

## CTMFCR Series

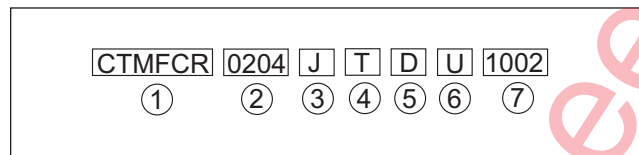
### FEATURES

- Advanced thin film technology.
- Excellent overall stability: Class 0.25
- Force fitted steel caps, tin plated on nickel barrier.
- Pure Sn termination on Ni barrier layer.
- Compatible with lead (Pb)-free and lead containing soldering processes.
- Lead (Pb)-free and RoHS compliant

### APPLICATIONS

- Military
- Automotive
- Telecommunication
- Medical equipment
- Avionics
- Space

### PART NUMBERING



#### 1. Product Type

Product Type	Metal Film Resistor
CTMFCR	

#### 2. Dimensions (LxW)

EIA	Dimensions(LxW)
0204	3.45x1.35mm
0207	5.90x2.20mm

#### 3. Resistance Tolerance

Codes	Resistance Tolerance
Q	±0.02%
A	±0.05%
B	±0.10%
C	±0.25%
D	±0.50%
F	±1.00%
J	±5.00%

#### 4. Packaging

Code	Type
T	Tape & Reel

#### Tape & Reel QTY's

CTMFCR0204 = 3000pcs per reel  
 CTMFCR0207 = 2000pcs per reel



#### 5. TCR

Codes	Type
B	±10 PPM/°C
N	±15 PPM/°C
C	±25 PPM/°C
D	±50 PPM/°C
E	±100 PPM/°C

#### 6. Power Rating

Codes	Type
T	1W
U	1/2W
V	1/4W

#### 7. Resistance

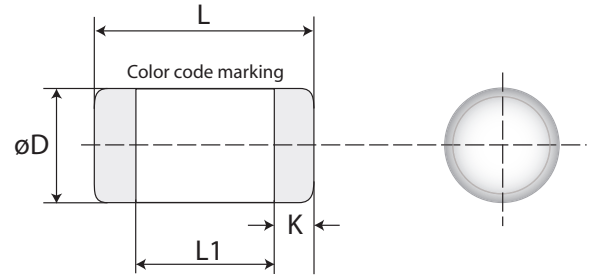
Codes	Type
R100	0.10Ω
0100	10.0Ω
2201	2200Ω
1002	10000Ω
4992	49900Ω
1003	100000Ω
1004	1000000Ω

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### PHYSICAL DIMENSIONS

Codes	L	øD	K	L1 Min
0204	3.45±0.3	1.35±0.2	0.6±0.1	2.00
0207	5.90±0.3	2.20±0.2	1.0±0.1	3.40



### STANDARD ELECTRICAL SPECIFICATIONS

Type	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Resistance Tolerance (±)	Resistance Range	TCR (±PPM/°C)
CTMFCR0204	0.25W	-55°C to +155°C	200V	1%, 5%	0.1Ω-10MΩ	50, 200
				0.5%, 1%, 5%	1.0Ω-1MΩ	50
				0.1%, 0.25%, 0.5%, 1%	50Ω-200KΩ	10, 15, 25, 50
CTMFCR0207	0.50W	-55°C to +155°C	300V	1%, 5%	0.1Ω-10MΩ	50, 100
				0.5%, 1%, 5%	1.0Ω-1MΩ	50
				0.1%, 0.25%, 0.5%, 1%	50Ω-200KΩ	10, 15, 25, 50
				0.1%, 0.25%, 0.5%, 1%	50Ω-300KΩ	15, 25, 50

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### ENVIRONMENTAL CHARACTERISTICS

Test Item		Requirements Permissible Change ( $\Delta R$ )			Test Method
		0.25%	0.50%	0.50%	
Stability for product types	CTMFCR0204	50 $\Omega$ ~220K $\Omega$	10 $\Omega$ ~<50 $\Omega$	>220K $\Omega$	
	CTMFCR0207	50 $\Omega$ ~1M $\Omega$	10 $\Omega$ ~<50 $\Omega$	>1M $\Omega$	
Temperature Coefficient of Resistance		As Spec			MIL-STD-202F Method 304 +25/-55/+25/+125/+25°C
Short Time Overload		$\Delta R \pm 0.1\%$ no visible damage			JIS-C-5202-5.5 RCWV*2.5 or Max Overloading Voltage 5 seconds
Thermal Shock		$\Delta R \pm 0.1\%$	$\Delta R \pm 0.25\%$	$\Delta R \pm 0.1\%$	MIL-STD-202F Method 107G -55°C~150°C, 100 cycles
Load Life		$\Delta R \pm 0.25\%$	$\Delta R \pm 0.25\%$	$\Delta R \pm 0.50\%$	MIL-STD-202F Method 108A RCWV, 70°C, 1.5 hours ON, 0.5 hours OFF, total 1000~1048 hours
Humidity (Steady State)		$\Delta R \pm 0.25\%$	$\Delta R \pm 0.50\%$	$\Delta R \pm 0.50\%$	MIL-STD-202F Method 103B 40°C, 90~95%RH, RCWV 1.5 hours ON, 0.5 hours OFF, total 1000~1048 hours
Resistance to Dry Heat		$\Delta R \pm 0.50\%$	$\Delta R \pm 1.00\%$	$\Delta R \pm 1.00\%$	JIS-C-5202-7.2 96 hours @ +155°C without load
Low Temperature Operation		$\Delta R \pm 0.25\%$	$\Delta R \pm 0.50\%$	$\Delta R \pm 0.50\%$	JIS-C-5202-7.1 1 hour, -65°C, followed by 45 minutes of RCWV
Solderability		95%min coverage			MIL-STD-202F Method 208H 245°C $\pm$ 5°C, 2 $\pm$ 0.5 (sec)
Resistance to Soldering Heat		$\Delta R \pm 0.10\%$	$\Delta R \pm 0.25\%$	$\Delta R \pm 0.10\%$	MIL-STD-202F Method 210E 260 $\pm$ 5°C, 10 $\pm$ 1 seconds
*Storage Temperature: 25 $\pm$ 3°C; Humidity <80%RH					

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Manufacturer of Passive and Discrete Semiconductor Components

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