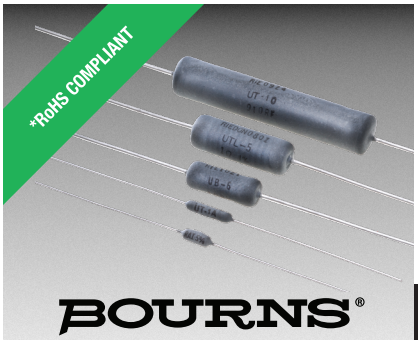


Features

- Formerly a Riedon™ product
- Resistances 0.02 to 320k Ω
- Resistance tolerances as low as ±0.01 %
- Power rating: 1 to 13 watts
- Excellent pulse handling
- Low TCR: ±20 PPM/°C standard
- Operating Temperature Range: -55 °C to +350 °C ("V" Rating)
- Designed to MIL-R-26 / MIL-R-39007 power ratings
- Silicone coated power resistor
- Non-inductive windings available
- RoHS compliant*

UT Series – Riedon™ High Temperature Power Resistors by Bourns

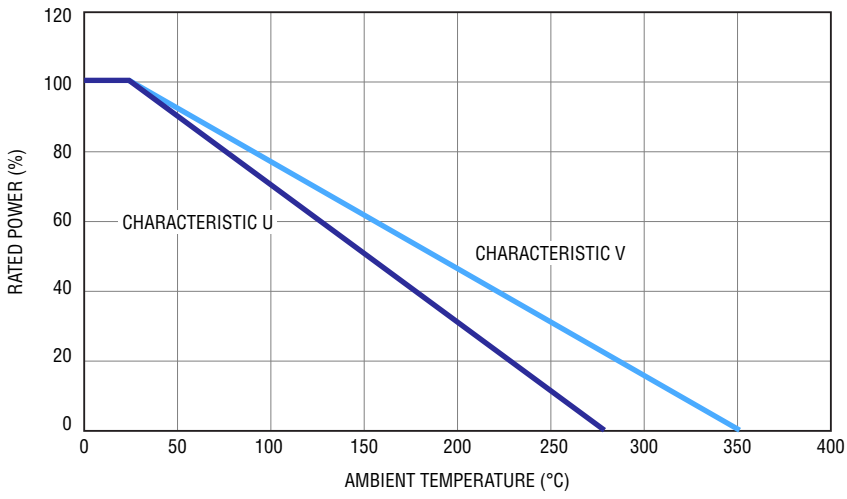
Specifications

Specification	Value
Tolerances	±0.01 % to ±10 % (1 % Standard)
Temperature Coefficient	>10 Ω: ±20 PPM/°C 1 Ω to 10 Ω: ±50 PPM/°C <1 Ω: Other TCR values available. Contact Bourns.
Temperature Range	Characteristic U: -55 °C to +275 °C Characteristic V: -55 °C to +350 °C
Maximum Working Voltage	√ (P * R)
Dielectric Strength	UT1 / UT1/2A / UT1/2 / UT1A: 500 VAC; All Others: 1000 VAC
Construction	Centerless ground ceramic core Matte tin over copper Flame resistant / high temperature / trivalent / inorganic Silicone coating All welded terminations

Environmental Performance

Specification (MIL-STD 202)	ΔR	
	Characteristic U	Characteristic V
Dielectric	±0.2 % + 0.05 Ω	±0.2 % + 0.05 Ω
Load Life	±1 % + 0.05 Ω	±3 % + 0.05 Ω
Storage	±0.2 % + 0.05 Ω	±2 % + 0.05 Ω
Moisture Resistance	±0.2 % + 0.05 Ω	±2 % + 0.05 Ω
Thermal Shock	±0.2 % + 0.05 Ω	±2 % + 0.05 Ω
5X Overload (5 s)	±0.2 % + 0.05 Ω	±2 % + 0.05 Ω
Shock	±0.1 % + 0.05 Ω	±0.2 % + 0.05 Ω
Vibration	±0.1 % + 0.05 Ω	±0.2 % + 0.05 Ω

Power Derating Curves



Additional Information

Click these links for more information:

PRODUCT | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

How To Order

UT 5 - 25R F 1 - TR14

Model
- UT (standard)
- UTN (non-inductive)

Power Rating Code
(See Specifications and Dimensions table on page 2)

Resistance Code
For values ≤10K Ω, "R" represents decimal point (Example: 25R = 25 Ω)
For values >10K Ω, "K" represents decimal point (Example 1K5 = 1.5K Ω)

Tolerance

X** = ±0.01 %	D = ±0.5 %
W** = ±0.02 %	F = ±1 %
V** = ±0.025 %	G = ±2 %
U** = ±0.05 %	H = ±3 %
B = ±0.1 %	J = ±5 %
T = ±0.2 %	K = ±10 %
C = ±0.25 %	

Internal Use

Packaging Options
(Blank) = Bulk Packaging
-TR12 = Tape and Reel (12-inch Reel)
-TR14 = Tape and Reel (14-inch Reel)

(Specific TCR values available upon request.)

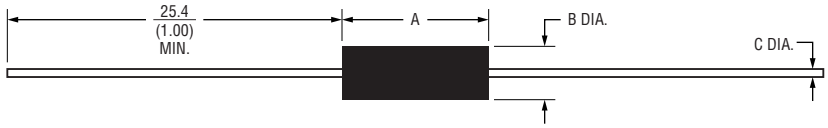
**Contact Bourns for tolerances <±0.01 %.

Note: Characteristic U is standard; Contact Bourns for Characteristic V.

CALIFORNIA WARNING: Can expose you to lead, a carcinogen and reproductive toxicant. See www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex. 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.

Specifications and Dimensions



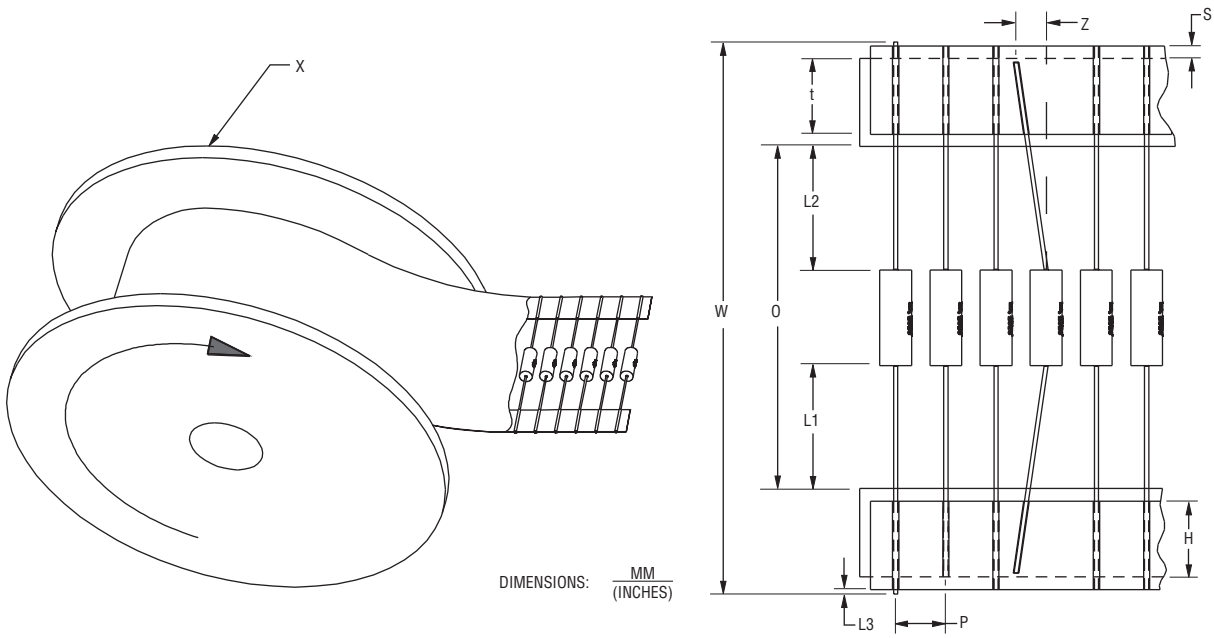
Model & Power Rating Code	Power Rating (W)		Max. Ohms[2] (Ω)	Dimensions			Designed to Mil-R-26 / MIL-R-39007
	U	V		A	B[3]	C[1]	
UT1	0.1	0.25	500	3.8 ± 1.6 (.150 ± .062)	2.0 ± 0.8 (.078 ± .031)	0.46 ± 0.05 (.018 ± .002)	—
UT1/2A	0.4	0.5	2.5k	6.4 ± 1.6 (.250 ± .062)	2.4 ± 0.8 (.094 ± .031)	**0.5 ± 0.05 (.020 ± .002)** 0.6 ± 0.05 (.025 ± .002)	—
UT1/2	0.75	0.9	7.5k	8.4 ± 1.6 (.330 ± .062)	2.4 ± 0.8 (.094 ± .031)		—
UT1A	1.0	1.5	10k	10.3 ± 1.6 (.406 ± .062)	2.4 ± 0.8 (.094 ± .031)		RW-70
UT2	1.5	2.0	12.5k	8.9 ± 1.6 (.350 ± .062)	4.0 ± 0.8 (.156 ± .031)	0.8 ± 0.05 (.032 ± .002)	—
UT2A	2.5	3.0	22k	12.7 ± 1.6 (.500 ± .062)	4.7 ± 0.8 (.187 ± .031)		RW-69
UT2B	3.0	3.75	22k	14.2 ± 1.6 (.560 ± .062)	4.7 ± 0.8 (.187 ± .031)		RW-79
UT2C	3.0	4.0	40k	12.7 ± 1.6 (.500 ± .062)	6.4 ± 0.8 (.250 ± .031)	**1.0 ± 0.05 (.040 ± .002)** 0.8 ± 0.05 (.032 ± .002)	—
UT2E	3.0	3.5	30k	12.7 ± 1.6 (.500 ± .062)	5.1 ± 0.8 (.200 ± .031)	0.8 ± 0.05 (.032 ± .002)	—
UT3	4.0	5.5	45k	17.1 ± 1.6 (.675 ± .062)	6.9 ± 0.8 (.270 ± .031)	**1.0 ± 0.05 (.040 ± .002)** 0.8 ± 0.05 (.032 ± .002)	—
UT5	5.0	6.5	91k	22.2 ± 1.6 (.875 ± .062)	7.9 ± 0.8 (.312 ± .031)	1.0 ± 0.05 (.040 ± .002)	RW-74
UT5A	5.0	6.5	65k	24.6 ± 1.6 (.970 ± .062)	5.2 ± 0.8 (.250 ± .031)	0.8 ± 0.05 (.032 ± .002)	—
UT6	5.0	6.5	95k	26.0 ± 1.6 (1.025 ± .062)	7.9 ± 0.8 (.312 ± .031)	1.0 ± 0.05 (.040 ± .002)	RW-67
UT7A	7.0	9.0	150k	35.0 ± 1.6 (1.375 ± .062)	9.5 ± 0.8 (.375 ± .031)		—
UT7B	7.0	9.0	100k	35.6 ± 1.6 (1.400 ± .062)	7.9 ± 0.8 (.312 ± .031)	0.8 ± 0.05 (.032 ± .002)	—
UT7C	7.0	9.0	154k	31.0 ± 1.6 (1.220 ± .062)	7.9 ± 0.8 (.312 ± .031)	1.0 ± 0.05 (.040 ± .002)	—
UT10	10	13	260k	45.2 ± 1.6 (1.780 ± .062)	9.5 ± 0.8 (.375 ± .031)		RW-78
UT15	15	—	320k	46.0 ± 1.6 (1.810 ± .062)	13.0 ± 0.8 (.510 ± .031)	1.5 ± 0.05 (.050 ± .002)	—

Notes:
[1] Lead Diameter: 18 AWG = 0.040 ″ / 20 AWG = 0.032 ″ / 22 AWG = 0.025 ″ / 24 AWG = 0.020 ″ / 25 AWG = 0.018 ″.
Where more than one lead is listed / the **bold** value is standard.
[2] For non-inductive windings / divide maximum resistance by 2.
[3] For non-inductive winding where R ≤ 0.10 ohms, tolerance is +1.6/-0.0 mm (+0.063/-0.00 ″).

Standard Package Quantities

Model & Power Rating Code	Bulk	12 ˝ Reel	14 ˝ Reel
UT1	500	N/A	
UT1/2A UT1/2 UT1A UT2		3000	N/A
UT2A UT2B		1500	
UT2C UT2E UT5A		1000	
UT3 UT5 UT6 UT7C		N/A	1000
UT7A UT7B UT10	250		500
UT15	25	N/A	

Packaging Specifications



Pitch (Inches) Dimension P	Dimension O (mm)	Reel Size (Inches) Dimension X	Pitch (Inches) Dimension P	Clean Lead to Clean Lead Eccentricity (Max.) Dimension L1–L2	Lead Extension (Max.) - Zero is Preferred Dimension L3	Lead Bending Dimension Z	Exposed Adhesive (Max.) Dimension S	Tape Width (mm) Dimension t	Lead Sandwich (Min.) Dimension H	Overall Width (Max.) Dimension W
UT1/2A	1.983-2.141	12	0.2	1.4 (.055)	0.8 (.031)	1.0 (.039)	0.8 (.031)	7.0 (177.8)	t/2	123.5 (4.862)
UT1/2										
UT1A										
UT2	2.421-2.579									
UT2A	1.983-2.141		0.4							
UT2B										
UT2C	2.421-2.579									
UT2E										
UT3										
UT5		14								
UT5A										
UT6										
UT7A	3.206-3.364									
UT7B										
UT7C										
UT10										

REV. 02/26

Legal Disclaimer Notice

BOURNS®

This legal disclaimer applies to purchasers and users of Bourns® products manufactured by or on behalf of Bourns, Inc. and its affiliates (collectively, "Bourns").

Unless otherwise expressly indicated in writing, Bourns® products and data sheets relating thereto are subject to change without notice. Users should check for and obtain the latest relevant information and verify that such information is current and complete before placing orders for Bourns® products.

The characteristics and parameters of a Bourns® product set forth in its data sheet are based on laboratory conditions, and statements regarding the suitability of products for certain types of applications are based on Bourns' knowledge of typical requirements in generic applications. The characteristics and parameters of a Bourns® product in a user application may vary from the data sheet characteristics and parameters due to (i) the combination of the Bourns® product with other components in the user's application, or (ii) the environment of the user application itself. The characteristics and parameters of a Bourns® product also can and do vary in different applications and actual performance may vary over time. Users should always verify the actual performance of the Bourns® product in their specific devices and applications, and make their own independent judgments regarding the amount of additional test margin to design into their device or application to compensate for differences between laboratory and real world conditions.

Unless Bourns has explicitly designated an individual Bourns® product as meeting the requirements of a particular industry standard (e.g., IATF 16949) or a particular qualification (e.g., UL listed or recognized), Bourns is not responsible for any failure of an individual Bourns® product to meet the requirements of such industry standard or particular qualification. Users of Bourns® products are responsible for ensuring compliance with safety-related requirements and standards applicable to their devices or applications.

Bourns® products are not recommended, authorized or intended for use in nuclear, lifesaving, life-critical or life-sustaining applications, nor in any other applications where failure or malfunction may result in personal injury, death, or severe property or environmental damage. Unless expressly and specifically approved in writing by two authorized Bourns representatives on a case-by-case basis, use of any Bourns® products in such unauthorized applications might not be safe and thus is at the user's sole risk. Life-critical applications include devices identified by the U.S. Food and Drug Administration as Class III devices and generally equivalent classifications outside of the United States.

Bourns expressly identifies those Bourns® standard products that are suitable for use in automotive applications on such products' data sheets in the section entitled "Applications." Unless expressly and specifically approved in writing by two authorized Bourns representatives on a case-by-case basis, use of any other Bourns® standard products in an automotive application might not be safe and thus is not recommended, authorized or intended and is at the user's sole risk. If Bourns expressly identifies a sub-category of automotive application in the data sheet for its standard products (such as infotainment or lighting), such identification means that Bourns has reviewed its standard product and has determined that if such Bourns® standard product is considered for potential use in automotive applications, it should only be used in such sub-category of automotive applications. Any reference to Bourns® standard product in the data sheet as compliant with the AEC-Q standard or "automotive grade" does not by itself mean that Bourns has approved such product for use in an automotive application.

Bourns® standard products are not tested to comply with United States Federal Aviation Administration standards generally or any other generally equivalent governmental organization standard applicable to products designed or manufactured for use in aircraft or space applications. Bourns expressly identifies Bourns® standard products that are suitable for use in aircraft or space applications on such products' data sheets in the section entitled "Applications." Unless expressly and specifically approved in writing by two authorized Bourns representatives on a case-by-case basis, use of any other Bourns® standard product in an aircraft or space application might not be safe and thus is not recommended, authorized or intended and is at the user's sole risk.

The use and level of testing applicable to Bourns® custom products shall be negotiated on a case-by-case basis by Bourns and the user for which such Bourns® custom products are specially designed. Absent a written agreement between Bourns and the user regarding the use and level of such testing, the above provisions applicable to Bourns® standard products shall also apply to such Bourns® custom products.

Users shall not sell, transfer, export or re-export any Bourns® products or technology for use in activities which involve the design, development, production, use or stockpiling of nuclear, chemical or biological weapons or missiles, nor shall they use Bourns® products or technology in any facility which engages in activities relating to such devices. The foregoing restrictions apply to all uses and applications that violate national or international prohibitions, including embargos or international regulations. Further, Bourns® products and Bourns technology and technical data may not under any circumstance be exported or re-exported to countries subject to international sanctions or embargoes. Bourns® products may not, without prior authorization from Bourns and/or the U.S. Government, be resold, transferred, or re-exported to any party not eligible to receive U.S. commodities, software, and technical data.

To the maximum extent permitted by applicable law, Bourns disclaims (i) any and all liability for special, punitive, consequential, incidental or indirect damages or lost revenues or lost profits, and (ii) any and all implied warranties, including implied warranties of fitness for particular purpose, non-infringement and merchantability.

For your convenience, copies of this Legal Disclaimer Notice with German, Spanish, Japanese, Traditional Chinese and Simplified Chinese bilingual versions are available at:

Web Page: http://www.bourns.com/legal/disclaimers-terms-and-policies

PDF: http://www.bourns.com/docs/Legal/disclaimer.pdf