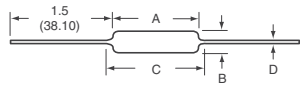


VISHAY Dale CMF Series Industrial Metal Film Resistors



- Features:**
- Small size – conformal coated
 - Flame retardant epoxy coating
 - Controlled temperature coefficient
 - Excellent high frequency characteristics
 - Exceptionally low noise; typically 0.10 μV/V
 - Low voltage coefficient to ±5ppm/Volt

Technical Specifications		
Series	CMF50	CMF55
Maximum Working Voltage	≤ 200V	≤ 250V
Insulation Voltage (1 min.)	≥ 500V _{eff}	> 500V _{eff}
Maximum Voltage Coefficient	±5ppm/Volt	±5ppm/Volt
Dielectric Strength	450VAC	450VAC
Insulation Resistance	≥ 10 ¹¹ Ω	≥ 10 ¹¹ Ω
Operating Temperature Range (°C)	-55 – 175	-55 – 175
Temperature Coefficient	50ppm	50ppm

Series	Dimensions – Inches (mm)			
	A	B	C (Max.)	D
CMF50	0.150 ± 0.020 (3.81 ± 0.51)	0.065 ± 0.015 (1.65 ± 0.38)	0.187 (4.75)	0.016 ± 0.002 (0.41 ± 0.05)
CMF55	0.240 ± 0.020 (6.10 ± 0.51)	0.090 ± 0.008 (2.29 ± 0.20)	0.278 (7.06)	0.025 ± 0.002 (0.64 ± 0.05)

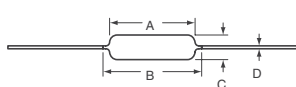
CMF50 and CMF55 Series Resistor Values

10.0	16.9	28.7	48.7	82.5	140	237	402	681	1.15K	1.96K	3.32K	5.62K	9.53K	16.2K	27.4K	46.4K	78.7K	133K	226K	383K	649K	1.10M	1.87M	3.16M
10.2	17.4	29.4	49.9	84.5	143	243	412	698	1.18K	2.00K	3.40K	5.76K	9.76K	16.5K	28.0K	47.5K	80.6K	137K	232K	392K	665K	1.13M	1.91M	3.24M
10.5	17.8	30.1	51.1	86.6	147	249	422	715	1.21K	2.05K	3.48K	5.90K	10.0K	16.9K	28.7K	48.7K	82.5K	140K	237K	402K	681K	1.15M	1.96M	3.32M
10.7	18.2	30.9	52.3	88.7	150	255	432	732	1.24K	2.10K	3.57K	6.04K	10.2K	17.4K	29.4K	49.9K	84.5K	143K	243K	412K	698K	1.18M	2.00M	3.40M
11.0	18.7	31.6	53.6	90.9	154	261	442	750	1.27K	2.15K	3.65K	6.19K	10.5K	17.8K	30.1K	51.1K	86.6K	147K	249K	422K	715K	1.21M	2.05M	3.48M
11.3	19.1	32.4	54.9	93.1	158	267	453	768	1.30K	2.21K	3.74K	6.34K	10.7K	18.2K	30.9K	52.3K	88.7K	150K	255K	432K	732K	1.24M	2.10M	3.57M
11.5	19.6	33.2	56.2	95.3	162	274	464	787	1.33K	2.26K	3.83K	6.49K	11.0K	18.7K	31.6K	53.6K	90.9K	154K	261K	442K	750K	1.27M	2.15M	3.65M
11.8	20.0	34.0	57.6	97.6	165	280	475	806	1.37K	2.32K	3.92K	6.65K	11.3K	19.1K	32.4K	54.9K	93.1K	158K	267K	453K	768K	1.30M	2.21M	3.74M
12.1	20.5	34.8	59.0	100	169	287	487	825	1.40K	2.37K	4.02K	6.81K	11.5K	19.6K	33.2K	56.2K	95.3K	162K	274K	464K	787K	1.33M	2.26M	3.83M
12.4	21.0	35.7	60.4	102	174	294	499	845	1.43K	2.43K	4.12K	6.98K	11.8K	20.0K	34.0K	57.6K	97.6K	165K	280K	475K	806K	1.37M	2.32M	3.92M
12.7	21.5	36.5	61.9	105	178	301	511	866	1.47K	2.49K	4.22K	7.15K	12.1K	20.5K	34.8K	59.0K	100K	169K	287K	487K	825K	1.40M	2.37M	4.02M
13.0	22.1	37.4	63.4	107	182	309	523	887	1.50K	2.55K	4.32K	7.32K	12.4K	21.0K	35.7K	60.4K	102K	174K	294K	499K	845K	1.43M	2.43M	4.12M
13.3	22.6	38.3	64.9	110	187	316	536	909	1.54K	2.61K	4.42K	7.50K	12.7K	21.5K	36.5K	61.9K	105K	178K	301K	511K	866K	1.47M	2.49M	4.22M
13.7	23.2	39.2	66.5	113	191	324	549	931	1.58K	2.67K	4.53K	7.68K	13.0K	22.1K	37.4K	63.4K	107K	182K	309K	523K	887K	1.50M	2.55M	4.32M
14.0	23.7	40.2	68.1	115	196	332	562	953	1.62K	2.74K	4.64K	7.87K	13.3K	22.6K	38.3K	64.9K	110K	187K	316K	536K	909K	1.54M	2.61M	4.42M
14.3	24.3	41.2	69.8	118	200	340	576	976	1.65K	2.80K	4.75K	8.06K	13.7K	23.2K	39.2K	66.5K	113K	191K	324K	549K	931K	1.58M	2.67M	4.53M
14.7	24.9	42.2	71.5	121	205	348	590	1.00K	1.69K	2.87K	4.87K	8.25K	14.0K	23.7K	40.2K	68.1K	115K	196K	332K	562K	953K	1.62M	2.74M	4.64M
15.0	25.5	43.2	73.2	124	210	357	604	1.02K	1.74K	2.94K	4.99K	8.45K	14.3K	24.3K	41.2K	69.8K	118K	200K	340K	576K	976K	1.65M	2.80M	4.75M
15.4	26.1	44.2	75.0	127	215	365	619	1.05K	1.78K	3.01K	5.11K	8.66K	14.7K	24.9K	42.2K	71.5K	121K	205K	348K	590K	1.00M	1.69M	2.87M	4.87M
15.8	26.7	45.3	76.8	130	221	374	634	1.07K	1.82K	3.09K	5.23K	8.87K	15.0K	25.5K	43.2K	73.2K	124K	210K	357K	604K	1.02M	1.74M	2.94M	4.99M
16.2	27.4	46.4	78.7	133	226	383	649	1.10K	1.87K	3.16K	5.36K	9.09K	15.4K	26.1K	44.2K	75.0K	127K	215K	365K	619K	1.05M	1.78M	3.01M	
16.5	28.0	47.5	80.6	137	232	392	665	1.13K	1.91K	3.24K	5.49K	9.31K	15.8K	26.7K	45.3K	76.8K	130K	221K	374K	634K	1.07M	1.82M	3.09M	

Description	Wattage @ 70°C	Resistance Tolerance	Value Range (Ω)	Digi-Key Part No. ‡	Cut Tape Pricing			Digi-Key Part No. ‡	Tape and Reel		Vishay Part No.
					1	10	50		Qty.	Pricing	
CMF50	0.25W	1%	10.0 – 100K 102K – 499K	CMF(Value)QFCT-ND	.29	2.57	11.97	CMF(Value)QFTR-ND	1,000	187.00	CMF50xxxxxFHEB
				CMF(Value)QFCT-ND	.45	4.03	18.80	CMF(Value)QFTR-ND	1,000	298.00	CMF50xxxxxFHEB
CMF55	0.50W	1%	10.0 – 1.00M 1.02M – 4.99M	CMF(Value)HFCT-ND	.17	1.49	6.93	CMF(Value)HFTR-ND	1,000	105.00	CMF55xxxxxFHEB
				CMF(Value)HFCT-ND	.91	8.19	38.22	CMF(Value)HFTR-ND	1,000	612.00	CMF55xxxxxFHEB

‡ For complete part number, substitute the value from Standard Resistor Values chart for (Value).

CW Series Silicone Coated Wirewound Resistors



- Features:**
- High performance for low cost
 - High temperature silicone coating
 - Complete welded construction
 - Excellent stability in operation
 - High power to size ratio
 - Operating Temperature Range: -65°C – 350°C

Series	Dimensions (mm)			
	A	B (Max.)	C	D
CW001	10.31	11.10	2.39	.508
CW02C	12.70	15.06	5.54	1.02
CW02B	14.27	15.80	4.78	.813
CW005	22.22	25.40	7.92	1.02
CW010	45.24	47.62	9.52	1.02

Series	Temperature Coefficient (ppm/°C)	Short Time Overload	
CW001	.150 – 500/±90	5X Rated Power for 5 Seconds	
	1.00 – 4.00/±50		
	10.0 – 4.7K/±30		
CW02C	.100 – 510/±90		
	1.00 – 4.00/±50		
	10.0 – 15K/±30		
CW02B	.100 – 750/±90	10X Rated Power for 5 Seconds	
	1.00 – 7.50/±50		
	10.0 – 15K/±30		
CW005	.100 – 750/±90		10X Rated Power for 5 Seconds
	1.00 – 7.50/±50		
	10.0 – 50K/±30		
CW010	.100 – 500/±90	10X Rated Power for 5 Seconds	
	1.00 – 7.50/±50		
	10.0 – 100K/±30		

CW001, 5%, CWA Resistance Values

.30†	15	68	330	4.7K†
.50†	20†	100†	390	
1.0	40	150†	560†	
10†	47†	270	820	

CW02B, 5%, CWC Resistance Values

.10†	.33	4.0	18	30	47	100†	200	300	500	750	1.2K	2.5K	4.0K	6.8K	10K
.15†	.75	5.0†	20	33	50†	120	220	390†	560	800	1.5K	2.7K	4.7K†	7.0K	12.5K
.20†	2.0†	7.5†	22	35	56†	125	225	350†	600	820	1.8K	3.0K	5.0K	7.5K	15K
.25	2.5	12	25	39	68	150†	250†	390	680	900	2.0K	3.5K	5.6K	8.2K	
.30†	3.0	15†	27	40	75	180†	270	400	700	1.1K	2.2K	3.9K	6.0K	9.0K	

CW02C, 5%, CWB Resistance Values

.20	4.0	33†	150†	330	2.2K	8.2K
.30	12†	35	180	350	2.7K	10K†
.33	15†	50†	200	390	3.9K	15K
.51	18	68†	220†	470	4.7K	
1.5	20	82	250	820	5.0K	
2.0†	22†	100†	270†	1.0K	5.6K†	
3.0	30	120	300	2.0K	6.8K	

CW005, 5%, CWD Resistance Values

.10†	1.0	5.0	22	40	120†	250†	500	820	2.0K	4.0K†	7.5K†	18K†
.30	1.5	5.5	25	47	125	270†	550	900	2.2K	4.7K	8.0K	20K†
.30	2.0	7.5†	27	50†	150	330	600	1.0K†	2.5K	5.0K	8.2K	25K†
.33	2.5	10†	30	68†	180	350	680	1.1K	2.7K	5.6K	9.0K	40K†
.50†	3.0	12	33	75	200†	390	700	1.2K	3.0K	6.0K	10K†	50K†
.51	4.0	15	35†	82	220	400	750	1.5K	3.5K	6.8K	12.5K	
.75	4.7	18	39†	100†	225	470	800	1.8K	3.9K	7.0K	15K†	

CW010, 5%, CWE Resistance Values

.10	2.0†	15	33	82	220	470†	2.0K†	4.0K	8.2K	40K†
.30	3.0†	20	40	100†	250	500	2.5K	5.0K	10K	50K
.30	4.7†	20	40	120	270	820	3.0	6.0	12K	60K
.33	5.0†	22	47	125	300	1.0K†	3.3	6.6	13K	65K
.50	7.5†	25	50	150	330	1.2K	4.0	8.0	15K	75K
.51	10†	27	56	180	350	1.5K	5.0	10K	20K	100K
.75	15	39†	82	220	470	2.0K	6.0	12K	30K	150K
1.0	20	50†	100	250	500	2.5K	7.5	15K	40K	200K
1.5	30	75†	150	330	600	3.0K	10	20K	60K	300K
2.0	40	100†	200	400	800	4.0K	15	30K	100K	500K
3.0	60	150†	300	600	1.2K	1.5K	20	40K	150K	750K
4.0	80	200†	400	800	1.5K	2.0K	30	60K	200K	1.0M
5.0	100	250†	500	1.0K	2.5K	3.0K	40	80K	250K	1.25M
7.5	150	375†	750	1.5K	3.75K	5.0K	60	120K	375K	1.875M
10	200	500†	1.0K	2.0K	5.0K	7.5K	80	160K	500K	2.5M
15	300	750†	1.5K	3.0K	7.5K	10K				