



## Features

- RoHS compliant\* versions available (see How to Order "Termination" option)
- Medium profile offers increased power handling
- Compatible with automatic insertion equipment
- Superior package integrity

- Now available with improved tolerance to  $\pm 0.5\%$

## 4300M Series - Thick Film Molded SIPs

### Product Characteristics

Resistance Range ..... 10 ohms to 10 megohms  
 Maximum Operating Voltage ..... 100 V  
 Temperature Coefficient of Resistance  
   50  $\Omega$  to 2.2 megohms .....  $\pm 100$  ppm/ $^{\circ}$ C  
   below 50  $\Omega$  .....  $\pm 250$  ppm/ $^{\circ}$ C  
   above 2.2 megohms .....  $\pm 250$  ppm/ $^{\circ}$ C  
 TCR Tracking ..... 50 ppm/ $^{\circ}$ C  
   maximum; equal values  
 Resistor Tolerance ..... See circuits  
 Operating Temperature ..... -55  $^{\circ}$ C to +125  $^{\circ}$ C  
 Insulation Resistance  
   ..... 10,000 megohms minimum  
 Dielectric Withstanding Voltage  
   ..... 200 VRMS  
 Lead Solderability ..... Meet requirements  
   of MIL-STD-202 Method 208

### Environmental Characteristics

TESTS PER MIL-STD-202 .....  $\Delta R$  MAX.  
 Short Time Overload .....  $\pm 0.25\%$   
 Load Life .....  $\pm 1.00\%$   
 Moisture Resistance .....  $\pm 0.50\%$   
 Resistance to Soldering Heat  
   .....  $\pm 0.25\%$   
 Terminal Strength .....  $\pm 0.25\%$   
 Thermal Shock .....  $\pm 0.25\%$

### Physical Characteristics

Flammability ..... Conforms to UL94V-0  
 Lead Frame Material  
   ..... Copper, solder coated  
 Body Material ..... Novolac epoxy

### How To Order

**43 06 M - 101 - 222**

Model \_\_\_\_\_  
 (43 = Molded SIP)  
 Number of Pins \_\_\_\_\_  
 Physical Configuration  
 (M = Thick Film Medium Profile)  
 Electrical Configuration \_\_\_\_\_  
   • 101 = Bussed  
   • 102 = Isolated  
   • 104 = Dual Terminator  
 Resistance Code \_\_\_\_\_  
   • First 2 digits are significant  
   • Third digit represents the number of zeros to follow.  
 Resistance Tolerance \_\_\_\_\_  
   • Blank =  $\pm 2\%$  (see "Resistance Tolerance" on next page for resistance range)  
   • F =  $\pm 1\%$  (100 ohms - 1 megohm)  
   • D =  $\pm 0.5\%$  (100 ohms - 1 megohm)  
 Terminations \_\_\_\_\_  
   • All electrical configurations EXCEPT 104:  
     LF = Tin-plated (RoHS compliant version)  
   • ONLY electrical configuration 104:  
     L = Tin-plated (RoHS compliant version)  
     Blank = Tin/Lead-plated  
 Consult factory for other available options.

### Package Power Temp. Derating Curve



### Package Power Rating at 70 °C

4304M ..... 0.60 watts  
 4306M ..... 0.90 watts  
 4308M ..... 1.20 watts  
 4310M ..... 1.50 watts

### Typical Part Marking

Represents total content. Layout may vary.



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

### Product Dimensions



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 information on specific applications,  
download Bourns' application notes:

- [DRAM Applications](#)
- [Dual Terminator Resistor Networks](#)
- [R/2R Ladder Networks](#)
- [SCSI Applications](#)

## 4300M Series - Thick Film Molded SIPs

**BOURNS®**

### Isolated Resistors (102 Circuit)

Model 4304M-102-RC (4 Pin)  
Model 4306M-102-RC (6 Pin)  
Model 4308M-102-RC (8 Pin)  
Model 4310M-102-RC (10 Pin)



These models incorporate 2, 3, 4 or 5 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

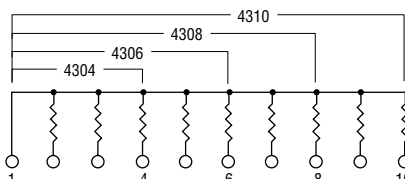
At 70 °C ..... 0.40 watt

### Power Temperature Derating Curve



### Bussed Resistors (101 Circuit)

Model 4304M-101-RC (4 Pin)  
Model 4306M-101-RC (6 Pin)  
Model 4308M-101-RC (8 Pin)  
Model 4310M-101-RC (10 Pin)



These models incorporate 3, 5, 7, or 9 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

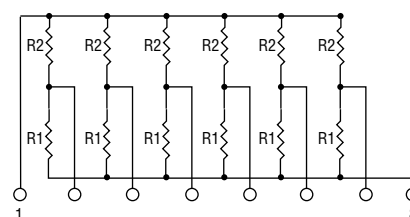
At 70 °C ..... 0.25 watt

### Power Temperature Derating Curve



### Dual Terminator (104 Circuit)

Model 4304M-104-R1/R2  
Model 4306M-104-R1/R2  
Model 4308M-104-R1/R2 (shown)  
Model 4310M-104-R1/R2



4308M-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).

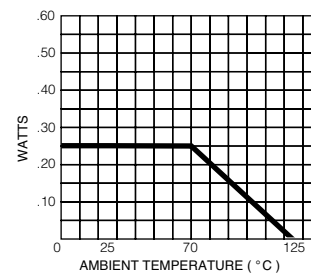
### Resistance Tolerance

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  |

\* Add "F" after resistance code for ±1 % tolerance available from 100 Ω through 1M Ω, or add "D" after resistance code for ±0.5 % tolerance available from 100 Ω through 1M Ω.

Part number suffix examples: -103 = 10K Ω, ±2 %; -103F = 10K Ω, ±1 %; -103D = 10K Ω, ±0.5 %

\*\* 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. 05/12

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



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.