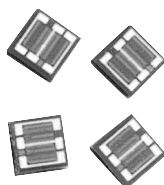


## Dual Value Chip Resistor, Center Tap



 Actual Size

Chromium silicon thin film is very well suited to produce high density and high ohmic value resistor chips. Performances and sizes are greatly improved compared to Thick Film counterparts. The center tap configuration offers a greater flexibility for hybrid layout design.

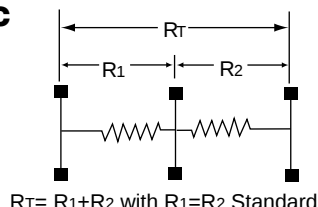
### FEATURES

- Center tap feature
- Small size
- Very high ohmic values
- Good stability

### TYPICAL PERFORMANCE

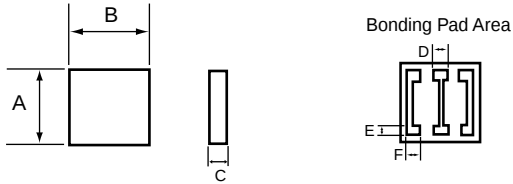
|     | ABS | TRACKING |
|-----|-----|----------|
| TCR | 100 | 5        |
|     | ABS | RATIO    |
| TOL | 0.5 | 0.5      |

### SCHEMATIC



### STANDARD ELECTRICAL SPECIFICATIONS

| TEST                        | SPECIFICATIONS                                                                         | CONDITIONS               |
|-----------------------------|----------------------------------------------------------------------------------------|--------------------------|
| MATERIAL                    | PASSIVATED CHROMIUM SILICON                                                            |                          |
| Resistance Range            | 10K ohms to 5M ohms                                                                    | for $R_T = R_1 + R_2$    |
| TCR: Tracking               | $\pm 5 \text{ ppm}/^\circ\text{C}$                                                     | - 55°C to + 125°C        |
| Absolute                    | $\pm 100 \text{ ppm}/^\circ\text{C}$ ( $\pm 50 \text{ ppm}/^\circ\text{C}$ on request) | - 55°C to + 125°C        |
| Tolerance: Ratio            | 1/1 standard                                                                           |                          |
| Absolute                    | $\pm 0.5\%$ , $\pm 1\%$ , $\pm 2\%$                                                    |                          |
| Matching                    | $\pm 0.5\%$ standard                                                                   |                          |
| Power Rating                | 250mW at + 25°C, 125mW at + 70°C, 50mW at + 125°C                                      |                          |
| Stability                   | $\pm 0.1\%$ typical, $\pm 0.2$ Max.                                                    | 2000 hrs. @ + 70°C Under |
| Voltage Coefficient         | 0.1ppm/Volt                                                                            |                          |
| Working Voltage             | 100 Volts DC on $R_T$                                                                  |                          |
| Operating Temperature Range | - 55°C to + 155°C                                                                      |                          |
| Storage Temperature Range   | - 55°C to + 155°C                                                                      |                          |
| Noise                       | < - 35dB typical                                                                       | MIL-STD-202 Method 308   |
| Thermal EMF                 | < 0.01 $\mu\text{V}/^\circ\text{C}$                                                    |                          |
| Shelf Life Stability        | 200ppm                                                                                 | 1 year @ + 25°C          |

**DIMENSIONS** in inches and millimeters

| DIMENSION | INCHES           | MILLIMETERS     |
|-----------|------------------|-----------------|
| A         | $0.03 \pm 0.004$ | $0.76 \pm 0.10$ |
| B         | $0.03 \pm 0.004$ | $0.76 \pm 0.10$ |
| C         | $0.01 \pm 0.015$ | 0.25 to 0.40    |
| D         | 0.004            | 0.10            |
| E         | 0.006            | 0.15            |
| F         | 0.006            | 0.15            |

| MECHANICAL SPECIFICATIONS |                                         |
|---------------------------|-----------------------------------------|
| Resistive Element         | Chromium Silicon                        |
| Passivation               | Silicon Nitride                         |
| Substrate Material        | Silicon (Consult Vishay for $Al_2O_3$ ) |
| Bonding Pads              | Aluminum                                |

HYBRID

**How to Order**

| Series | R <sub>T</sub> Ohmic Value | Absolute Tolerance                                   | Matching Tolerance |
|--------|----------------------------|------------------------------------------------------|--------------------|
| CS 33  | 100K<br>$R_T = R_1 + R_2$  | $\pm 0.5\%$<br>$\pm 0.5\%$<br>$\pm 1\%$<br>$\pm 2\%$ | 0.5%               |



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