

BOURNS®

Features

- Self-regulating heating
- Constant temperature control
- Simple circuit design
- Suitable for clamp-contacting
- Stable over long life
- Silver or aluminum metallization

Additional Information

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C-Series – Ceramic PTC Thermistor Heaters

General Information

Bourns® C-Series Ceramic PTC Thermistor Heaters are designed and manufactured using proprietary blends of doped BaTiO₃ ceramic materials. The resulting products exhibit a large positive temperature coefficient (PTC) effect, rendering them useful in a wide range of self-regulating heating applications. Part numbers listed in this data sheet are representative of available product characteristics.

Customizations are available [upon request](#). Bourns' C-Series production site is IATF 16949 certified to support automotive programs, while AEC-Q200 compliance and PPAP documentation can be available upon request. Technical inquiries may be sent to PTC.Heaters@Bourns.com.

Product Characteristics

Part Number	Electrical Characteristics				
	Curie Temperature T _C	Surface Temperature T _{surf}	Rated Resistance R _N @ 25 °C	Maximum Voltage V _{max}	Rated Voltage V _N
	(°C)	(°C)	(Ω)	(V)	(V)
C-C1KW30/270	30	50	1000	270 AC	240 AC
C-C1KW55/270	55	75	1000	270 AC	240 AC
C-C15W65/60	65	75	15	60	42
C-R180W70/140	70	90	180	140 AC	110/120 AC
C-R300W70/140	70	85	300	140 AC	110/120 AC
C-R700W80/270	80	100	700	270 AC	220/240 AC
C-R500W90/270	90	110	500	270 AC	220/240 AC
C-C10X0/30	100	110	10	30	24
C-C18X0/30	100	110	18	30	24
C-C18X0/60	100	110	18	60	42
C-C1KX10/270	110	130	1000	270 AC	240 AC
C-C1KX10/270	110	130	1000	270 AC	240 AC
C-C500X30/270	130	150	500	270 AC	240 AC
C-C1KX35/270	135	155	1000	270 AC	240 AC
C-C500X35/270	135	155	500	270 AC	240 AC
C-C36X40/30	140	150	36	30	24
C-C68X45/60	145	155	68	60	42
C-S200X50/270	150	170	200	270 AC	220/240 AC
C-C15X50/60	150	160	15	60	42
C-C300X60/140	160	175	300	140 AC	110 AC
C-C1KX65/270	165	180	1000	270 AC	240 AC
C-C500X70/270	170	185	500	270 AC	240 AC
C-C3R6X70/60	170	180	3.6	60	42
C-C500X75/270	175	190	500	270 AC	220/240 AC
C-R800Y10/270	210	230	800	270 AC	220/240 AC
C-C1K5Y15/270	215	230	1500	270 AC	240 AC
C-R300Y30/140	230	250	300	140 AC	100/120 AC
C-C1K5Y35/270	235	250	1500	270 AC	240 AC
C-C3K6Y35/270	235	250	3600	270 AC	240 AC
C-R700Y40/270	240	255	700	270 AC	220/240 AC
C-R500Y40/270	240	255	500	270 AC	220/240 AC
C-R1KY60/270	260	275	1000	270 AC	220/240 AC
C-R1K5Y10/500	210	220	1500	500 DC	400 DC
C-R8KY05/855	205	225	8000	855 DC	800 DC



WARNING
Cancer and Reproductive Harm
www.P65Warnings.ca.gov

Specifications are subject to change without notice. Users should verify actual device performance in their specific applications. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

Applications

Transportation:

- Cabin air heating
- Fuel heating
- Battery temperature control
- Camera lens de-icing

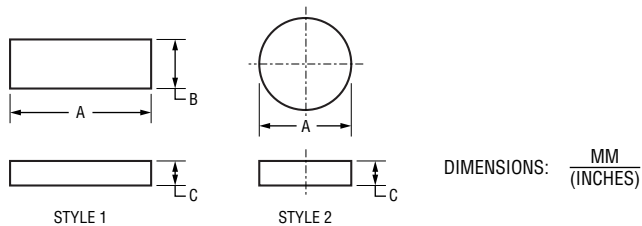
Appliances:

- HVAC systems
- Portable space heaters

C-Series – Ceramic PTC Thermistor Heaters

BOURNS®

Product Dimensions



Part Number	Style	Dimensions		
		Dim. A	Dim. B	Dim. C
		± 0.1 ($\pm .004$)	± 0.1 ($\pm .004$)	± 0.2 ($\pm .008$)
C-C1KW30/270	2	$\frac{8}{(.315)}$	—	$\frac{3}{(.118)}$
C-C1KW55/270	2	$\frac{13}{(.512)}$	—	$\frac{2.3}{(.091)}$
C-C15W65/60	2	$\frac{13}{(.512)}$	—	$\frac{1.5}{(.059)}$
C-R180W70/140	1	$\frac{16}{(.630)}$	$\frac{11}{(.433)}$	$\frac{2.5}{(.098)}$
C-R300W70/140	1	$\frac{16}{(.630)}$	$\frac{11}{(.433)}$	$\frac{2.5}{(.098)}$
C-R700W80/270	1	$\frac{16}{(.630)}$	$\frac{11}{(.433)}$	$\frac{2.5}{(.098)}$
C-R500W90/270	1	$\frac{23.5}{(.925)}$	$\frac{10}{(.394)}$	$\frac{2.2}{(.087)}$
C-C10X0/30	2	$\frac{8}{(.315)}$	—	$\frac{1.5}{(.059)}$
C-C18X0/30	2	$\frac{8}{(.315)}$	—	$\frac{1.5}{(.059)}$
C-C18X0/60	2	$\frac{10}{(.394)}$	—	$\frac{2.5}{(.098)}$
C-C1KX10/270	2	$\frac{8}{(.315)}$	—	$\frac{2.3}{(.091)}$
C-C1KX10/270	2	$\frac{20}{(.787)}$	—	$\frac{2.3}{(.091)}$
C-C500X30/270	2	$\frac{10}{(.394)}$	—	$\frac{2.3}{(.091)}$
C-C1KX35/270	2	$\frac{10}{(.394)}$	—	$\frac{2.3}{(.091)}$
C-C500X35/270	2	$\frac{10}{(.394)}$	—	$\frac{2.3}{(.091)}$
C-C36X40/30	2	$\frac{13}{(.512)}$	—	$\frac{1.3}{(.051)}$
C-C68X45/60	2	$\frac{13}{(.512)}$	—	$\frac{1.3}{(.051)}$
C-S200X50/270	1	$\frac{10}{(.394)}$	$\frac{10}{(.394)}$	$\frac{2.3}{(.091)}$

Part Number	Style	Dimensions		
		Dim. A	Dim. B	Dim. C
		± 0.1 ($\pm .004$)	± 0.1 ($\pm .004$)	± 0.2 ($\pm .008$)
C-C15X50/60	2	$\frac{17}{(.669)}$	—	$\frac{1.4}{(.056)}$
C-C300X60/140	2	$\frac{10}{(.394)}$	—	$\frac{2.3}{(.091)}$
C-C1KX65/270	2	$\frac{10}{(.394)}$	—	$\frac{2.3}{(.091)}$
C-C500X70/270	2	$\frac{10}{(.394)}$	—	$\frac{2.3}{(.091)}$
C-C3R6X70/60	2	$\frac{20}{(.787)}$	—	$\frac{1.4}{(.056)}$
C-C500X75/270	2	$\frac{14}{(.551)}$	—	$\frac{2.3}{(.091)}$
C-R800Y10/270	1	$\frac{19}{(.748)}$	$\frac{12}{(.472)}$	$\frac{2.2}{(.087)}$
C-C1K5Y15/270	2	$\frac{13}{(.512)}$	—	$\frac{2.5}{(.098)}$
C-R300Y30/140	1	$\frac{23.5}{(.925)}$	$\frac{10}{(.394)}$	$\frac{2.2}{(.087)}$
C-C1K5Y35/270	2	$\frac{13}{(.512)}$	—	$\frac{2.5}{(.098)}$
C-C3K6Y35/270	2	$\frac{20}{(.787)}$	—	$\frac{2.5}{(.098)}$
C-R700Y40/270	1	$\frac{23.5}{(.925)}$	$\frac{10}{(.394)}$	$\frac{2.2}{(.087)}$
C-R500Y40/270	1	$\frac{36}{(1.417)}$	$\frac{6}{(.236)}$	$\frac{2.3}{(.091)}$
C-R1KY60/270	1	$\frac{24}{(.945)}$	$\frac{15}{(.591)}$	$\frac{2.2}{(.087)}$
C-R1K5Y10/500	1	$\frac{34.5}{(1.358)}$	$\frac{15}{(.591)}$	$\frac{2.1}{(.083)}$
C-R8KY05/855	1	$\frac{28}{(1.102)}$	$\frac{20}{(.787)}$	$\frac{2.6}{(.102)}$

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C-Series – Ceramic PTC Thermistor Heaters



Packaging

C-Series ceramic PTC thermistor heater products are packaged in bulk packaging boxes according to each model's specific requirements. Standard and custom packaging options are available upon request.

Environmental Characteristics

Typical Working Temperature Range	For V=0: -40 °C to +220 °C For V=V _r : -40 °C to +100 °C For V=V _r with T _c ≤ 60 °C: -40 °C to +60 °C
Moisture Sensitivity Level (MSL)	1
ESD Classification (HBM)	Class 6

Test Procedures and Requirements

Test	Test Condition and Method	Standard	Requirement
Endurance at maximum operating temperature and maximum voltage	At 80 +2/-0 °C, V _{max} Test duration: 1000 ±2 hours Final check: Appearance and rated resistance	IEC 60738-1	No visible damage (R2-R1) / R1 ≤25 % R1: resistance before test R2: resistance after test
Endurance at room temperature, cycling	At 25 ±5 °C, V _{max} Power-on 60 ±5 s, Power-off 120 ±10 s, 10,000 cycles Final check: Appearance and rated resistance	IEC 60738-1	No visible damage (R2-R1) / R1 ≤25 % R1: resistance before test R2: resistance after test
Invariable damp heat	At temperature: 40 ±5 °C Relative humidity: 90-95 %, Voltage: 0.25 V _{max} Test duration: 1000 ±2 hours Final check: Appearance and rated resistance	IEC 60738-1	No visible damage (R2-R1) / R1 ≤25 % R1: resistance before test R2: resistance after test

How To Order

C - R 3R5 X20 / 120 A - 0

Model Series _____
 Ceramic PTC Thermistor Heater Designator _____
 Family _____
 R = Rectangular D = Donut
 S = Square A = Assembly
 C = Circular L = Radial Leaded
 Rated Resistance (see Electrical Characteristics tables) _____
 3R6 = 3.6 Ω 36 = 36 Ω 3K6 = 3600 Ω
 Curie Temperature (see Electrical Characteristics tables) _____
 W30 = 30 °C X30 = 130 °C Y30 = 230 °C
 Maximum Operating Voltage (see Electrical Characteristics tables) _____
 120 = 120 V
 Dimension Code _____
 (blank) = Standard dimensions according to Product Dimension tables
 Non-standard dimensions will be treated as custom products
 and assigned alpha-numeric dimension codes (A, B, C, etc.)
 Packaging Designator _____
 -0 = Standard bulk packing



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