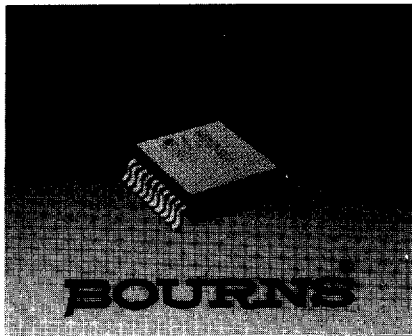




THICK FILM SURFACE MOUNTED WIDE BODY (7.49MM) MOLDED SOL STYLE / 16 AND 20 PINS

- Package compatible with automatic placement equipment
- Compliant leads to reduce solder joint fatiguing
- High temperature lead attachment designed to withstand reflow temperatures up to 260°C
- Tape and reel packaging standard (see page 94 for dimensions)

Model 4400P

® Resistor Networks

Electrical Characteristics

Resistance Range

..... 10 ohms to 2.2 megohms

Maximum Operating Voltage 50V

Temperature Coefficient of Resistance

50ohms and above $\pm 100\text{ppm}/^\circ\text{C}$

below 50 ohms $\pm 250\text{ppm}/^\circ\text{C}$

Voltage Coefficient

For Values > 1K ohms

..... $\pm 100\text{ppm}/\text{V}$ typical

TCR Tracking

..... $50\text{ppm}/^\circ\text{C}$ max.; equal values

Operating Temperature

..... -55°C to $+125^\circ\text{C}$

Environmental Characteristics

TESTS PER MIL-R-83401 ΔR MAX.

Short Time Overload $\pm 0.25\%$

Load Life $\pm 1.00\%$

Mechanical Shock $\pm 0.25\%$

Moisture Resistance $\pm 0.50\%$

Resistance to Soldering Heat

..... $\pm 0.25\%$

Thermal Shock $\pm 0.25\%$

Insulation Resistance

..... 10,000 megohms min.

Dielectric Withstanding Voltage

..... 200 VRMS

Lead Solderability /Solvent Resistance

.. Meet requirements of MIL-R-83401

Physical Characteristics

Flammability Conforms to UL94V-0

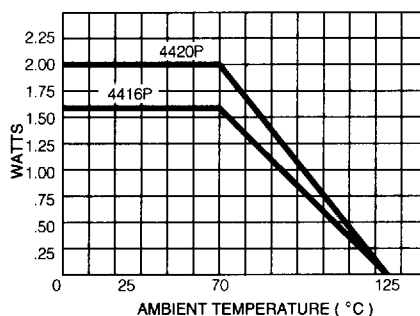
Lead Frame Material Copper

(OLIN 194) 60/40 solder dip

Body Material Novolac epoxy

Standard Packaging Tape and reel

PACKAGE POWER TEMPERATURE DERATING CURVE

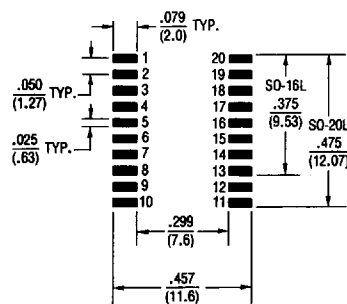


Package Power Rating at 70°C

4420P 2.00 watts

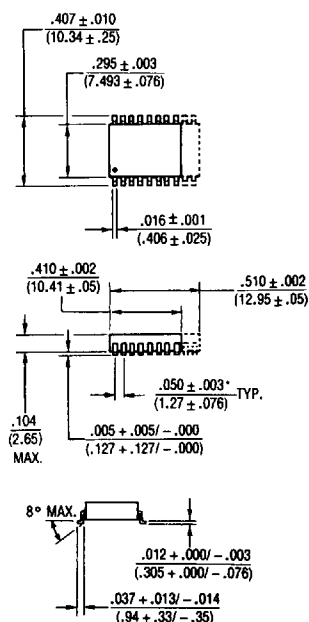
4416P 1.60 watts

RECOMMENDED LAND PATTERN



NOTE: Land pattern dimensions are based on design rules established by the Institute for Interconnecting and Packaging Electronic Circuits in IPC-SM-782.

4420P

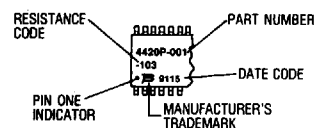


Governing dimensions are in inches. Dimensions in parentheses are metric (mm) and are approximate.

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

TYPICAL PART MARKING

Represents total content. Layout may vary.



HOW TO ORDER

44 20 P - 001 - 103

Model _____
(44 = SMD SOIC Pkg)

Number of Pins _____

Electrical Configuration _____
•001/004 = Isolated*
•002 = Bussed*
•003 = Dual Terminator*

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

*For tube packaging, use T01, T02, T03 or T04.
Consult factory for other available options.
Specifications are subject to change without notice.

- Copper leads for excellent heat dissipation
- Superior package integrity
- Laser marking on contrasting background for permanent identification
- Standard electrical schematics: isolated, bussed, dual terminator
- Custom circuits are available
- For ordering guidelines, see page 94

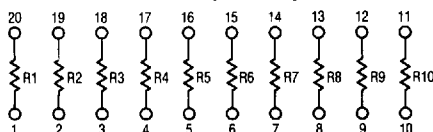
Model 4400P

® Resistor Networks

ISOLATED RESISTORS (001 and 004 CIRCUITS)

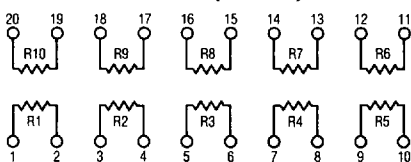
Model 4416P-001

Model 4420P-001 (Shown)



Model 4416P-004

Model 4420P-004 (Shown)



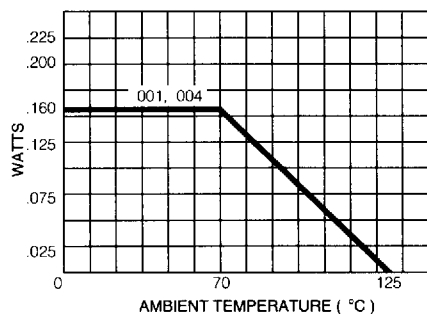
Resistance Tolerance

10 ohms to 49 ohms ± 1 ohm
50 ohms to 2.2 megohms $\pm 2\%$ *

Power Rating per Resistor

001 Circuit at 70°C 0.160 watt
004 Circuit at 70°C 0.160 watt

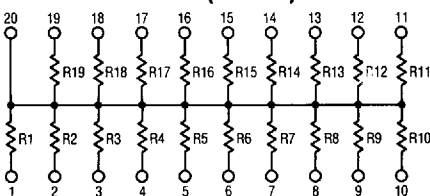
RESISTOR POWER TEMPERATURE DERATING CURVE



BUSSED RESISTORS (002 CIRCUIT)

Model 4416P-002

Model 4420P-002 (Shown)



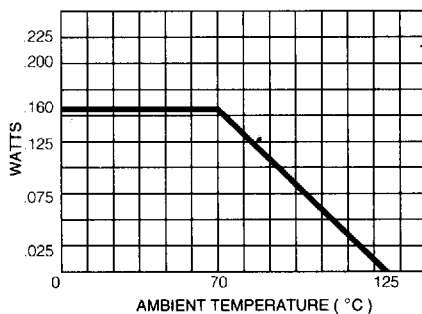
Resistance Tolerance

10 ohms to 49 ohms ± 1 ohm
50 ohms to 2.2 megohms $\pm 2\%$ *

Power Rating per Resistor

002 Circuit at 70°C 0.160 watt

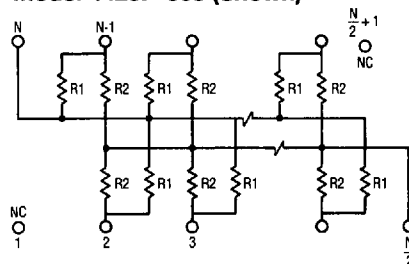
RESISTOR POWER TEMPERATURE DERATING CURVE



DUAL TERMINATOR (003 CIRCUIT)

Model 4416P-003

Model 4420P-003 (Shown)



4420P-003 terminates 16 lines,
convenient for a 16-bit computer bus.

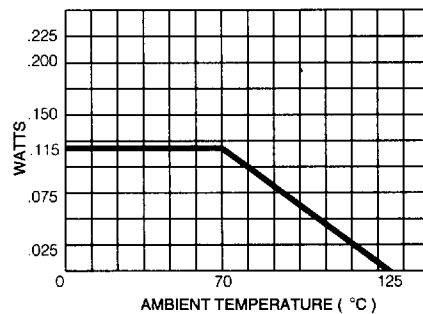
Resistance Tolerance

Below 100 ohms ± 2 ohms
100 ohms to 2.2 megohms $\pm 2\%$ *

Power Rating per Resistor

003 Circuit at 70°C 0.115 watt

RESISTOR POWER TEMPERATURE DERATING CURVE



RESISTANCE VALUES (001, 004, and 002 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

RESISTANCE VALUES (003 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.

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

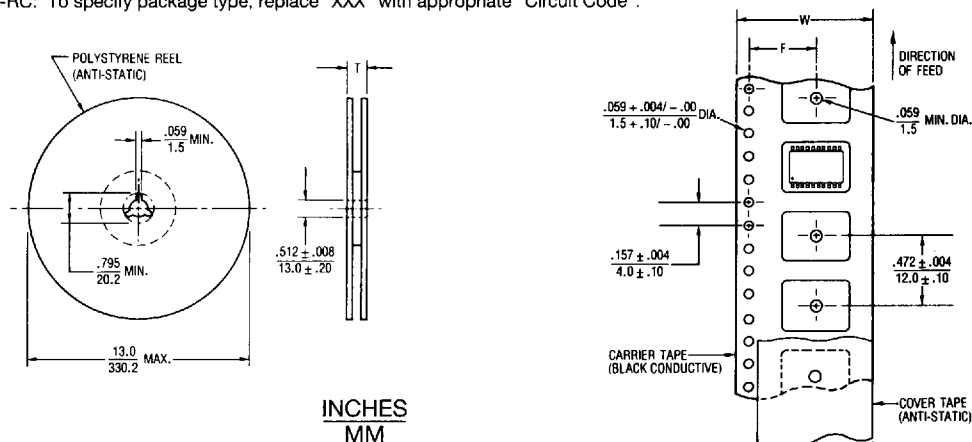
**Non-standard values available, within resistance range.



SURFACE MOUNTED ORDERING GUIDE

Electrical Configuration	*Circuit Codes		Examples
	Tape & Reel	Tubes	
Isolated	001	T01	4816P-001-101
Bussed	002	T02	Isolated Circuit in Tape & Reel Package
Dual Terminated	003	T03	4816P-T01-101
Adj. Isolated	004	T04	Isolated Circuit in Slide Tube Package

*4816P-XXX-RC: To specify package type, replace "XXX" with appropriate "Circuit Code".



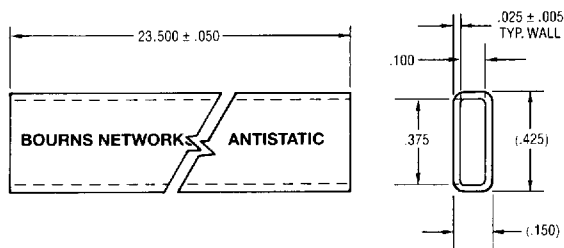
NOTE: Dimensions not specified are per EIA RS-481-2.
Governing dimensions are in millimeters.

Model	Standard Quantity Per Reel	Carrier Tape Width (W)	Cover Tape Width (V)	Reel Width (T)	Pocket Center (F)
4416P	1,500	$.630 \pm .012$ 16.0 ± .30	$.524$ NOM. 13.3	$.882$ MAX. 22.4	$.295 \pm .004$ 7.5 ± .10
4420P	1,500	$.945 \pm .012$ 24.0 ± .30	$.827$ NOM. 21.0	1.197 MAX. 30.4	$.453 \pm .004$ 11.5 ± .10
4814P 4816P 4818P 4820P	2,000				
4908P 4914P 4916P	2500	12mm 12mm 16mm	Contact Factory	Contact Factory	8mm 8mm 8mm

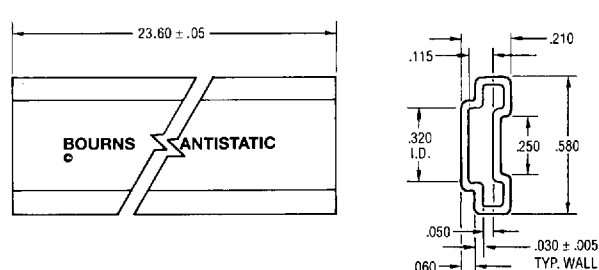
Leader Length = 530 ± 30 mm } Empty Component Pockets
Trailer Length = 500mm Min } Sealed With Cover Tape

INCHES
MM

4800 SERIES TUBES



4400 SERIES TUBES



Specifications are subject to change without notice.