



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 $\pm 0.5\%$

4300H Series - Thick Film Molded SIPs

Product Characteristics

Resistance Range10 ohms to 10 megohms
 Maximum Operating Voltage.....100 V
 Temperature Coefficient of Resistance
 50 ohms to 2.2 megohms ± 100 ppm/ $^{\circ}$ C
 below 50 ohms ± 250 ppm/ $^{\circ}$ C
 above 2.2 megohms ± 250 ppm/ $^{\circ}$ C
 TCR Tracking50 ppm/ $^{\circ}$ C
 maximum; equal values
 Resistor ToleranceSee 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..... Δ 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

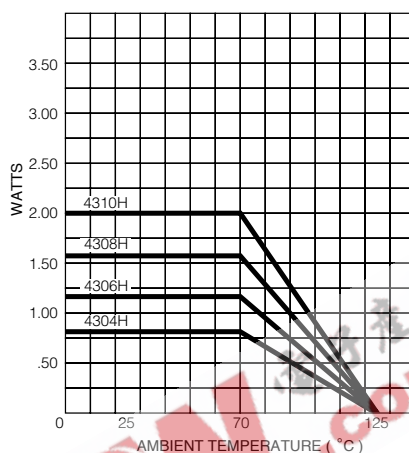
FlammabilityConforms to UL94V-0
 Lead Frame Material
Copper, solder coated
 Body MaterialNovolac epoxy

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 = $\pm 2\%$ (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 (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

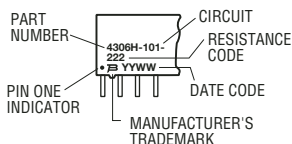


Package Power Rating at 70 °C

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

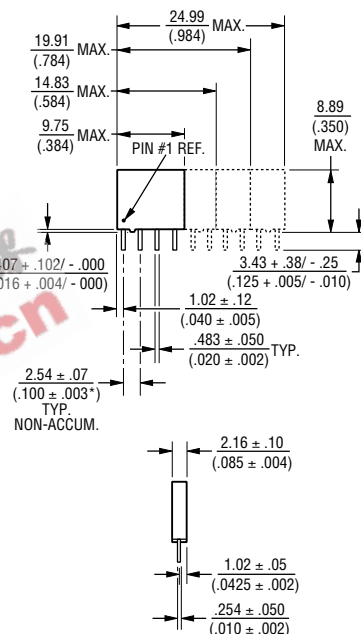
Typical Part Marking

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.

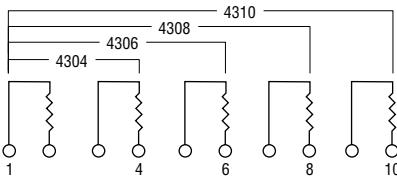
For information on specific applications, download Bourns' application notes:

- [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.

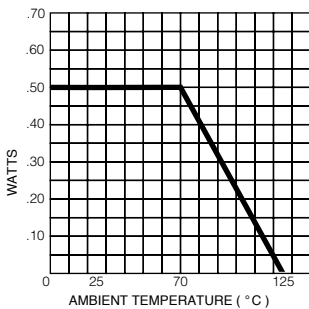
Resistance Tolerance

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

Power Rating Per Resistor

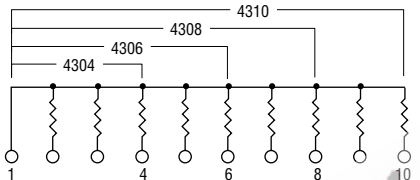
At 70 °C0.50 watt

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.

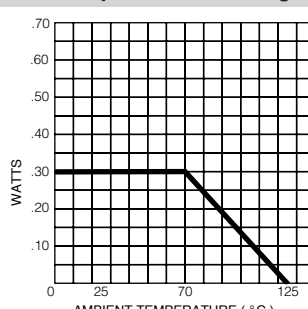
Resistance Tolerance

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

Power Rating Per Resistor

At 70 °C0.30 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 %

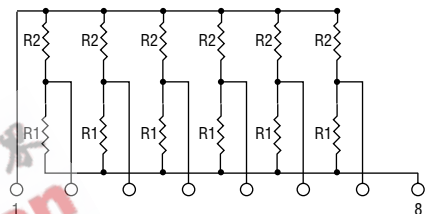
** NON-STANDARD VALUES AVAILABLE, WITHIN RESISTANCE RANGE.

REV. 04/06

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

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).

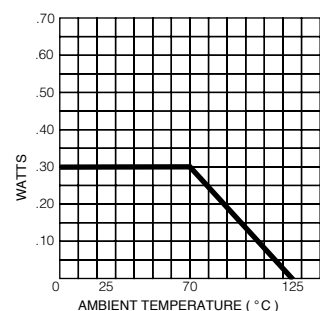
Resistance Tolerance

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

Power Rating Per Resistor

At 70 °C0.30 watt

Power Temperature Derating Curve



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 |