

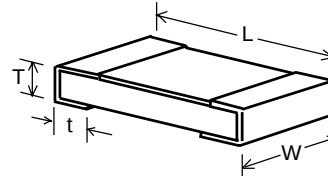
# THICK FILM PRECISION CHIP RESISTORS

## MILITARY GRADE

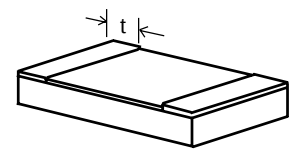
# MCT SERIES



- ❑ Choice of termination materials: 100% tin plated nickel barrier is standard (palladium silver, gold, or tin-lead solder is available)
- ❑ Wraparound termination is standard, single sided termination is available (Option 'S')
- ❑ Wide resistance range: 0.1Ω to 100MΩ
- ❑ 100% Group A screening per MIL-R-55342 available
- ❑ Wide design flexibility for use with hybrid or smd circuitry
- ❑ Custom sizes, high surge, untrimmed chips available
- ❑ Backside metalization available



Wraparound Termination (standard)



Single Face Termination (Opt. S)

### Precision performance to 0.1% 50ppm/°C!

RCD series MCT chip resistors are designed to meet applicable performance requirements of MIL-PRF-55342<sup>1</sup>. Variety of sizes and termination materials allows wide design flexibility. Palladium silver terminations are recommended for use with conductive epoxy, gold is recommended for wire bonding, and tin plated nickel for soldering.

### SPECIFICATIONS

| RCD Type | Wattage @ 70°C** | Voltage Rating | Resistance Range | L* ±.008 [0.2] | W ±.008 [0.2] | t <sup>2</sup>         | T*                     |
|----------|------------------|----------------|------------------|----------------|---------------|------------------------|------------------------|
| MCT0402  | 50MW             | 30V            | 10Ω - 1M         | .039 [1.0]     | .020 [.51]    | .012±.005<br>[.3±.13]  | .014±.006<br>[.35±.15] |
| MCT0505  | 100MW            | 50V            | 1Ω - 10M         | .050 [1.27]    | .050 [1.27]   | .014±.007<br>[.35±.18] | .018±.006<br>[.45±.15] |
| MCT0603  | 100MW            | 40V            | 0.1Ω - 100M      | .060 [1.53]    | .030 [.76]    | .012±.006<br>[.3±.15]  | .018±.006<br>[.45±.15] |
| MCT0805  | 150MW            | 70V            | 0.1Ω - 100M      | .075 [1.91]    | .050 [1.27]   | .016±.008<br>[.4±.2]   | .018±.006<br>[.50±.15] |
| MCT1005  | 200MW            | 100V           | 1Ω - 20M         | .100 [2.54]    | .050 [1.27]   | .018±.008<br>[.45±.2]  | .020±.006<br>[.50±.15] |
| MCT1206  | 250MW            | 125V           | 0.1Ω - 100M      | .124 [3.15]    | .061 [1.55]   | .020±.008<br>[.5±.2]   | .020±.006<br>[.50±.15] |
| MCT1505  | 250MW            | 125V           | 1Ω - 10M         | .150 [3.81]    | .050 [1.27]   | .020±.010<br>[.5±.25]  | .020±.006<br>[.50±.15] |
| MCT1210  | 500MW            | 150V           | 0.1Ω - 100M      | .124 [3.15]    | .100 [2.54]   | .020±.010<br>[.5±.25]  | .020±.006<br>[.50±.15] |
| MCT2010  | 800MW            | 150V           | 0.1Ω - 100M      | .196 [5.0]     | .100 [2.54]   | .020±.010<br>[.5±.25]  | .020±.006<br>[.50±.15] |
| MCT2512  | 1000MW           | 200V           | 0.1Ω - 100M      | .248 [6.3]     | .125 [3.18]   | .020±.010<br>[.5±.25]  | .020±.006<br>[.50±.15] |

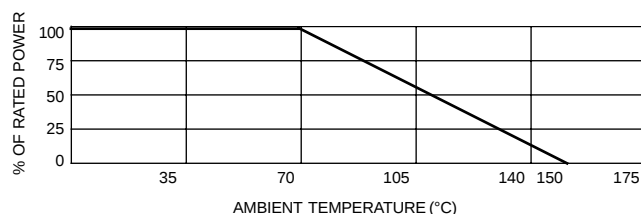
\* Dimension given is for single face termination. Add .004" [1mm] for wraparound termination. \*\* Wattage based on mounting to ceramic substrate, derate by 25% if mounted to a glass epoxy P.C.B.

<sup>1</sup> Military p/n's are given for reference only and do not imply qualification or exact interchangeability. <sup>2</sup> Dimension "t" (underside termination width) applies only to termination type W

### TYPICAL PERFORMANCE CHARACTERISTICS

| Characteristic      | 10Ω to 1MΩ range    |                |               | <10Ω, >1MΩ         |
|---------------------|---------------------|----------------|---------------|--------------------|
| Temp. Coefficient   | ±300 ppm (standard) | ±100ppm (opt.) | ±50ppm (opt.) | ±400ppm (standard) |
| Thermal Shock       | 0.5%                | 0.5%           | 0.5%          | 0.75%              |
| Short Time Overload | 0.5%                | 0.25%          | 0.25%         | 1%                 |
| High Temp. Exposure | 0.5%                | 0.5%           | 0.5%          | 0.75%              |
| Moisture Resistance | 0.5%                | 0.5%           | 0.5%          | 1.5%               |
| Load Life           | 1.0%                | 0.5%           | 0.5%          | 1.5%               |

### DERATING



### PART NUMBER DESIGNATION:

**MCT0805** ☐ - **1001** - **F** **T** **101** **W**

**RCD Type** \_\_\_\_\_

**Options:** S = single sided termination (leave blank for wraparound termination)

**Res. Value:** 4 digit code if tol. is 0.1% to 1% (R100=0.1Ω, 1R00=1Ω, 10R0=10Ω, 1000=100Ω, 1001=1KΩ, 1002=10K, 1003=100K, 1004=1MΩ)  
3 digit code if ≥2% (R10=0.1Ω, 1R0=1Ω, 100= 10Ω, 101=100Ω, 102=1KΩ, 103=10K, 104=100K, 105=1MΩ)

**Tolerance Code:** B=0.1%, C=0.25%, D=0.5%, F=1%, G=2%, J=5%, K=10%, M=20%

**Packaging:** B=bulk, T=tape&reel, W=waffle tray

**Optional TC Characteristic:** 50 = 50ppm, 101 = 100ppm, 201= 200ppm, etc. (leave blank if standard)

**Termination Material:** Standard = W (lead-free 100% Tin with Nickel barrier). Optional = Q (Tin-Lead solder with Ni barrier), P= untinned Palladium Silver, G=Gold