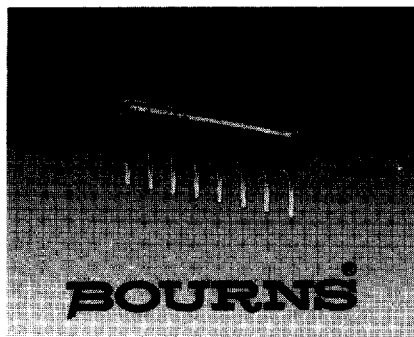




Model 4600X

® Resistor Networks

THICK FILM CONFORMAL SIPs, LOW PROFILE 4 THROUGH 14 PIN

- Low profile is compatible with DIPs
- Wide assortment of pin packages enhances design flexibility
- High temperature lead attachment to withstand reflow temperatures up to 260°C

FOR SCHEMATICS, SEE FOLLOWING PAGE.

Electrical Characteristics

Resistance Range

..... 10 ohms to 10 megohms
Maximum Operating Voltage 100V
Temperature Coefficient of Resistance
50Ω to 2.2 MΩ ±100ppm/°C
below 50Ω ±250ppm/°C
above 2.2 MΩ ±250ppm/°C

Voltage Coefficient

For Values > 1K ohms

..... ±100ppm/V typical
TCR Tracking 50ppm/°C
maximum; equal values

Resistor Tolerance See circuits
Operating Temperature

..... -55°C to +125°C

Environmental Characteristics

TESTS PER MIL-R-83401 ΔR MAX.

Short Time Overload ±0.25%

Load Life ±1.00%

Mechanical Shock ±0.25%

Moisture Resistance ±0.50%

Resistance to Soldering Heat

..... ±0.25%

Terminal Strength ±0.25%

Thermal Shock ±0.25%

Vibration ±0.25%

Insulation Resistance

..... 10,000 megohms minimum

Dielectric Withstanding Voltage

..... 200 VRMS

Lead Solderability/Solvent Resistance

.. Meet requirements of MIL-R-83401

Physical Characteristics

Flammability Conforms to UL94V-0

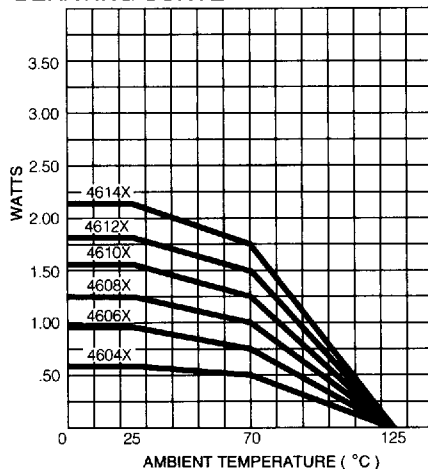
Lead Frame Material

Copper (OLIN 194) 60/40 solder dip

Body Material

... Epoxy resin/anhydride disphenol A

PACKAGE POWER TEMPERATURE DERATING CURVE



Package Power Ratings (Watts)

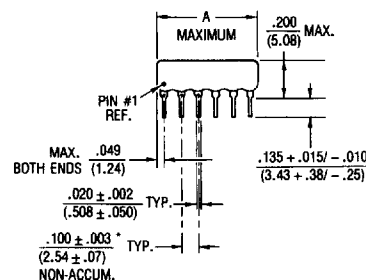
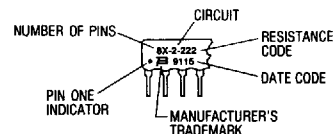
Pkg.	Ambient Temperature		Pkg.	Ambient Temperature	
	70°C	25°C		70°C	25°C
4604X	0.50	0.63	4610X	1.25	1.56
4605X	0.63	0.79	4611X	1.38	1.73
4606X	0.75	0.94	4612X	1.50	1.88
4607X	0.88	1.10	4613X	1.63	2.04
4608X	1.00	1.25	4614X	1.75	2.19
4609X	1.13	1.41			

TYPICAL PART MARKING

Represents total content. Layout may vary.

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

RC = ohmic value, 3-digit resistance code.



Pin Count	A Maximum Inches (mm)
4	.398 (10.11)
5	.498 (12.65)
6	.598 (15.19)
7	.698 (17.73)
8	.798 (20.27)
9	.898 (22.81)
10	.998 (25.35)
11	1.098 (27.89)
12	1.198 (30.43)
13	1.298 (32.97)
14	1.398 (35.51)

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

Governing dimensions are in inches. Dimensions in parentheses are metric (mm) and are approximate.

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

HOW TO ORDER

46 06 X - 101 - 222

Model
(46 = Conformal SIP)

Number of Pins

Physical Configuration
(X = Thick Film Low 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.
- For low-ohmic TCR tracking, consult factory.

Consult factory for other available options.

- 3, 15, 16, 17 and 18 pin counts also available
- Recommended for rosin flux and solvent clean or no clean flux processes
- Gold epoxy provides excellent marking contrast
- Laser marking for permanent identification

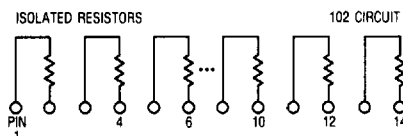
Model 4600X

® Resistor Networks

FOR PRODUCT SPECIFICATIONS, SEE PRIOR PAGE.

ISOLATED RESISTORS (102 CIRCUIT)

Model 4600X-102-RC
4, 6, 8, 10, 12 or 14 Pin



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

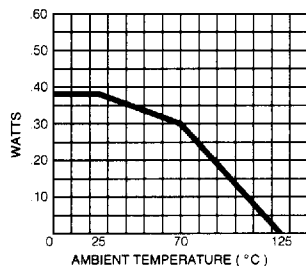
Resistance Tolerance

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

Power Rating per Resistor

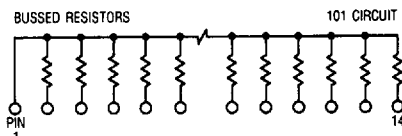
At 70°C 0.30 watt
At 25°C 0.38 watt

POWER TEMPERATURE DERATING CURVE



BUSSED RESISTORS (101 CIRCUIT)

Model 4600X-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.

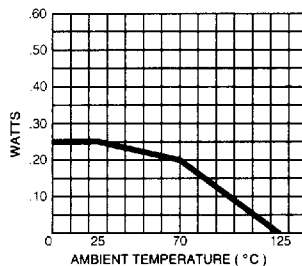
Resistance Tolerance

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

Power Rating per Resistor

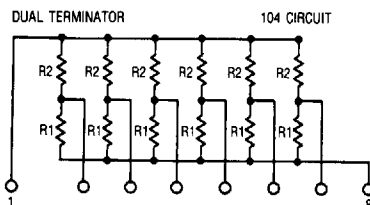
At 70°C 0.20 watt
At 25°C 0.25 watt

POWER TEMPERATURE DERATING CURVE



DUAL TERMINATORS (104 CIRCUIT)

Model 4600X-104-R1/R2
4 through 14 Pin



The 4608X-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).

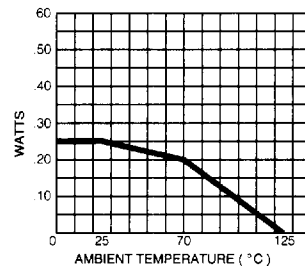
Resistance Tolerance

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

Power Rating per Resistor

At 70°C 0.20 watt
At 25°C 0.25 watt

POWER TEMPERATURE DERATING CURVE



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

* $\pm 1\%$ Tolerance is available by adding suffix code "F" after the resistance code.

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

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

Specifications are subject to change without notice.