



## Features

- Radial leaded devices
- Aids compliance with:
  - ITU-T K.20/21/45
  - Telcordia GR-1089-CORE
  - UL 60950, 3rd Ed.
- Narrow resistance tolerance
- Agency recognition: **UL®**
- RoHS compliant\*

## Applications

Used as a secondary overcurrent protection device in:

- Customer Premise Equipment (CPE)
- Central Office (CO)
- Access equipment

# CMF-RL Series - Telecom CPTC Resettable Fuses

## Electrical Characteristics

Model	Induction Voltage Withstand VAC	Rated Voltage Volts	Rated Resistance (RN)		Packaging Resistance Matching Ohms @ 25 °C	Hold Current Amps @ 25 °C	Trip Current Amps @ 25 °C	Imax @ 220 VAC Amps @ 25 °C	Time to Trip @ Imax / 220 VAC Seconds @ 25 °C
			Ohms	Tolerance					
CMF-RL10	600	220	10	±20 %	± 0.5	0.15	0.30	3	≤ 0.45
CMF-RL10-10	600	220	10	±10 %	± 0.5	0.15	0.30	3	≤ 0.45
CMF-RL25	600	220	25	±20 %	± 0.5	0.100	0.200	3	≤ 0.3
CMF-RL25U	600	220	25	±20 %	± 0.5	0.060	0.150	0.9	≤ 0.25
CMF-RL35	600	220	35	±20 %	± 0.5	0.075	0.150	3	≤ 0.15
CMF-RL35-10	600	220	35	±10 %	± 0.5	0.075	0.150	3	≤ 0.15
CMF-RL35A	600	220	35	±10 %	± 0.5	0.075	0.150	3	≤ 0.15
CMF-RL35A-10	600	220	35	±10 %	± 0.5	0.075	0.150	3	≤ 0.15
CMF-RL50	600	220	50	±20 %	± 0.5	0.065	0.150	3	≤ 0.15
CMF-RL50-10	600	220	50	±10 %	± 0.5	0.065	0.150	3	≤ 0.15
CMF-RL50A	600	220	50	±20 %	± 0.5	0.050	0.100	3	≤ 0.1
CMF-RL50A-10	600	220	50	±10 %	± 0.5	0.050	0.100	3	≤ 0.1
CMF-RL55	600	220	55	±20 %	± 0.5	0.065	0.150	3	≤ 0.15
CMF-RL55-10	600	220	55	±10 %	± 0.5	0.065	0.150	3	≤ 0.15
CMF-RL55A	600	220	55	±20 %	± 0.5	0.050	0.100	3	≤ 0.1
CMF-RL55A-10	600	220	55	±10 %	± 0.5	0.050	0.100	3	≤ 0.1

Operating Temperature Range: -40°C to +125 °C

## Test Procedures And Requirements For Model CMF-RL Series

Test	Primary Protection	Test Condition	Requirements*
Mains Power Contact - ITU-T K.20, K.21	None	230 V rms, 10 ohms, 15 Min.	(Ri-Rf) / Ri < ±10 %
Power Induction - ITU-T K.20, K.21	None	600V rms, 600 ohms, 0.2 seconds, 10 cycles, every 1 Min.	(Ri-Rf) / Ri < ±10 %
Power Induction - ITU-T K.20, K.21	GDT	600 V rms, 600 ohms, 1 second, 10 cycles, every 1 Min.	(Ri-Rf) / Ri < ±10 %
Power Induction - ITU-T K.20, K.21	GDT	600 V rms, 200 ohms, 1 second, 10 cycles, every 1 Min.	(Ri-Rf) / Ri < ±10 %
Lightning Surge - ITU-T K.20, K.21		10/700 μs, 25 ohms, 1.0 kV, 10 Tests, every 1 Min.	(Ri-Rf) / Ri < ±10 %
Lightning Surge		10/1000 μs, 40 ohms, 1.0 kV, 30 Tests, every 3 Min.	(Ri-Rf) / Ri < ±10 %

Ri = R initial    Rf = R final

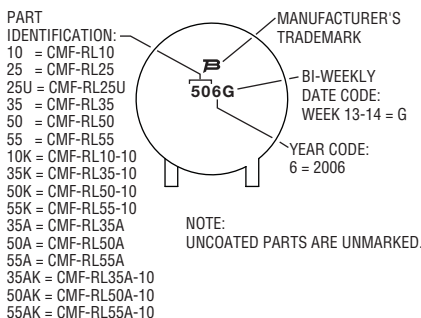
Test	Model	Test Condition	Passing Criteria
UL 1950	CMF-RL50*	600 V / 2.2 A for 30 minutes 600 V / 7 A for 5 seconds 600 V / 40 A for 1.5 seconds	No charring cheesecloth indicator

\*For other models, please contact Bourns.

UL File Number ..... E307915 ..... <http://www.ul.com/> Follow link to Certifications, then UL File No., enter E307915

## Typical Part Marking

Represents total content. Layout may vary.



## How to Order

Product Designator **CMF - RL 50**

Style **A - 10 - 0**

RL = Telecom Radial Leaded CPTC

Rated Resistance (RN) \_\_\_\_\_  
 10-55 (10 Ohms - 55 Ohms)

Uncoated Option \_\_\_\_\_  
 U = Uncoated Part    Blank = Standard Part

Size Option \_\_\_\_\_  
 A = Reduced Size    Blank = Standard Size

Rated Resistance Tolerance \_\_\_\_\_  
 -10 = ±10 %    Blank = ±20 % (Standard)

Packaging Options \_\_\_\_\_  
 - 0 = Bulk Packaging - Plastic Tray

Alternative tolerances, resistances and lead lengths available on request.

\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011. Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

# CMF-RL Series - Telecom CPTC Resettable Fuses

**BOURNS®**

## Product Dimensions

Model	A	B	C	D	E	F	Characteristics	
	Max.	Max.	Max.	Nom.	Nom.	Nom.	Material	Style
CMF-RL10	$\frac{9.5}{(0.374)}$	$\frac{4.5}{(0.177)}$	$\frac{13.5}{(0.531)}$	$\frac{3.5}{(0.138)}$	$\frac{0.6 \pm 0.05}{(0.024 \pm 0.019)}$	$\frac{5.0 \pm 0.2}{(0.197 \pm 0.008)}$	Sn/Cu	1
CMF-RL25	$\frac{9.8}{(0.386)}$	$\frac{5.0}{(0.197)}$	$\frac{13.5}{(0.531)}$	$\frac{3.0 - 3.5}{(0.118 - 0.138)}$	$\frac{0.6 \pm 0.05}{(0.024 \pm 0.019)}$	$\frac{5.0 \pm 0.3}{(0.197 \pm 0.012)}$	Sn/Cu	1
CMF-RL25U	$\frac{5.2}{(0.205)}$	$\frac{3.5}{(0.138)}$	$\frac{5.2}{(0.205)}$	$\frac{3.8}{(0.150)}$	$\frac{0.6 \pm 0.05}{(0.024 \pm 0.019)}$	$\frac{5.0 \pm 0.2}{(0.197 \pm 0.008)}$	Sn/Cu	2
CMF-RL35	$\frac{9.8}{(0.386)}$	$\frac{5.0}{(0.197)}$	$\frac{13.5}{(0.531)}$	$\frac{3.0 - 3.5}{(0.118 - 0.138)}$	$\frac{0.6 \pm 0.05}{(0.024 \pm 0.019)}$	$\frac{5.08 \pm 0.3}{(0.200 \pm 0.012)}$	Sn/Cu	1
CMF-RL35A	$\frac{7.5}{(0.295)}$	$\frac{5.6}{(0.220)}$	$\frac{13.0}{(0.512)}$	$\frac{3.5}{(0.138)}$	$\frac{0.6 \pm 0.05}{(0.024 \pm 0.019)}$	$\frac{5.0 \pm 0.2}{(0.197 \pm 0.008)}$	Sn/Cu	1
CMF-RL50	$\frac{9.8}{(0.386)}$	$\frac{5.0}{(0.197)}$	$\frac{13.5}{(0.531)}$	$\frac{3.0 - 3.5}{(0.118 - 0.138)}$	$\frac{0.6 \pm 0.05}{(0.024 \pm 0.019)}$	$\frac{5.08 \pm 0.3}{(0.200 \pm 0.012)}$	Sn/Cu	1
CMF-RL50A	$\frac{7.5}{(0.295)}$	$\frac{5.6}{(0.220)}$	$\frac{13.0}{(0.512)}$	$\frac{3.5}{(0.138)}$	$\frac{0.6 \pm 0.05}{(0.024 \pm 0.019)}$	$\frac{5.0 \pm 0.2}{(0.197 \pm 0.008)}$	Sn/Cu	1
CMF-RL55	$\frac{9.8}{(0.386)}$	$\frac{5.0}{(0.197)}$	$\frac{13.5}{(0.531)}$	$\frac{3.0 - 3.5}{(0.118 - 0.138)}$	$\frac{0.6 \pm 0.05}{(0.024 \pm 0.019)}$	$\frac{5.08 \pm 0.3}{(0.200 \pm 0.012)}$	Sn/Cu	1
CMF-RL55A	$\frac{7.5}{(0.295)}$	$\frac{5.6}{(0.220)}$	$\frac{13.0}{(0.512)}$	$\frac{3.5}{(0.138)}$	$\frac{0.6 \pm 0.05}{(0.024 \pm 0.019)}$	$\frac{5.0 \pm 0.2}{(0.197 \pm 0.008)}$	Sn/Cu	1

Packaging:

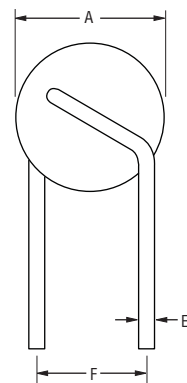
BULK: CMF-RL25U & CMF-RL50A = 700 pcs. per bag; all other models = 600 pcs. per tray.

DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

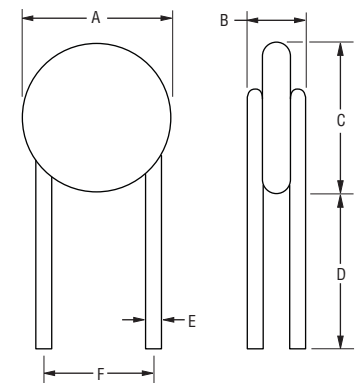
Style 1



Style 2



Style 3



CMF-RL SERIES, REV. S, 03/13

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