



- RoHS compliant\*
- Medium profile offers increased power handling
- Wide assortment of pin packages enhances design flexibility
- Ammo-pak packaging available

- Recommended for rosin flux and solvent clean or no clean flux processes
- Marking on contrasting background for permanent identification

## Product Characteristics

..... 10 ohms to 10 megohms  
Maximum Operating Voltage..... 100 V  
Temperature Coefficient of Resistance  
    50 Ω to 2.2 megohms ..... ±100 ppm/°C  
    below 50 Ω ..... ±250 ppm/°C  
    above 2.2 megohms ..... ±250 ppm/°C  
TCR Tracking ..... 50 ppm/°C  
                maximum; equal values  
Resistor Tolerance ..... See circuits  
Insulation Resistance  
    ..... 10,000 megohms minimum  
Dielectric Withstanding Voltage  
    ..... 200 VRMS  
Operating Temperature  
    ..... -55 °C to +125 °C

|                                    |         |
|------------------------------------|---------|
| TESTS PER MIL-STD-202.....         | ΔR MAX. |
| Short Time Overload .....          | ±0.25 % |
| Load Life.....                     | ±2.00 % |
| Moisture Resistance.....           | ±0.50 % |
| Resistance to Soldering Heat ..... | ±0.50 % |
| Terminal Strength .....            | ±0.25 % |
| Thermal Shock .....                | ±0.25 % |

Flammability .....Conforms to UL94V-0  
Body Material ..... Epoxy resin  
Standard Packaging  
.....Bulk, Ammo-pak available

## 46 06 M - 101 - 222 LF

Consult factory for other available options.  
 \*\*Available for packages with 10 pins or less.

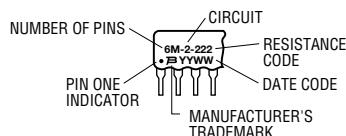
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| <b>Pkg.</b> | <b>Ambient<br/>Temp.<br/>70 °C</b> | <b>Pkg.</b> | <b>Ambient<br/>Temp.<br/>70 °C</b> |
|-------------|------------------------------------|-------------|------------------------------------|
| 4604M       | 0.60                               | 4610M       | 1.50                               |
| 4605M       | 0.75                               | 4611M       | 1.65                               |
| 4606M       | 0.90                               | 4612M       | 1.80                               |
| 4607M       | 1.05                               | 4613M       | 1.95                               |
| 4608M       | 1.20                               | 4614M       | 2.10                               |
| 4609M       | 1.35                               |             |                                    |

Represents total content. Layout may vary.

| Part Number     | Part Number |
|-----------------|-------------|
| 4606M-101-RC    | 6M-1-RC     |
| 4608M-102-RC    | 8M-2-RC     |
| 4610M-104-RC/RC | 10M-4-RC/RC |

RC = ohmic value, 3-digit resistance code.



Technical drawing of a pin connector showing dimensions and a table of pin counts.

Dimensions shown in the drawing:

- Pin Count:** 14
- Pin #1 REF.**
- MAX. 1.24** (BOTH ENDS (.049))
- .508 ± .050** TYP. (.020 ± .002)
- 2.54 ± .07** TYP. (.100 ± .003\*) NON-ACCUM.
- 6.35 (.250) MAX.**
- 3.3 +0.5/-0.3** (.130 +.020/- .012)
- 2.49 (.098) MAX.**
- .254 ± .050** (.010 ± .002) TYP.

| Pin Count | A Maximum mm (Inch) |
|-----------|---------------------|
| 4         | 10.11 (.398)        |
| 5         | 12.65 (.500)        |
| 6         | 15.19 (.598)        |
| 7         | 17.73 (.698)        |
| 8         | 20.27 (.798)        |
| 9         | 22.81 (.898)        |
| 10        | 25.35 (.998)        |
| 11        | 27.89 (1.098)       |
| 12        | 30.43 (1.198)       |
| 13        | 32.97 (1.298)       |
| 14        | 35.51 (1.398)       |

Maximum package length is equal to 2.54mm (.100") times the number of pins, less .005mm (.002").

Governing dimensions are in metric. Dimensions in parentheses are inches and are approximate.

\*Terminal centerline to centerline measurements made at point of emergence of the lead from the body.

For Standard Values Used in Capacitors, Inductors, and Resistors, [click here](#).

\*RoHS Directive 2002/95/EC Jan 27 2003 including Annex.  
Specifications are subject to change without notice.  
Verify actual device performance in their specific applications.

For information on specific applications,  
download Bourns' application notes:

- DRAM Applications
- Dual Terminator Resistor Networks
- R/2R Ladder Networks
- SCSI Applications

## 4600M Series - Thick Film Conformal SIPs

**BOURNS®**

### Isolated Resistors (102 Circuit)

**Model 4600M-102-RC**  
4, 6, 8, 10, 12, 14 Pin



These models incorporate 2 to 7 isolated thick-film resistors of equal value, each connected between two pins.

#### Resistance Tolerance

10 ohms to 49 ohms .....±1 ohm  
50 ohms to 5 megohms .....±2 %\*  
Above 5 megohms ..... ±5 %

#### Power Rating per Resistor

At 70 °C ..... 0.40 watt

#### Power Temperature Derating Curve



### Bussed Resistors (101 Circuit)

**Model 4600M-101-RC**  
4 through 14 Pin



These models incorporate 3 to 13 thick-film resistors of equal value, each connected between a common bus (pin 1) and a separate pin.

#### Resistance Tolerance

10 ohms to 49 ohms .....±1 ohm  
50 ohms to 5 megohms .....±2 %\*  
Above 5 megohms ..... ±5 %

#### Power Rating per Resistor

At 70 °C ..... 0.25 watt

#### Power Temperature Derating Curve



### Dual Terminator (104 Circuit)

**Model 4600M-104-R1/R2**  
4 through 14 Pin



The 4608M-104 (shown above) is an 8-pin configuration and terminates 6 lines. Pins 1 and 8 are common for ground and power, respectively. Twelve thick-film resistors are paired in series between the common lines (pins 1 and 8).

#### Resistance Tolerance

Below 100 ohms.....±2 ohms  
100 ohms to 5 megohms .....±2 %\*  
Above 5 megohms ..... ±5 %

#### Power Rating per Resistor

At 70 °C ..... 0.25 watt

#### Power Temperature Derating Curve



### Popular Resistance Values (101, 102 Circuits)\*\*

| Ohms | Code | Ohms  | Code | Ohms   | Code | Ohms    | Code | Ohms      | Code |
|------|------|-------|------|--------|------|---------|------|-----------|------|
| 10   | 100  | 180   | 181  | 1,800  | 182  | 15,000  | 153  | 120,000   | 124  |
| 22   | 220  | 220   | 221  | 2,000  | 202  | 18,000  | 183  | 150,000   | 154  |
| 27   | 270  | 270   | 271  | 2,200  | 222  | 20,000  | 203  | 180,000   | 184  |
| 33   | 330  | 330   | 331  | 2,700  | 272  | 22,000  | 223  | 220,000   | 224  |
| 39   | 390  | 390   | 391  | 3,300  | 332  | 27,000  | 273  | 270,000   | 274  |
| 47   | 470  | 470   | 471  | 3,900  | 392  | 33,000  | 333  | 330,000   | 334  |
| 56   | 560  | 560   | 561  | 4,700  | 472  | 39,000  | 393  | 390,000   | 394  |
| 68   | 680  | 680   | 681  | 5,600  | 562  | 47,000  | 473  | 470,000   | 474  |
| 82   | 820  | 820   | 821  | 6,800  | 682  | 56,000  | 563  | 560,000   | 564  |
| 100  | 101  | 1,000 | 102  | 8,200  | 822  | 68,000  | 683  | 680,000   | 684  |
| 120  | 121  | 1,200 | 122  | 10,000 | 103  | 82,000  | 823  | 820,000   | 824  |
| 150  | 151  | 1,500 | 152  | 12,000 | 123  | 100,000 | 104  | 1,000,000 | 105  |

\* ±1 % tolerance is available by adding suffix code "F" after the resistance code.

\*\*Non-standard values available, within resistance range.

### Popular Resistance Values (104 Circuit)\*\*

| Resistance     |                |                |                |
|----------------|----------------|----------------|----------------|
| Ohms           |                | Code           |                |
| R <sub>1</sub> | R <sub>2</sub> | R <sub>1</sub> | R <sub>2</sub> |
| 160            | 240            | 161            | 241            |
| 180            | 390            | 181            | 391            |
| 220            | 270            | 221            | 271            |
| 220            | 330            | 221            | 331            |
| 330            | 390            | 331            | 391            |
| 330            | 470            | 331            | 471            |
| 3,000          | 6,200          | 302            | 622            |

REV. 07/10

Specifications are subject to change without notice.  
Customers should verify actual device performance in their specific applications.

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

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Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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