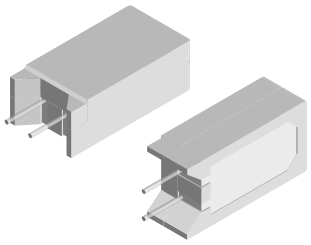
CPCL, CPCC, CPCP, CPCF

Vishay Dale

Wirewound Resistors, Commercial Power, Vertical Mount



FEATURES

- Space saving
- Direct mounting on printed circuit board
- Meets or exceeds requirements of EIA-Standard RS-344
- High power to size ratio
- Special inorganic potting compound and ceramic case provide high thermal conductivity in a fireproof package

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	POWER RATING $P_{70°C}$ W	TOLERANCE ± %	RESISTANCE RANGE Ω	WEIGHT (Typical) g
CPCL-2	2	5, 10	0.01 - 0.10	3.5
CPCC-2	2	5, 10	0.1 - 500	3.5
CPCP-2	2	1, 5	0.1 - 4k	3.5
CPCF-2	2	1, 5, 10	501 - 150k	3.5
CPCL-3	3	5, 10	0.01 - 0.10	5.5
CPCC-3	3	5, 10	0.1 - 800	5.5
CPCP-3	3	1,5	0.1 - 5k	5.5
CPCF-3	3	1, 5, 10	801 - 150k	5.5
CPCL-5	5	5, 10	0.01 - 0.10	6.9
CPCC-5	5	5, 10	0.1 - 800	6.9
CPCP-5	5	1, 5	0.1 - 5k	6.9
CPCF-5	5	1, 5, 10	801 - 150k	6.9
CPCL-10	10	5, 10	0.01 - 0.10	14.3
CPCC-10	10	5, 10	0.1 - 1.5k	14.3
CPCP-10	10	1, 5	0.1 - 8k	14.3

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CPCL-x	CPCC-x	CPCP-x	CPCF-x
Temperature Coefficient	ppm/°C	0.01Ω - 0.049Ω = ± 400 0.05Ω - 0.1Ω = ± 100	0.1Ω - 0.99Ω = ± 600 1.0Ω and above = ± 300	0.1Ω - 0.99Ω = ± 90 1.0Ω - 9.9Ω = ± 50 10Ω and above = ± 20	± 50 all values
Short Time Overload	-	5 x rated power for 5 seconds			
Maximum Working Voltage	V	$(P \times R)^{1/2}$			
Operating Temperature Range	°C	- 65/+ 275			- 65/+ 225
Terminal Strength	lb	10 minimum			
Dielectric Withstanding Voltage	V_{AC}	1000			

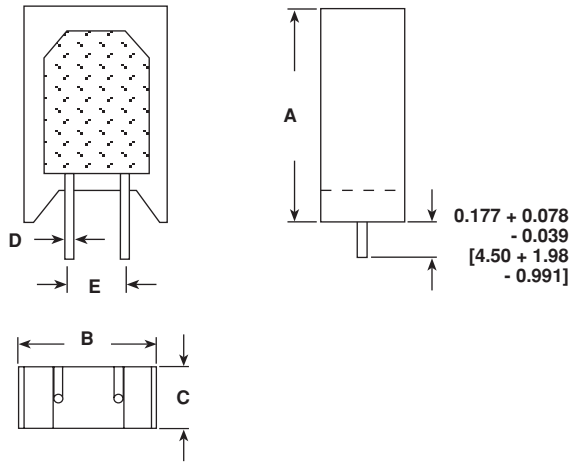
ORDERING INFORMATION

CPCL-10	0.1Ω	5%
MODEL	RESISTANCE Ω	TOLERANCE ± %

CPCL = Low value
CPCC = Commercial (fiberglass core)
CPCP = Precision wirewound (ceramic core)
CPCF = Film (ceramic core)

For technical questions, contact ww2aresistors@vishay.com

DIMENSIONS



MODEL	DIMENSIONS in inches [millimeters]				
	A ±0.031 [0.794]	B ±0.031 [0.794]	C + 0.043 [1.09] -0.012 [0.305]	D ±0.005 [0.127]	E ±0.040 [1.02]
CPCL-2 CPCC-2 CPCP-2 CPCF-2	0.807 [20.50]	0.433 [11.00]	0.276 [7.01]	0.032 [0.813]	0.197 [5.00]
CPCL-3 CPCC-3 CPCP-3 CPCF-3	0.984 [24.99]	0.472 [11.99]	0.315 [8.00]	0.032 [0.813]	0.197 [5.00]
CPCL-5 CPCC-5 CPCP-5 CPCF-5	1.003 [25.48]	0.512 [13.00]	0.354 [8.99]	0.032 [0.813]	0.197 [5.00]
CPCL-10 CPCP-10	1.372 [34.85]	0.633 [16.08]	0.485 [12.32]	0.040 [1.02]	0.290 [7.37]
CPCC-10				0.036 [0.914]	

MATERIAL SPECIFICATIONS

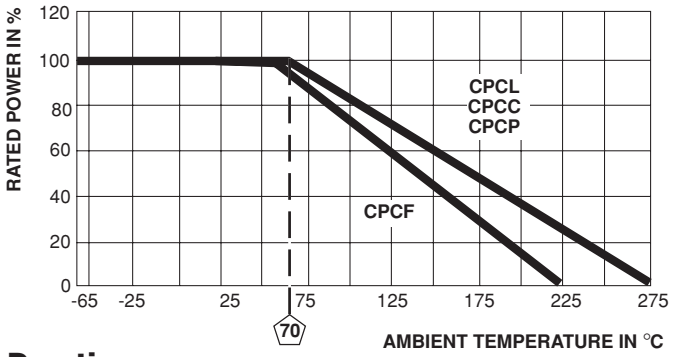
Part Marking: DALE: Model, Wattage, Value, Tolerance, Date Code

CPCL: Element: Self-supporting copper-nickel alloy or nickel-chrome alloy, depending on resistance value
Body: Steatite ceramic case with inorganic potting compound
Terminals: Tinned copper

CPCC: Element: Copper-nickel alloy or nickel-chrome alloy, depending on resistance value
Core: Woven fiberglass
Body: Steatite ceramic case with inorganic potting compound
End Caps: Tin plated steel
Terminals: Tinned copper

CPCP: Element: Copper-nickel alloy or nickel-chrome alloy, depending on resistance value
Core: Ceramic
Body: Steatite ceramic case with inorganic potting compound
End Caps: Stainless steel
Terminals: Tinned Copperweld®

CPCF: Element: Metal film - nickel-chrome alloy
Core: Alumina ceramic
Body: Steatite ceramic case with inorganic potting compound
End Caps: Brass alloy
Terminals: Solder-coated copper



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PERFORMANCE			
TEST	CONDITIONS OF TEST	CPCP TEST LIMITS	CPCC, CPCL, CPCF TEST LIMITS
Thermal Shock	- 55°C to + 275°C, 5 cycles, 30 minute dwell time	± (2.0% + 0.05Ω)ΔR	± (5.0% + 0.05Ω)ΔR
Short Time Overload	5 x rated power for 5 seconds	± (2.0% + 0.05Ω)ΔR	± (4.0% + 0.05Ω)ΔR
Dielectric Withstanding Voltage	$1000V_{rms}$ for one minute	± (0.1% + 0.05Ω)ΔR	± (2.0% + 0.05Ω)ΔR
Low Temperature Operation	- 65°C, full rated working voltage for 45 minutes	± (2.0% + 0.05Ω)ΔR	± (3.0% + 0.05Ω)ΔR
Bias Humidity	75°C, 90% - 100% RH, 240 hours	± (2.0% + 0.05Ω)ΔR	± (5.0% + 0.05Ω)ΔR
Load Life	1000 hours at rated power, + 70°C, 1.5 hours "ON", 0.5 hours "OFF"	± (5.0% + 0.05Ω)ΔR	± (5.0% + 0.05Ω)ΔR
Terminal Strength	5 to 10 second 10 pound pull test	± (1.0% + 0.05Ω)ΔR	± (1.0% + 0.05Ω)ΔR
Resistance to Solder Heat	Terminal immersed 3.5 seconds in molten solder up to body	± (1.0% + 0.05Ω)ΔR	± (1.0% + 0.05Ω)ΔR