



MULTILAYER CERAMIC CHIP CAPACITOR

CDR



Multilayer Ceramic Chip Capacitor

MIL-PRF-55681

KEY BENEFITS

- Broad capacitance range: 1.0 pF to 0.47 μ F
- Voltages: 50 WVDC and 100 WVDC
- Military established reliability failure rates: M, P, R and S
- Available in ten military packages: CDR01, CDR02, CDR03, CDR04, CDR06, CDR31, CDR32, CDR33, CDR34, CDR35
- 90/10 tin/lead termination finish available

APPLICATIONS

- Military and high-reliability designs
- Input and output filter capacitors
- Hybrid circuits

Datasheet is available on our web site at www.vishay.com
for CDR - <http://www.vishay.com/doc?45026>



Multilayer Ceramic Chip Capacitors, Qualified, Type CDR



ELECTRICAL SPECIFICATIONS

Note: Electrical characteristics at + 25 °C unless otherwise specified.

Capacitance Range: 1.0 pF to 0.47 μF

Voltage - Temperature Limits:

BP: 0 ± 30 ppm/°C from - 55 °C to + 125 °C, with 0 Vdc applied

BX: ± 15 % from - 55 °C to + 125 °C, with 0 Vdc applied

BX: + 15, - 25 % from - 55 °C to + 125 °C, with 100 % rated Vdc applied

Insulation Resistance (IR):

At + 25 °C and rated voltage 100 000 MΩ minimum or 1000 ΩF, whichever is less

FEATURES

- Military qualified products
- Federal stock control number, CAGE CODE 95275
- High reliability tested per MIL-PRF-55681
- Tin/Lead "Z" and "U" termination codes available
- Lead (Pb)-free applied for "Y" and "M" termination code



RoHS*
COMPLIANT

Dissipation Factor (DF):

BP: 0.15 % maximum; BX: 2.5 % maximum

Test Frequency: 1 MHz ± 50 kHz for BP capacitors ≤ 1000 pF and for BX capacitors ≤ 100 pF

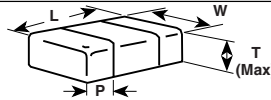
All other BP and BX capacitors are tested at 1 kHz ± 50 Hz

Dielectric Withstanding Voltage (DWV):

This is the maximum voltage the capacitors are tested for a 1 to 5 second period and the charge/discharge current does not exceed 50 mA.

≤ 100 Vdc: DWV at 250 % of rated voltage

DIMENSIONS in inches [millimeters]



MIL-PRF-55681	STYLE	LENGTH (L)	WIDTH (W)	THICKNESS (T) (Max.)	TERM. (P)	
					(MIN.)	(MAX.)
/1	CDR01	0.080 ± 0.015 [2.03 ± 0.38]	0.050 ± 0.015 [1.27 ± 0.38]	0.055 [1.40]	0.010 [0.25]	0.030 [0.76]
	CDR02	0.180 ± 0.015 [4.57 ± 0.38]	0.050 ± 0.015 [1.27 ± 0.38]	0.055 [1.40]	0.010 [0.25]	0.030 [0.76]
	CDR03	0.180 ± 0.015 [4.57 ± 0.38]	0.080 ± 0.015 [2.03 ± 0.38]	0.080 [2.03]	0.010 [0.25]	0.030 [0.76]
	CDR04	0.180 ± 0.015 [4.57 ± 0.38]	0.125 ± 0.015 [3.20 ± 0.38]	0.080 [2.03]	0.010 [0.25]	0.030 [0.76]
/3	CDR06	0.220 ± 0.010 [5.59 ± 0.25]	0.250 ± 0.010 [6.35 ± 0.25]	0.045 [1.14]	0.010 [0.25]	0.030 [0.76]
/7	CDR31	0.078 ± 0.008 [2.00 ± 0.20]	0.049 ± 0.008 [1.25 ± 0.20]	0.051 [1.30]	0.012 [0.30]	0.028 [0.70]
/8	CDR32	0.125 ± 0.008 [3.20 ± 0.20]	0.062 ± 0.008 [1.60 ± 0.20]	0.051 [1.30]	0.012 [0.30]	0.028 [0.70]
/9	CDR33	0.125 ± 0.010 [3.20 ± 0.25]	0.098 ± 0.010 [2.50 ± 0.25]	0.059 [1.50]	0.010 [0.25]	0.030 [0.76]
/10	CDR34	0.176 ± 0.010 [4.50 ± 0.25]	0.125 ± 0.010 [3.20 ± 0.25]	0.059 [1.50]	0.010 [0.25]	0.030 [0.76]
/11	CDR35	0.176 ± 0.012 [4.50 ± 0.30]	0.250 ± 0.012 [6.40 ± 0.30]	0.059 [1.50]	0.008 [0.20]	0.032 [0.80]

ORDERING INFORMATION - MILITARY

CDR31	BX	102	A	K	Y	S	A	T
MILITARY STYLES	DIELECTRIC	CAPACITANCE NOMINAL CODE	DC VOLTAGE RATING ¹⁾	CAPACITANCE TOLERANCE	TERMINATION	FAILURE RATE	MARKING	PACKAGING
CDR01 CDR02 CDR03 CDR04 CDR06 CDR31 CDR32 CDR33 CDR34 CDR35	BP and BX	Expressed in picofarads (pF). The first two digits are significant, the third is a multiplier. Examples: 102 = 1000 pF 1R8 = 1.8 pF	A = 50 V B = 100 V	C = ± 0.25 pF D = ± 0.5 pF F = ± 1 % J = ± 5 % K = ± 10 % M = ± 20 %	Y = Ni barrier with 100 % tin W = Ni barrier with 100 % tin or tin/lead plate with min. 4 % lead Z = Ni barrier with tin/lead plate min. 4 % lead M = AgPd U = Base metallization-barrier metal-solder coated (tin/lead alloy, with a minimum of 4 % lead). Solder has a melting point of + 200 °C or less. Solder coat thickness is a minimum of 69 μinch	M = 1.0 % P = 0.1 % R = 0.01 % S = 0.001 % Consult factory for failure rate status	A = Unmarked	T = 7" reel/plastic tape J = 7" reel/plastic tape (low qty) C = 7" reel/paper tape R = 11 1/4" reel/plastic tape P = 11 1/4" reel/paper tape B = Bulk

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Notes

1. DC voltage rating should not be exceeded in application
2. MIL-PFR_55681 "U" Termination part number code for CDR product length,width and thickness dimensions positive tolerances (including bandwidth) above are allowed to increase by the following amounts:

	Length	Width/Thickness
CDR01	0.020 [0.51]	0.015 [0.38]
CDR02-06	0.025 [0.64]	0.015 [0.38]
CDR31-35	0.023 [0.60]	0.012 [0.30]

* Pb containing terminations are not RoHS compliant, exemptions may apply

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