	224	260	224	260	224	224	
特性 体積抵抗率	3F-05	4E-03	5E-05	7E-05	1E-04	8E-03	7E-03	3E-05	5E-05	9F-05	1E-05	8E-05	7E-05	9F-05	
特性 垂直体積抵抗率	1E-02	2E-02	2E-02	1E-02	1E-02	2E-02	1E-02	2E-02	1E-02	2E-02	2E-02	2E-02	1E-02	2E-02	
350℃熱時接着強度	850	740	920	1020	890	1050	980	870	820	930	1030	930	990	1020	
拡がり性	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
総合評価	○	○	○	○	○	○	○	○	○	○	○	○	○	○	

OV : 120℃オープン中、60分硬化

Family:

Publication number	Publication date	Application number	Application date
JP10121012 A2	19980512	JP19960278101	19961021

Priority:

JP19960278101 19961021

Probable Assignee: SUMITOMO BAKELITE CO

Assignee(s): (std): SUMITOMO BAKELITE CO

Assignee(s): SUMITOMO BAKELITE CO LTD

Inventor(s): (std): MURAYAMA RYUICHI ; TAKEDA TOSHIRO ; OKUBO HIKARI ; MATSUDA YUTAKA

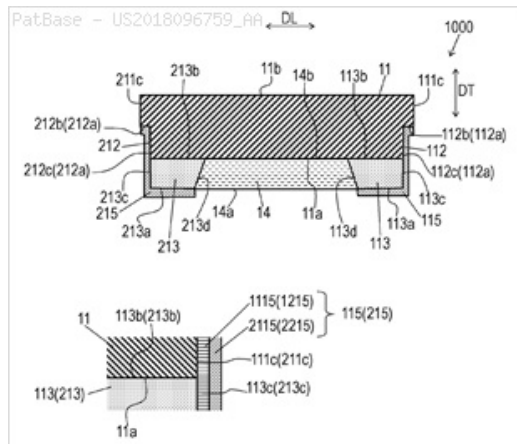
8) Family number: 67376407 (US2018096759A)

Title: CHIP RESISTOR AND METHOD FOR MANUFACTURING THE SAME

Abstract: A chip resistor includes a resistive element, first and second electrodes disposed on a lower surface the resistive element, a protective film disposed on the lower surface of the resistive element and between the first and second electrodes. The resistive element has first and second recesses therein. The first recess extends from the lower surface along a first edge surface and does not reach an upper surface of the resistive element. The second recess extends from the lower surface along a second edge surface and does not reach the upper surface of the resistive element. The first and second electrodes are disposed between the first and second recesses. The protective film is disposed between the first and second electrodes. A first plating layer disposed on the first electrode and an inner surface of the first recess. A second plating layer is disposed on the second electrode and an inner surface of the second recess. This chip resistor avoids mounting failures.

Classifications:

International (IPC 8-9): G01R15/00 H01C1/034 H01C1/142 H01C1/148 H01C13/00 H01C17/28 H01L49/02 (Advanced/Invention)
CPC: H01L28/20 H01C1/142 H01C17/28
US: 1/1 257/536
JP F-Term: 2G025 5E028 5E028/BA21 5E028/BB01 5E028/CA02 5E028/EA01 5E028/EB01 5E028/JA13 5E028/JC06 5E031 5E032 5E032/BA21 5E032/BB01 5E032/CA02 5E032/CC03 5E032/CC11 5E032/CC16 5E032/DA02
JP F-Index: G01R15/00/500 H01C1/034 H01C1/142 H01C1/148 H01C13/00/J H01C17/28



Family:

Publication number	Publication date	Application number	Application date
CN107548509 A	20180105	CN201780001407	20170426
CN107548509 B	20200626	CN201780001407	20170426
JP2017188307 A1	20180517	JP20170549344T	20170426
JP6263750 B1	20180124	JP20170549344T	20170426
US2018096759 AA	20180405	US20170558715	20170426
US10340063 BB	20190702	US20170558715	20170426
WO17188307 A1	20171102	WO2017JP16518	20170426

Priority:

JP20160089333 20160427 WO2017JP16518 20170426

Probable Assignee: PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO LTD

Assignee(s): (std): PANASONIC IP MAN CO LTD

Assignee(s): PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO ; PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO LTD

Inventor(s): (std): HOSHITOKU SHOJI ; KASHIMA YASUHIRO ; KINOSHITA YASUHARU ; TSUBOTA HIRONORI ; KINOSHITA YASUHARA

Agent(s): MCDERMOTT WILL AND EMERY LLP; KAMATA KENJI ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

9) Family number: 15182438 (JP7272902A)

© PatBase

Title: CHIP RESISTOR

Abstract: PURPOSE:To provide a chip resistor excellent in identification at mounting or inspection by reinforcing the protection of the resistor and also, raising the accuracy of resistance value. CONSTITUTION:This chip resistor is equipped with a board 2, which is made of insulating material, a pair of primary electrodes 4 and 6, which are formed in opposition on the surface of this board, a resistor 8, which is made on the board, straddling between these primary electrodes, a first insulating material (glass layer 10), which is so made of translucent insulating material through which the resistor can be seen as to cover the surface of this resistor, a second insulating layer (glass layer 14), which consists of black material being made on the first insulating layer, covering the trimming trace applied to the resistor, and secondary electrodes 16 and 18 which are made at the margins of the board, being electrically connected to the primary electrode.

Classifications:

International (IPC 8-9): H01C1/034 H01C1/04 H01C17/242 H01C7/00 (Advanced/Invention);

H01C1/00 H01C1/02 H01C17/22 H01C7/00 (Core/Invention)

International (IPC 1-7): H01C1/034 H01C1/04 H01C17/242 H01C7/00

JP F-Term: 5E028 5E028/AA10 5E028/BA07 5E028/BB01 5E028/CA02 5E028/DA04 5E028/EA01 5E028/EB05 5E028/FA07 5E032 5E032/AB00 5E032/BA07 5E032/BB01 5E032/CA02 5E032/CB00 5E032/CC10 5E032/CC16 5E032/CC18 5E032/TA13 5E032/TB02 5E032/TC00 5E033 5E033/AA11 5E033/BB02 5E033/BC01 5E033/BD01 5E033/BE02 5E033/BF05 5E033/BG02 5E033/BH02

JP F-Index: H01C1/034 H01C1/04 H01C17/24/L H01C17/242 H01C7/00/B H01C7/00/110

Publication number	Publication date	Application number	Application date
JP2737893 B2	19980408	JP19950109061	19950410
JP7272902 A2	19951020	JP19950109061	19950410

JP19910198379 19830722	JP19950109061 19950410
Probable Assignee:	ROHM CO LTD
Assignee(s): (std):	ROHM CO LTD
Assignee(s):	ROOMU KK
Inventor(s): (std):	KATSUNO TAKAFUMI

Abstract: A mixture of calcinated metallic oxides are mixed with ZnO and SiO₂, granulated, compacted and then sintered to form a nonlinear resistor. After sintering, the formed ZnO resistor elements are heat treated, preferably in a two-step heat treating process.

JP F-Index: C04B35/00/Q C04B35/453 H01C7/10 H01C7/112

U.S. Patent Mar. 25, 1997 Sheet 1 of 13 5,614,138

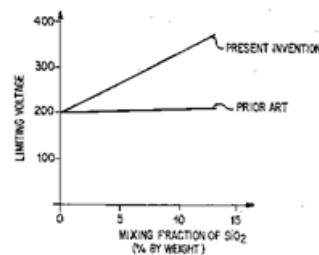


FIG. 1

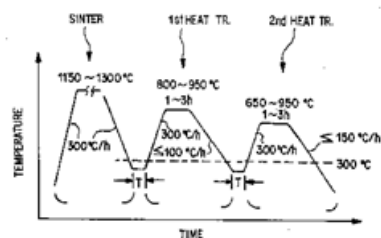


FIG. 2

Family:

Publication number	Publication date	Application number	Application date
BRPI9500483 A	19951017	BR1995PI00483	19950209
CN1046588 C	19991117	CN19951002922	19950210
CN1113343 A	19951213	CN19951002922	19950210
EP0667626 A2	19950816	EP19950101586	19950206
EP0667626 A3	19960417	EP19950101586	19950206
JP3254950 B2	20020212	JP19950021491	19950209
JP7272909 A2	19951020	JP19950021491	19950209
KR19950034302 A	19951228	KR19950002443	19950210
KR950034302 A	19951228	KR19950002443	19950210
US5614138 A	19970325	US19950384954	19950207

Priority:

JP19940016080 19940210 JP19950021491 19950209

Probable Assignee: HITACHI LTD**Assignee(s):** (std): HITACHI LTD

Inventor(s): (std): YAMAZAKI TAKEO ; TAKAHASHI KEN ; SYOJI ; SHIRAKAWA SHINGO ; SHIGERU TANAKA ; SEIICHI YAMADA ; OWADA SHINICHI ; OOWADA SHINICHI ; MOTOWAKI SHIGEHISA ; MOTOWAKI NARIHISA ; MORITAKA ; YAMADA SEIICHI ; TANAKA SHIGERU ; SYOJI MORITAKA ; SHOJI MORITAKA

Inventor(s): KEN TAKAHASHI ; SHIGEHISA MOTOWAKI ; SHINGO SHIRAKAWA ; SHINICHI OOWADA ; TAKEO YAMAZAKI ; MORITAKA SYOJI

Designated states: DE FR GB**11) Family number: 31394561** (US2004252009A)

© PatBase

Title: CHIP RESISTOR AND METHOD OF MAKING THE SAME

Abstract: A chip resistor includes a resistor element in the form of a chip, and at least two electrodes formed on the resistor element. The resistor element includes an upper surface, a lower surface, and two end surfaces extending between the upper and the lower surfaces and spaced from each other. The two electrodes are provided on the lower surface of the resistor element. Each of the end surfaces of the resistor element is formed with a conductor film integrally connected to a corresponding one of the electrodes. The conductor film is made of copper, for example, and is higher in solder-wettability than the resistor element.

Classifications:

International (IPC 8-9): H01C1/01 H01C1/012 H01C1/14 H01C1/144
H01C17/00 H01C17/06 H01C17/24 H01C3/00

H01C7/00 (Advanced/Invention);

H05K3/34 (Advanced/Non-invention);

H01C1/01 H01C1/14 H01C17/00 H01C17/06 H01C17/22 H01C3/00

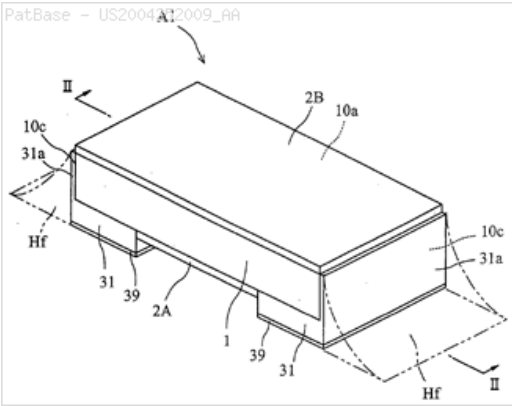
H01C7/00 (Core/Invention);

H05K3/34 (Core/Non-invention)

International (IPC 1-7): H01C1/012 H01C1/14 H01C17/00 H01C17/06
H01C17/24 H01C3/00

CPC: H01C1/144 H01C7/003 H01C17/006 H05K3/3442**European:** H01C1/144 H01C17/00F H01C7/00D T05K3/34C4C**US:** 29/610 338/203 338/308 338/309 338/313 338/332

JP F-Term: 5E029 5E032 5E032/BA01 5E032/BB01 5E032/CA01 5E032/CC03
JP F-Index: H01C17/06/N H01C17/06/V H01C17/06S/310 H01C17/06S/700 H01C3/00/Z



Family:

Publication number	Publication date	Application number	Application date
CN1331164 C	20070808	CN200410037365	20040427
CN1542871 A	20041103	CN200410037365	20040427
JP2004327907 A2	20041118	JP20030123656	20030428
JP4047760 B2	20080213	JP20030123656	20030428
US2004252009 AA	20041216	US20040833940	20040427
US2007132545 AA	20070614	US20070703979	20070208
US7193499 BB	20070320	US20040833940	20040427
US7378937 BB	20080527	US20070703979	20070208

Priority:

JP20030123656 20030428 US20040833940 20040427 US20070703979 20070208

Probable Assignee: ROHM CO LTD

Assignee(s): (std): ROHM CO LTD

Assignee(s): ROHM CO

Inventor(s): (std): TSUKADA TORAYUKI ; TORANO TSUKADA ; TSUKADA TORANO

Agent(s): FURUSAWA HIROSHI; SHIOTANI TAKASHI; TANAKA TATSUYA; YOSHIDA MINORU; HAMRE SCHUMANN MUELLER AND LARSON PC

12) Family number: 10662582 (JP5326202A)

© PatBase

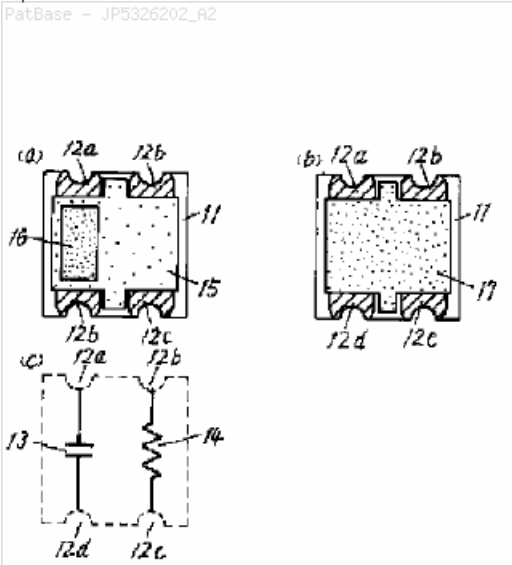
Title: CHIP COMPONENT

Abstract: PURPOSE:To arrange chip components which have a plurality of terminal electrodes forming an asymmetric electric circuit at an edge of a board in the same circuit direction only through an optical method without requiring any electrical measurement. CONSTITUTION:Terminal electrodes 12a, 12b, 12c, 12d are provided at four protruding or recessed parts of an insulating board 11 having four recesses or protrusions at an edge. A dielectric film 13 is formed between the terminal electrodes 12a, 12d while a resistor film 14 is formed between the terminal electrodes 12b, 12c. A white protective film 15 is then applied on the surface of a chip component whereas a black protective film 17 is applied on the rear of the chip component except the edge part at the end of terminal electrode and a black seal 17 is put locally at a point close to one edge on the white protective film 15. This constitution facilitates arrangement of circuit direction only through an optical method.

Classifications:

International (IPC 8-9): H01B5/14 H01C1/02 H01C1/04 H01C7/00 H01G2/24 (Advanced/Invention);
H01B5/14 (Advanced/Non-invention);
H01B5/14 H01C1/00 H01C1/02 H01C7/00 H01G2/00 (Core/Invention);
H01B5/14 (Core/Non-invention)

International (IPC 1-7): H01B5/14 H01C1/02 H01C7/00 H01G1/04
JP F-Term: 5E028 5E028/AA10 5E028/BA03 5E028/BB01 5E028/BB13 5E028/CA02 5E028/DA04 5E028/EA01 5E028/EB01 5E033 5E033/AA01 5E033/AA11 5E033/BB02 5E033/BE01 5E033/BG02 5E033/BH03 5E033/BH06 5E074 5G307 5G307/GA07 5G307/GB01 5G307/GC02
JP F-Index: H01B5/14/Z H01C1/02/Z H01C1/04 H01C7/00/B H01C7/00/110 H01G1/04 H01G2/24



Family:

Publication number	Publication date	Application number	Application date
--------------------	------------------	--------------------	------------------

Priority:

JP19920128481 19920521

Probable Assignee: MATSUSHITA ELECTRIC IND CO LTD**Assignee(s):** (std): MATSUSHITA ELECTRIC IND CO LTD**Assignee(s):** MATSUSHITA ELECTRIC INDUSTRIAL CO LTD**Inventor(s):** (std): NAKANO HARUKAZU ; SOBANE MINORU ; NISHIDA KOJI ; IKEDA TAKASHI ; IZEKI TAKESHI**13) Family number: 28553780** (US2006247364A)

© PatBase

Title: CONDUCTIVE POLYMER, CONDUCTIVE POLYMER COMPOSITIONS AND THEIR USE**Abstract:** The invention provides an electrode, electrolyte and/or a separator plate comprising a conductive material-doped ester-cured alkaline phenolic resole resin containing conducting alkaline salts.**Classifications:**

International (IPC 8-9): C02F1/461 C04B26/12 C08G8/04 C08G8/32 C08K3/00 C08K3/04 C08L61/10 G21F1/00 H01B1/00 H01B1/06 H01B1/24 H01G11/22 H01G11/52 H01G11/56 H01G9/00 H01G9/02 H01G9/025 H01G9/028 H01G9/04 H01G9/058 H01G9/155 H01M10/0565 H01M2/00 H01M2/02 H01M2/16 H01M4/02 H01M4/137 H01M4/60 H01M4/62 H01M4/86 H01M4/96 H01M6/18 H01M6/42 H01M8/00 H01M8/02 H01M8/10 H01R13/64 H01R13/648 H05K9/00 (Advanced/Invention); H01M4/86 (Advanced/Non-invention); C02F1/461 C04B26/00 C08K3/00 H01B1/00 H01G9/00 H01G9/02 H01G9/022 H01G9/04 H01G9/155 H01M2/00 H01M2/02 H01M2/16 H01M4/02 H01M4/36 H01M4/62 H01M4/96 H01M6/18 H01M6/42 H01M8/00 H01M8/02 H01M8/10 H01R13/648 H05K9/00 (Core/Invention); H01M4/02 (Core/Non-invention)

International (IPC 1-7): C02F1/461 H01G9/04 H01M2/02 H01M2/16

H01M4/02 H01M4/62 H01M8/02 H01M8/10 H01R13/648 H05K9/00

CPC: H01G11/52 H01G9/038 H01G9/028 H01G11/56 C02F1/46109

C02F2001/46128 C02F2001/46133 H01G9/02 H01G9/155 H01M2/16

H01M2/1673 H01M4/137 H01M4/60 H01M4/622 H01M4/625 H01M4/96

H01M8/0206 H01M8/0213 H01M8/0221 H01M8/0226 H01M8/0232

H01M8/0234 H01M8/0239 H01M8/0243 Y02E60/13

European: C02F1/461B2 H01G11/56 H01G9/00D H01G9/02 H01G9/028

H01G9/038 H01G9/155 H01M2/16 H01M2/16E H01M4/137 H01M4/60

H01M4/62B2 H01M4/62C2 H01M4/96 H01M8/02C2A H01M8/02C2C

H01M8/02C2F H01M8/02C2K1 H01M8/02C4A H01M8/02C4C

H01M8/02C4F H01M8/02C4K1 M02F1/461B2 M02F1/461B2H

M02F1/461B2J Y02E60/12 Y02E60/12B Y02E60/13 Y02E60/50

US: 250/515.1 252/500 252/62.2 252/62.200S 361/525 361/525S 429/12

429/149 429/149S 429/317 429/317S 429/33 429/34 429/451 429/451S

429/492 429/492P 429/514 429/518 429/518S 429/530 429/530S

439/607.02 524/495 524/594 524/594S 528/129 528/129S 528/154

JP F-Term: 5E078 5E078/AA03 5E078/AA10 5E078/AA14 5E078/BA43

5E078/BA52 5E078/BA53 5E078/BA54 5E078/BA71 5E079 5E084 5G301 5G301/DA02 5G301/DA18 5G301/DA19 5G301/DA22

5G301/DA23 5G301/DA29 5G301/DA55 5G301/DD10 5H018 5H018/AA01 5H018/EE02 5H018/EE05 5H018/EE12 5H018/EE17

5H018/HH05 5H026 5H026/AA06 5H026/BB10 5H026/EE02 5H026/EE05 5H026/EE06 5H026/EE12 5H026/EE18 5H026/HH05 5H050

5H050/AA19 5H050/BA17 5H050/CB07 5H050/CB08 5H050/CB09 5H050/EA02 5H050/HA01 5H050/HA02 5H126 5H126/AA12

5H126/BB06 5H126/DD04 5H126/GG02 5H126/GG05 5H126/GG06 5H126/GG12 5H126/GG18 5H126/HH10 5H126/JJ05 4J002

4J002/CC04 4J002/CC05 4J002/DA01 4J002/DA02 4J002/DA07 4J002/DA08 4J002/DL00 4J002/EH00 4J002/EH03 4J002/EH04

4J002/FB07 4J002/FB24 4J002/FD11 4J002/FD14 4J002/GQ02 4J033 4J033/CA01 4J033/CA02 4J033/CA03 4J033/CA11

4J033/CA12 4J033/CA13 4J033/CA14 4J033/CA19 4J033/CA36 4J033/CB02 4J033/CB18 4J033/CC04 4J033/HA13 5G301/CA01

5G301/CA30 5G301/CD01 5H018/AA02 5H018/AS01 5H018/EE06 5H018/EE11 5H018/EE16 5H024 5H024/EE09 5H024/FF21

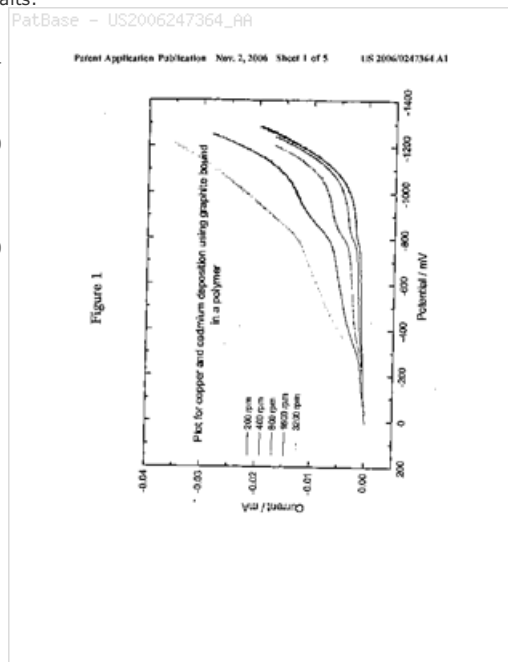
5H026/AA02 5H026/EE11 5H029 5H029/AM16 5H126/BB02 5H126/DD03 5H126/GG11 5E078/AB01 5E078/BA12

JP F-Index: H01B1/24/Z H01G11/22 H01G11/38 H01G9/00/301/G H01G9/00/301/G H01G9/02/331/G H01G9/022 H01G9/028/G

H01G9/15 H01M4/02/Z H01M4/86/B H01M8/02/B H01M8/0202 H01M8/10 C08G8/32 C08K3/00 C08K3/01 C08L61/10 H01B1/06/A

H01G9/02/301 H01M10/00/110 H01M10/0565 H01M6/18/E H01M8/0213 H01M8/0221 H01M8/0226 H01G11/32 H01G9/00/301/A

H01M8/0206 H01M8/0215 H01M8/0223

**Family:**

Publication number	Publication date	Application number	Application date
CA2561481 AA	20060927	CA20042561481	20040408
EP1609200 A1	20051228	EP20040726540	20040408
GB200308135 A0	20030514	GB20030008135	20030409
GB200329836 A0	20040128	GB20030029836	20031223
JP2006524890 T2	20061102	JP20060506113T	20040408
JP2011077053 A2	20110414	JP20100277287	20101213
JP2011100740 A2	20110519	JP20100277288	20101213
JP4874092 B2	20120208	JP20060506113T	20040408
JP5242666 B2	20130724	JP20100277288	20101213
JP5290264 B2	20130918	JP20100277287	20101213
US2006247364 AA	20061102	US20040552233	20040408
US2010159354 AA	20100624	US20090641700	20091218
US7655159 BB	20100202	US20040552233	20040408
US8333909 BB	20121218	US20090641700	20091218
WO04091015 A1	20041021	WO2004GB01571	20040408

Priority:

GB20030008135 20030409

GB20030029836 20031223

JP20060506113 20040408

WO2004GB01571 20040408

US20040552233 20040408

JP20060506113T 20040408

Probable Assignee: BAC2 LTD**Assignee(s):** (std): BAC2 LTD ; CAMPBELL SHEELAGH A ; CAMPBELL SHEELAGH ANNE ; GILLARD STEPHEN P ; GILLARD STEPHEN PAUL ; MURRAY GRAHAM SIMPSON ; MURRAY GRAHAM S**Assignee(s):** GRAHAM SIMPSON MURRAY ; BAC2 LIMITED**Inventor(s):** (std): GILLARD STEPHEN P ; MURRAY GRAHAM S ; CAMPBELL SHEELAGH A ; GILLARD STEPHEN PAUL ; CAMPBELL SHEELAGH ANNE ; MURRAY GRAHAM SIMPSON ; CAMPBELL S A**Inventor(s):** CAMPBELL SHEELAGH ; GILLARD STEPHEN ; MURRAY GRAHAM**Agent(s):** SMART AND BIGGAR; ICE MILLER LLP**Designated states:** AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW**14) Family number: 42615810** (US2008298031A)

© PatBase

Title: SHAPED INTEGRATED PASSIVES

Abstract: Shaped integrated passive devices and corresponding methodologies relate to construction and mounting of shaped passive devices on substrates so as to provide both mechanical and electrical connection. Certain components and component assemblies are associated with the implementation of surface mountable devices. Specially shaped integrated passive device are capable of providing simplified mounting on and simultaneous connection to selected electrical pathways on a printed circuit board or other mounting substrate. Shaped, plated side filter devices have plated sides which provide both mounting and grounding/power coupling functions. Thin film filters may be constructed on silicon wafers, which are then diced from the top surface with an angular dicing saw to produce a shaped groove in the top surface. The groove may be v-shaped or other shape, and is then plated with a conductive material. Individual pieces are separated by grinding the back surface of the wafer down to where the grooves are intercepted. The plated grooves serve as ground or power connection points for the filter circuit. The metallized slopes of the plated grooves are used in securing the individual pieces to a mounting surface, by soldering or using conductive epoxy.

Classifications:

International (IPC 8-9): H01F27/00 H01L21/60 H01L23/48 H01L23/488 H01P1/205 H03H7/01 H05K1/16 H05K3/00 (Advanced/Invention); H01L21/60 H01L23/48 H01L23/488 H05K3/00 (Advanced/Non-invention); H01F27/00 H01L21/02 H01L23/48 H01P1/20 H03H7/01 H05K1/16 H05K3/00 (Core/Invention)

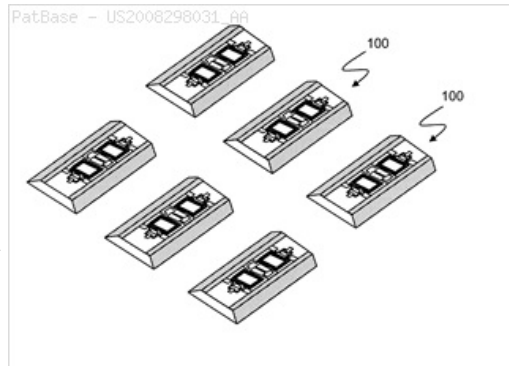
CPC: H01L2224/48091 H01P1/20 H05K1/16 H05K3/0052 H05K3/403 H05K2201/0317 H05K2201/09154 H05K2201/10045 H01L2924/30107 H01L2924/3011 Y10T29/49155

European: H01P1/20 H05K1/16 T05K201/03A5 T05K201/09B1 T05K201/10A5 T05K3/00K4S T05K3/40C

US: 257/685 257/686 257/726 29/846 29/846S 338/313 361/760 361/761 361/765 361/765P

JP F-Term: 5E070 5E070/AA05 5E070/AB01 5J024 5J024/AA01 5J024/BA11 5J024/CA02 5J024/CA03 5J024/CA19 5J024/DA04 5J024/DA29 5J024/DA34 5J024/DA35 5J024/EA03

JP F-Index: H01F15/00/D H01F27/00/S H03H7/01/Z

**Family:**

Publication number	Publication date	Application number	Application date
CN101315998 A	20081203	CN200810142803	20080529
CN101315998 B	20130814	CN200810142803	20080529
JP2009105873 A2	20090514	JP20080137994	20080527
US2008298031 AA	20081204	US20080119800	20080513
US8208266 BB	20120626	US20080119800	20080513

Priority:

US20070932153P 20070529 US20080119800 20080513

Probable Assignee: AVX CORP**Assignee(s):** (std): AVX CORP ; KORONY GHEORGHE**Inventor(s):** (std): KORONY GHEORGHE ; GHEORGHE KORONY**Agent(s):** DORITY AND MANNING PA**15) Family number: 32711851** (WO06027954A1)

© PatBase

Title: PASTE, RESISTOR PASTE, METHODS FOR PRODUCING THOSE, AND VARIABLE RESISTOR

Abstract: Disclosed is a variable resistor comprising a resistor substrate (10), a slider (35) having a contact piece which slides on a collector (12b) and a resistor (15) formed on the major surface of the resistor substrate (10), and a rotating shaft which rotates while holding the slider (35). The resistor (15) is made from a starting material containing a conductive filler, a novolac type phenol resin to which no curing agent is added, and a resol type phenol resin. The content of the resol type phenol resin is the same as or higher than that of the novolac type phenol resin.

Classifications:

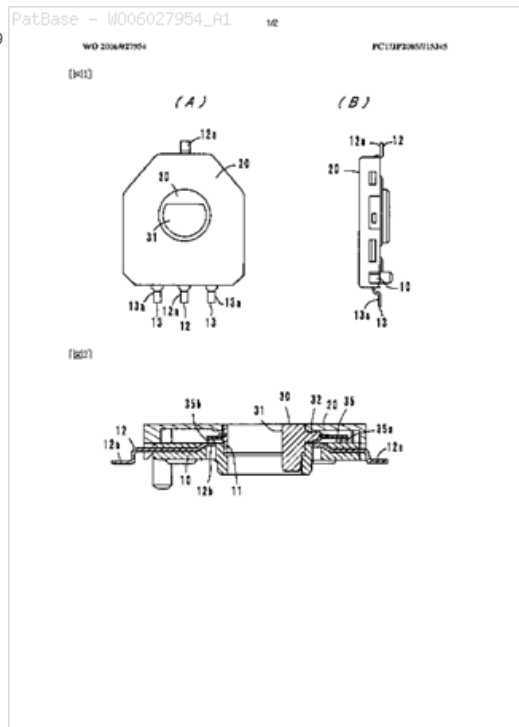
International (IPC 8-9): H01B1/24 H01B13/00 H01C10/30 H01C17/00 H01C17/06 H01C7/00 (Advanced/Invention)

CPC: H01B1/24 H01C10/306 H01C10/32 H01C17/06586

European: H01B1/24 H01C10/30D2 H01C10/32 H01C17/065B4D

JP F-Term: 5E032 5E032/BA04 5E032/BA06 5E032/BB02 5E032/BB03

5E033 5E033/AA13 5E033/AA32 5E033/BB02 5E033/BC01 5E033/BC03
5G301 5G301/DA18 5G301/DA19 5G301/DA55 5G301/DD01 5G301/DD09
5G301/DE01 5G323
JP F-Index: H01B1/24/A H01B13/00/503/C H01C17/00/V
H01C17/00/300 H01C17/06/C H01C17/065/120 H01C7/00/J
H01C7/00/310



Family:

Publication number	Publication date	Application number	Application date
CN101053045 A	20071010	CN200580037592	20050824
CN101053045 B	20100512	CN200580037592	20050824
JP2006027954 A1	20080508	JP20060535107T	20050824
JP4506756 B1	20100721	JP20060535107T	20050824
JP4506756 B2	20100721	JP20060535107T	20050824
WO06027954 A1	20060316	WO2005JP15345	20050824

Priority:

JP20040259436 20040907 WO2005JP15345 20050824

Probable Assignee: MURATA MFG CO LTD

Assignee(s): (std): MURATA MANUFACTURING CO ; OGISO YOSHIFUMI ; MURATA MFG CO

Assignee(s): MURATA MANUFACTURING CO LTD ; MURATA MFG CO LTD

Inventor(s): (std): OGISO YOSHIFUMI ; YOSHIFUMI OGISO

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

16) Family number: 51796867 (US2013321121A)

© PatBase

Title: CHIP RESISTOR AND METHOD OF PRODUCING SAME

Abstract: An object of the disclosure is to provide a chip resistor without causing the disconnection in atmosphere of sulfidizing gas and without precipitating silver sulfide on its surface. The chip resistor of the present disclosure includes a resistor layer disposed on a top surface of a substrate; a first upper electrode layer disposed at both sides of the resistor layer and being electrically connected to the resistor layer; and a second upper electrode layer disposed on the first upper electrode layer and including between 75 percent by weight and 85 percent by weight (inclusive) of silver particles with an average particle diameter ranging from 0.3 μm to 2 μm , between 1 percent by weight and 10 percent by weight (inclusive) of carbon, and a resin.

Classifications:

International (IPC 8-9): H01C1/012 H01C1/14 H01C1/148 H01C17/00
H01C17/28 H01C7/00 (Advanced/Invention);
H01C1/028 (Advanced/Non-invention)

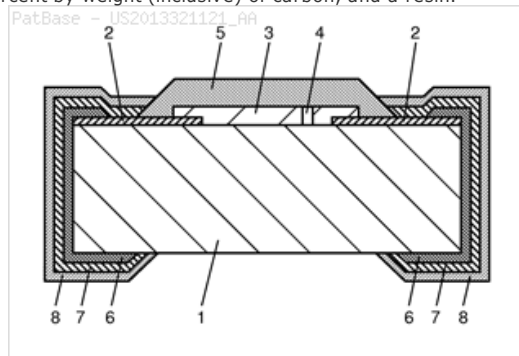
CPC: H01C1/012 H01C17/006 H01C1/028 H01C1/14 H01C7/003
H01C17/283 Y10T29/49082

European: H01C1/028 H01C1/14 H01C7/00D

US: 1/1 29/610.1 338/307

JP F-Term: 5E028 5E028/AA10 5E028/BA04 5E028/BB01 5E028/CA02
5E028/CA12 5E028/EA01 5E028/EB05 5E028/JC02 5E028/JC07
5E028/JC12 5E032 5E032/BA07 5E032/BB01 5E032/CA02 5E032/CC14
5E032/DA05 5E033 5E033/AA18 5E033/AA27 5E033/BC01 5E033/BE01
5E033/BG03 5E033/BH02

JP F-Index: H01C1/14 H01C1/148 H01C17/28 H01C7/00/B
H01C7/00/110



Family:

Publication number	Publication date	Application number	Application date
CN103392212 A	20131113	CN201280010156	20120214
CN103392212 B	20161005	CN201280010156	20120214
JP2012114673 A1	20140707	JP20130500865T	20120214
JP5360330 B1	20131204	JP20130500865T	20120214
JP5360330 B2	20131204	JP20130500865T	20120214
US2013321121 AA	20131205	US20130960749	20130806
US9245672 BB	20160126	US20130960749	20130806
WO12114673 A1	20120830	WO2012JP00951	20120214

Priority:

JP20110038062 20110224 JP20130500865 20120214 WO2012JP00951 20120214

Probable Assignee: PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO LTD**Assignee(s):** (std): MATSUSHITA ELECTRIC INDUSTRIAL CO LTD ; OHBAYASHI TAKASHI ; PANASONIC CORP ; PANASONIC IP MAN CO LTD ; SAKAI KAZUNORI ; SHIRAISHI SEIGO**Assignee(s):** PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO ; PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO LTD**Inventor(s):** (std): OHBAYASHI TAKASHI ; SAKAI KAZUNORI ; SHIRAISHI SEIGO**Agent(s):** NAITO HIROKI; MCDERMOTT WILL AND EMERY LLP; NAITO HIROKI ET AL**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW**17) Family number: 34457896** (US2007102487A)

© PatBase

Title: BONDING STRUCTURE OF SUBSTRATE AND COMPONENT AND METHOD OF MANUFACTURING THE SAME**Abstract:** A bonding structure and method of manufacturing the same are provided. The bonding structure of a substrate and a component include an electrode formed of metal powder and a resin component on the substrate. A low melting point solder that bonds the component to the electrode. The metal powder contains at least spherical metal powder and flake metal powder. The low melting point solder is infiltrated from the surface of the electrode into the electrode.**Classifications:**

International (IPC 8-9): A47J36/02 B22F7/02 B23K1/00 B23K1/19 B32B15/08 B32B15/16 C09D5/24 H01B1/22 H01L23/14 H05K1/09 H05K1/11 H05K3/12 H05K3/34 (Advanced/Invention); A47J36/02 C09D5/24 H01B1/22 H05K1/09 H05K1/11 H05K3/12 H05K3/34 (Core/Invention)

CPC: Y10T428/12042 Y10T428/12049 Y10T428/12479 Y10T428/12528 Y10T428/12569 H05K1/111 H05K1/095 H05K3/305 H05K3/3442 H05K3/3484 H05K2201/0245 H05K2201/0272 H05K2201/0373 H05K2201/10636 H01L24/01 Y02P70/611 Y02P70/613

European: H05K1/11C H05K3/34C4C T05K1/09D2 T05K201/02A2A T05K201/02A3C T05K201/03C2C T05K201/10D1B T05K3/30C2 T05K3/34F6B

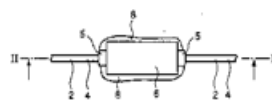
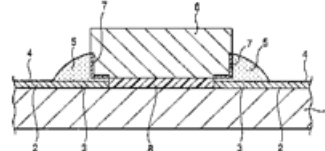
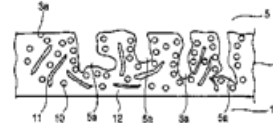
US: 228/101 228/101P 228/123.1 228/179.1 228/189 228/262.9 428/550 428/551 428/613 428/620 428/626

JP F-Term: 5E319 5E319/AA03 5E319/AC02 5E319/BB05 5E319/CC33 5E319/CC70 5E319/CD29 5E319/GG03

JP F-Index: H05K3/34/501/D H05K3/34/505/B H05K3/34/507/C H05K3/34/512/C

PatBase - US2007102487_AA

Patent Application Publication May 10, 2007 Sheet 1 of 6 US 2007/0102487 A1

FIG. 1**FIG. 2****FIG. 3****Family:**

Publication number	Publication date	Application number	Application date
CN1960598 A	20070509	CN200610143212	20061031
JP2007123664 A2	20070517	JP20050315931	20051031
JP4522939 B2	20100811	JP20050315931	20051031
US2007102487 AA	20070510	US20060553387	20061026
US7935430 BB	20110503	US20060553387	20061026

Priority:

JP20050315931 20051031

Probable Assignee: ALPS GROUP**Assignee(s):** (std): ALPS ELECTRIC CO LTD**Assignee(s):** ALPS GROUP ; N A ; ALPS ALPINE CO LTD ; ALPS ELECTRIC CO

Inventor(s): (std): SUZUKI HIROKI ; UEHARA MASATO ; MASATO SUZUKI HIROKI UEHARA
Inventor(s): SUZUKI HIROKI UEHARA MASATO
Agent(s): BRINKS HOFER GILSON AND LIONE