A-19-19
T-62-05

CLA and CLB THIN-FILM EIGHT-RESISTOR ARRAYS

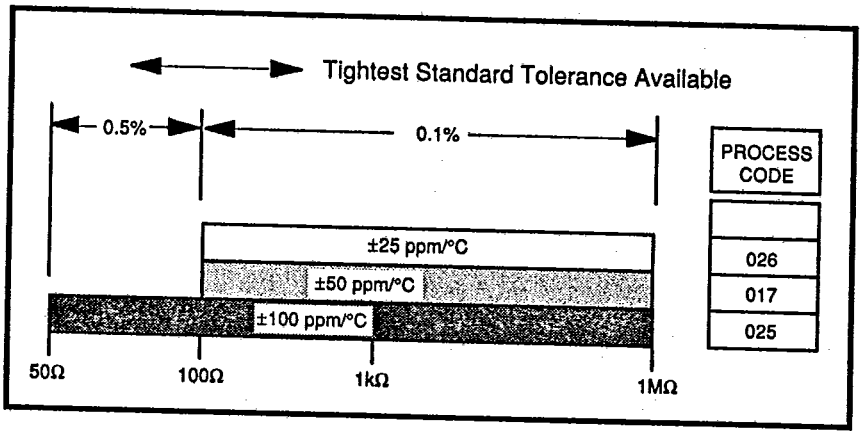
FEATURES

The CLA and CLB resistor arrays are the hybrid equivalent to the eight resistor common connection and isolated networks available in sips or dips. The resistors are spaced on 10 mil centers resulting in minimal space requirements.

These chips are manufactured using state-of-the-art thin-film techniques, are 100% electrically tested and visually inspected to MIL-STD-883.

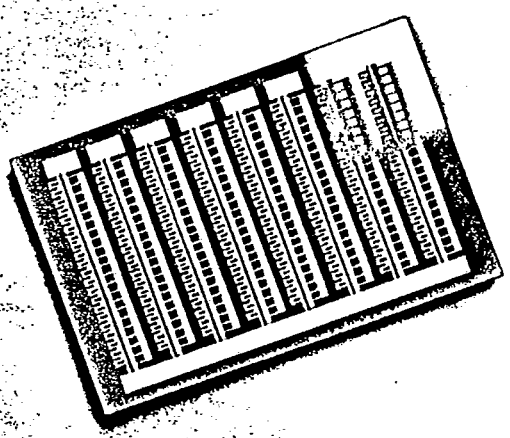
- Eight equal value resistors on a 60 x 90 mil chip
- Excellent TCR tracking
- Resistance range 50Ω to 1 MΩ
- Resistor material tantalum nitride, self-passivating
- Oxidized silicon substrate for good power dissipation
- Low cost per resistor
- Shortened hybrid assembly times
- Reduced hybrid size

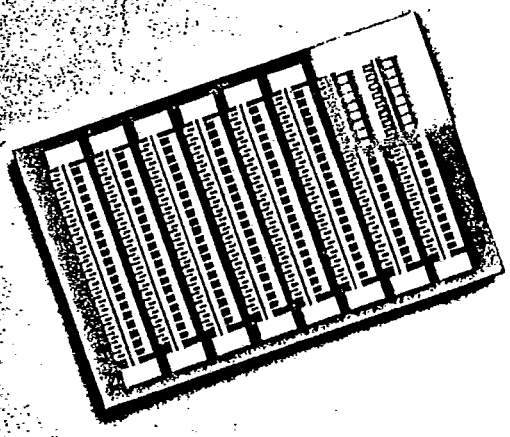
TCR VALUES AND TOLERANCES



ELECTRICAL CHARACTERISTICS

TCR tracking spread	±5 ppm/°C
Noise, MIL-STD-202, Method 308 100Ω - 250 kΩ <100Ω or >251 kΩ	 -35 dB max. -20 dB max.
Moisture resistance, MIL-STD-202, Method 106	±0.5% max. ΔR/R
Stability, 1000 hr., +125 °C, 25 mw Absolute Ratio	 ±0.5% max. ΔR/R ±0.1% max. ΔR/R
Operating temperature range	-55 °C to +125 °C
Thermal shock, MIL-STD-202, Method 107, Test Condition F	±0.1% max. ΔR/R
High temperature exposure, +150 °C, 100 hr.	±0.2% max. ΔR/R
Dielectric voltage breakdown	400 V
Insulation resistance	10^{12}Ω min.
Operating voltage	100 V max.
DC power rating at +70 °C, (derated to zero at +175 °C)	50 mw per resistor
5 x rated power short-time overload, +25 °C, 5 seconds	±0.1% max. ΔR/R





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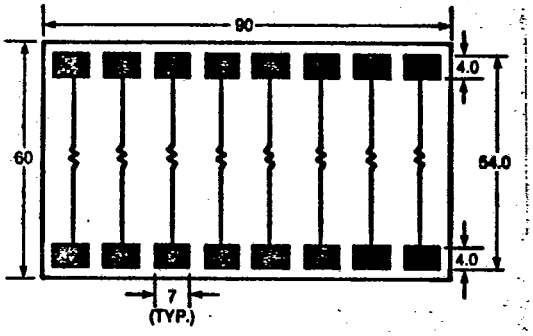
Electro-Films Inc.

MECHANICAL DATA

Chip size		60 ±2 mil x 90 ±2mil (1.50 ±0.05 mm x 2.26 ±0.05 mm)
Chip thickness		8 ±3mil (0.203 ±0.08 mm)
Chip substrate material		Oxidized silicon, 10 kÅ min. SiO_2
Resistor material		Tantalum nitride, (self-passivating)
Bonding pads		4 x 7 mil (0.10 x 0.178 mm)
No. of top pads,	CLA	16
	CLB	9
Pad material		10 kÅ min. aluminum
Backing		None, lapped semiconductor silicon

OPTIONS: Gold backing for eutectic die attach
These chips can be provided in 2 to 12 resistor arrays at proportionately changed sizes.

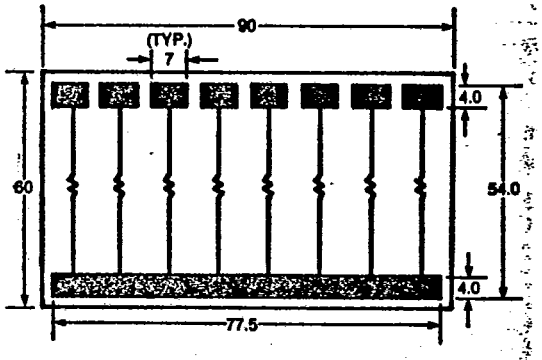
CLA
TYPE A
All Measurements are shown in mils.



APPLICATIONS

The CLA and CLB thin-film resistor arrays are designed for hybrid packages requiring up to eight resistors of the same resistance value and tolerance, as well as excellent TCR tracking. For such hybrids they afford great savings in cost and space.

CLB
TYPE B
All Measurements are shown in mils.



PART NUMBER DESIGNATION

Example: 100% visualled, 10kΩ ±1%, ±100 ppm TCR, CLA Format

P/N: W CLA - 025 - 1000 1 F

- **W** — Inspection/Packaging
  - Use - W for 100% visually inspected parts, per MIL-STD-883
  - X for sample, visually inspected loaded in matrix trays (4% AQL)
  - Y for sample, visually inspected die loaded in vials (4% AQL)
- **CLA** — Product Family
- **025** — Process Code - see MATRIX table
- **1000** — Value - Use First Four significant digits of the Resistance
- **1** — Multiplier Code:

D	0.0001
C	0.001
B	0.01
A	0.1
0	1
1	10
2	100
3	1000
4	10000

- **F** — Tolerance Code:

B	0.1%	J	5.0%
C	0.2%	K	10%
D	0.5%	M	20%
F	1.0%	L	25%
G	2.0%	N	50%
H	2.5%		

Electro-Films, Inc. reserves the right to change specifications without notice.