## Features

- Lead free versions available (see How to Order "Termination" option)
- RoHS compliant (lead free version)*
- High profile offers increased power handling
- Compatible with automatic insertion equipment
- Superior package integrity
- Marking on contrasting background for permanent identification
- **Now available with improved tolerance to ±0.5 %**

# 4300H Series - Thick Film Molded SIPs

### Product Characteristics

Resistance Range
.....10 ohms to 10 megohms
Maximum Operating Voltage.....100 V
Temperature Coefficient of Resistance
50 ohms to 2.2 megohms..±100 ppm/°C
below 50 ohms.....±250 ppm/°C
above 2.2 megohms.....±250 ppm/°C
TCR Tracking .....50 ppm/°C maximum; equal values
Resistor Tolerance .....See circuits
Operating Temperature
.....-55 °C to +125 °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 | ΔR MAX. |
|---|---|
| Short Time Overload | ±0.25 % |
| Load Life | ±1.00 % |
| Moisture Resistance | ±0.50 % |
| Resistance to Soldering Heat | ±0.25 % |
| Terminal Strength | ±0.25 % |
| Thermal Shock | ±0.25 % |

### Physical Characteristics

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

### How To Order

**43 06 H - 101 - 222 __ __**

Model
(43 = Molded SIP)

Number of Pins

Physical Config.
(H = Thick Film High Profile)

Electrical Configuration
- 101 = Bussed
- 102 = Isolated
- 104 = Dual Terminator

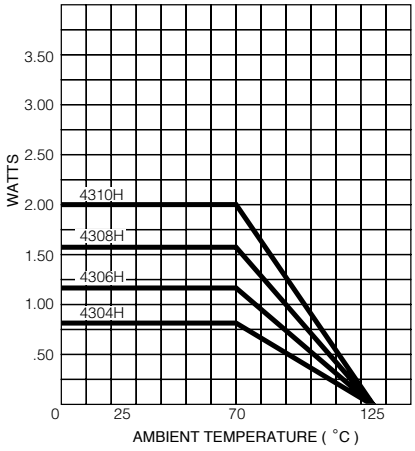
Resistance Code
- First 2 digits are significant
- Third digit represents the number of zeros to follow.

Resistance Tolerance
- Blank = ±2 % (see "Resistance Tolerance" on next page for resistance range)
- F = ±1 % (100 ohms - 1 megohm)
- D = ±0.5 % (100 ohms - 1 megohm)

Terminations
- All electrical configurations EXCEPT 104:
  LF = Tin-plated (lead free)
- ONLY electrical configuration 104:
  L = Tin-plated (lead free)
- Blank = Tin/Lead-plated

Consult factory for other available options.

### Package Power Temp. Derating Curve

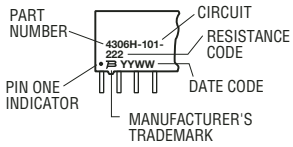



### Package Power Rating at 70 °C

| | |
|---|---|
| 4304H | 0.80 watts |
| 4306H | 1.20 watts |
| 4308H | 1.60 watts |
| 4310H | 2.00 watts |

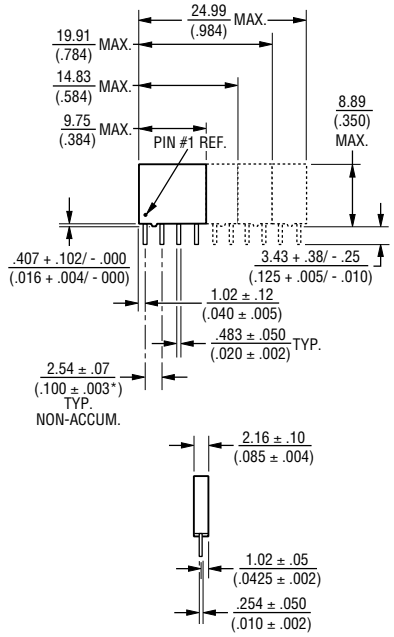
### Typical Part Marking

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.

*RoHS Directive 2002/95/EC Jan 27 2003 including Annex

Specifications are subject to change without notice.
Customers should 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

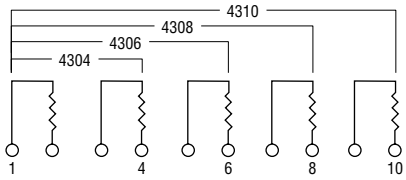
SCSI Applications

# 4300H Series - Thick Film Molded SIPs

BOURNS®

## Isolated Resistors (102 Circuit)

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




These models incorporate 2, 3, 4, or 5 isolated thick-film resistors of equal value, each connected between two pins.

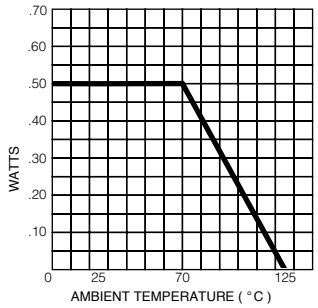
### Resistance Tolerance

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

### Power Rating Per Resistor

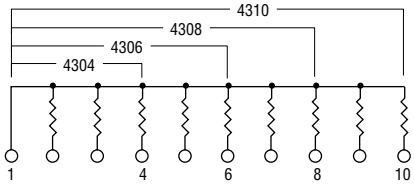
At 70 °C .....0.50 watt

### Power Temperature Derating Curve




## Bussed Resistors (101 Circuit)

**Model 4304H-101-RC (4 Pin)**
**Model 4306H-101-RC (6 Pin)**
**Model 4308H-101-RC (8 Pin)**
**Model 4310H-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.

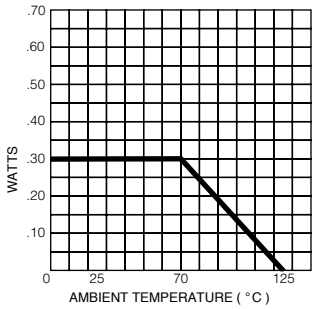
### Resistance Tolerance

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

### Power Rating Per Resistor

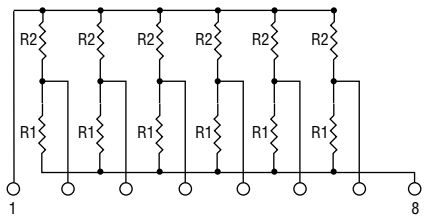
At 70 °C .....0.30 watt

### Power Temperature Derating Curve




## Dual Terminator (104 Circuit)

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




4308H-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).

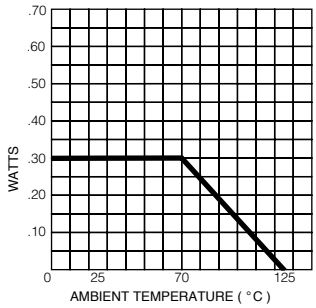
### Resistance Tolerance

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

### Power Rating Per Resistor

At 70 °C .....0.30 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 OHMS THROUGH 1 MEGOHM, OR ADD "D" AFTER RESISTANCE CODE FOR ±0.5 % TOLERANCE AVAILABLE FROM 100 OHMS THROUGH 1 MEGOHM.

PART NUMBER SUFFIX EXAMPLES: -103 = 10K OHMS, ±2 %; -103F = 10K OHMS, ±1 %; -103D = 10K OHMS, ±0.5 %

** NON-STANDARD VALUES AVAILABLE, WITHIN RESISTANCE RANGE.

## Popular Resistance Values (104 Circuit)**

| Resistance (Ohms) | | Code | |
|---|---|---|---|
| $R_1$ | $R_2$ | $R_1$ | $R_2$ |
| 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. 04/06

Specifications are subject to change without notice.
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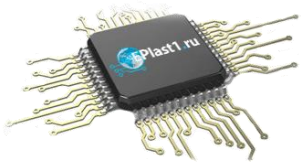
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

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**

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