Thick Film Shunt Resistors <Face Down type>

UCR18 EVH series

Datasheet

[PRODUCT SPECIFICATION]

1. SCOPE OF APPLICATION

This specification defines the Thick Film Shunt Resistors <Face Down type> “UCR18 EVH series” which is a product of ROHM Co., Ltd.

2. PRODUCT MODEL

UCR18	EVH	□	□	□□□□
TYPE	PACKAGING CODE	TOLERANCE	SPECIAL CODE	NOMINAL RESISTANCE (IEC CODE)

PACKAGING CODE

CODE	PACKAGE	QUANTITY
EVH	180mm(7inch) reel, paper tape (4mm pitch)	5,000 pcs/reel

TOLERANCE

CODE	F (±1%)	J (±5%)

RESISTANCE VALUE

4 digits	FS, FL, JS
3 digits	JL

3. RATING

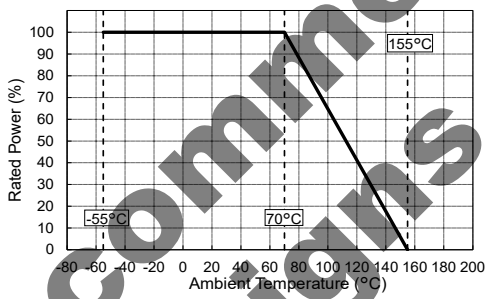
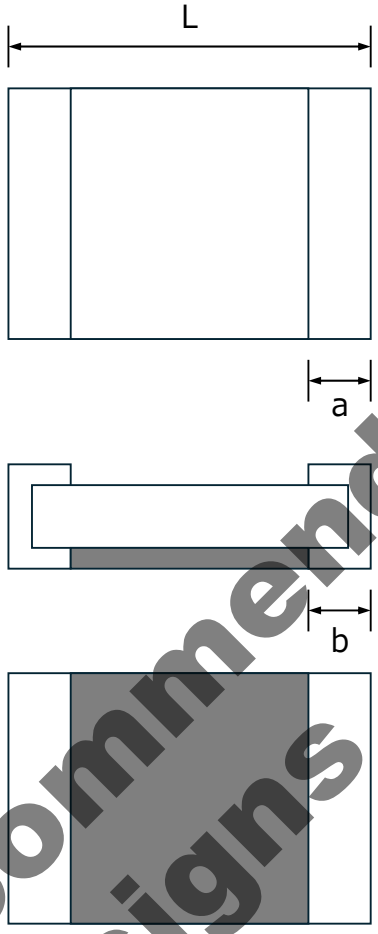
ITEMS	CONDITIONS	SPECIFICATIONS
RATED POWER	For resistors operated at the ambient temperature in excess of 70℃, the load shall be derated in accordance with Fig.1. Fig.1 	1W 11mΩ≦R≦39mΩ 0.5W 43mΩ≦R≦100mΩ at 70°C
RATED VOLTAGE RATED CURRENT	Rated voltage is determined from the following. $E=\sqrt{P\times R}$ $I=\sqrt{P/R}$ E : RATED VOLTAGE (V) I : RATED CURRENT (A) P : RATED POWER (W) R : RESISTANCE (Ω)	
RESISTANCE	See Table 1.	
OPERATING TEMPERATURE		-55°C~+155°C

Table 1

RESISTANCE RANGE (Ω)	TOLERANCE	SPECIAL CODE	TEMPERATURE COEFFICIENT (ppm/°C) +25°C/-55°C, +25°C/+125°C
11m≦R≦18m (E24)	F (±1%) J (±5%)	S	0～350
20m≦R≦39m (E24)			0～200
43m≦R≦91m (E24)			0～150
R=100m (E24)		L	0~150

4. DIMENSIONS (UNIT : mm)

Simplified outline of external dimensions.

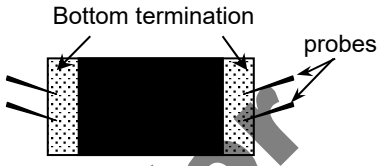


L	W	t	a	b
3.20±0.15	1.60±0.15	0.55±0.10	0.30±0.20	0.90±0.25

5. MARKINGS ON CHIP RESISTOR

The descriptions of markings on the chip resistor are as shown below.
(1) Marking method : There are three or four digits used for the calculation number according to IEC code and “R” is used for the decimal point.
Example: 4digits 0.1Ω=R100
3digits 0.1Ω=R10
(2) Marking direction : Standard, the opposite side marking to resistor surface.
(3) Marking colors : F Class…4digits, black marking or other appropriate marking.
J Class…3digits (4 digits on less than 0.1Ω) black marking or

6. CHARACTERISTICS

ITEMS	GUARANTEED VALUE	TEST CONDITIONS (JIS C 5201-1)
6.1 RESISTANCE	F : ±1% J : ±5%	JIS C 5201-1 6.1 Measuring method : Measure bottom termination by 4 probes. 
6.2 VARIATION OF RESISTANCE WITH TEMPERATURE	See Table 1	JIS C 5201-1 6.2 Measurement : +25°C/-55°C, +25°C/+125°C
6.3 OVERLOAD	±2.0%	JIS C 5201-1 8.1 Rated voltage(current)x2.5, 2s
6.4 SOLDERABILITY	A new uniform coating of minimum of 95% of the surface being immersed and no soldering damage.	JIS C 5201-1 11.1 Rosin-Ethanol solution(25% mass) Soldering condition : 245±5°C Duration of immersion : 2.0±0.5s.
6.5 RESISTANCE TO SOLDERING HEAT	±1.0% No remarkable abnormality on the appearance.	JIS C 5201-1 11.2 Soldering condition : 260±5°C Duration of immersion : 10±1s.
6.6 RAPID CHANGE OF TEMPERATURE	±1.0%	JIS C 5201-1 10.1 Test temp. :-55°C～+125°C Test time : 1,000 cycles
6.7 DAMP HEAT, STEADY STATE	±3.0%	JIS C 5201-1 10.4 Test temp. : 85°C Relative Humidity : 85% Test time : 1,000h
6.8 ENDURANCE AT 70°C	±3.0%	JIS C 5201-1 7.1 Test temp. : 70°C Rated voltage(current) 1.5h ON / 0.5h OFF Test time : 1,000h
6.9 ENDURANCE AT MAXIMUM TEMPERATURE	±3.0%	JIS C 5201-1 7.3 Test temp. : 155°C Test time : 1,000h
6.10 RESISTANCE TO SOLVENT	±0.5%	JIS C 5201-1 11.3 23±5°C , Immersion cleaning, 5±0.5min Solvent : Isopropyl alcohol
6.11 BEND STRENGTH OF THE END FACE PLATING	Without open	JIS C 5201-1 9.8 Endurance with 90mm width Deflection : 3mm

[PACKAGE SPECIFICATIONS]

1. SCOPE OF APPLICATION

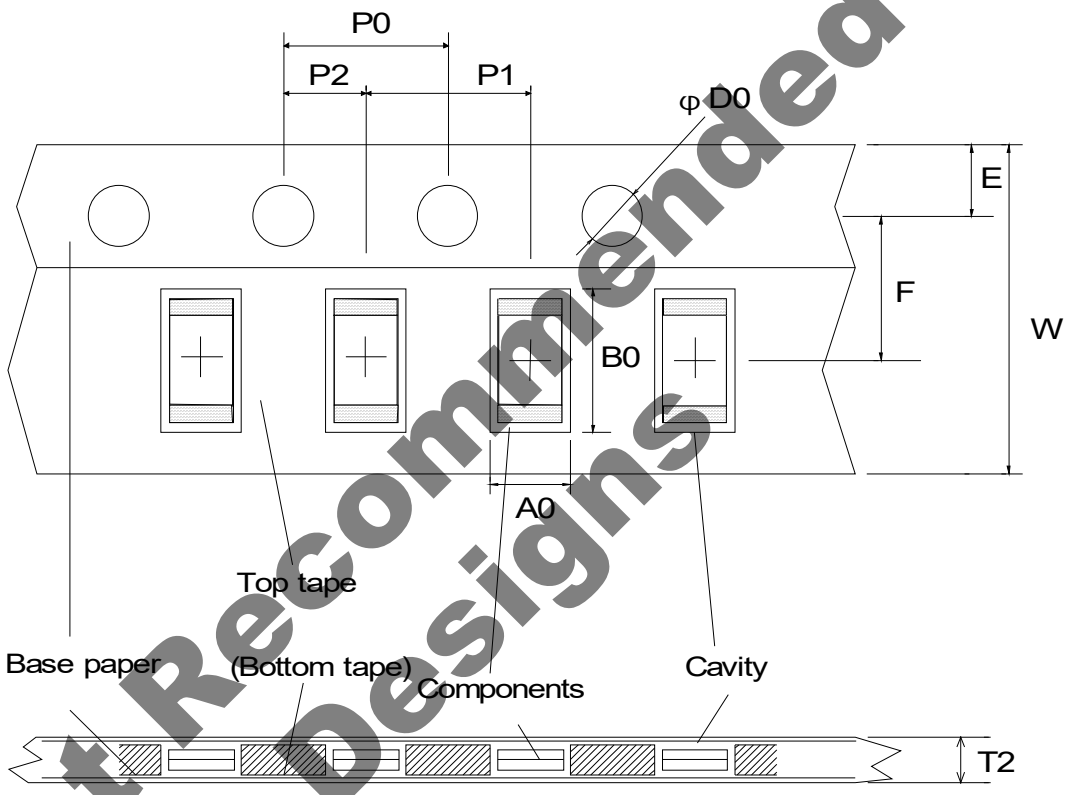
This specification defines the taping specifications for Thick Film Shunt Resistors <Face Down type> “UCR18 EVH series”.

2. PRODUCT MODEL

UCR18	EVH	□	□	□□□□
TYPE	PACKAGING CODE	TOLERANCE	SPECIAL CODE	NOMINAL RESISTANCE (IEC CODE)

PACKAGING CODE : See page 1/7.

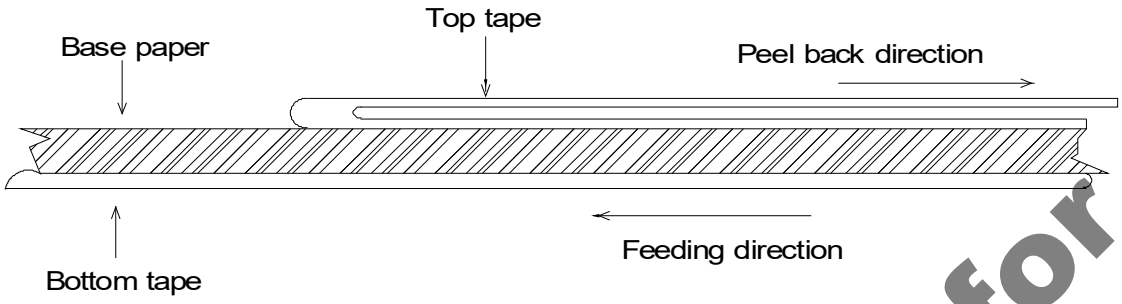
3. TAPE DIMENSIONS (UNIT : mm)



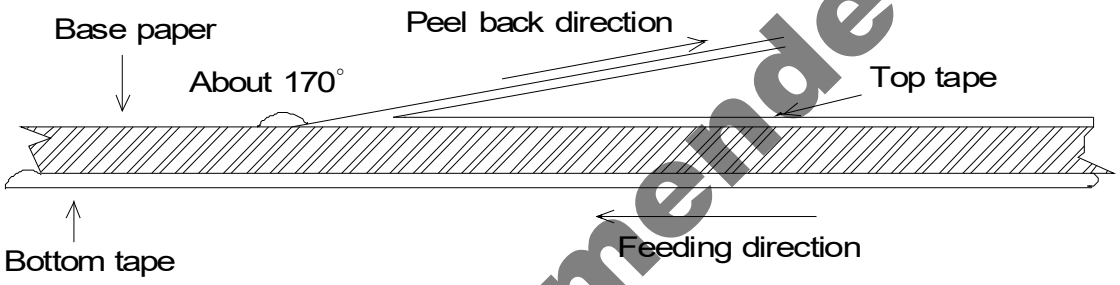
W	F	E	A0	B0
8.00±0.30	3.50±0.05	1.75±0.10	1.95+0.10 -0.05	3.50+0.15 -0.05
D0	P0	P1	P2	T2
φ1.50 +0.10 0	4.00±0.10	4.00±0.10	2.00±0.05	MAX.1.1

4. MECHANICAL CHARACTERISTICS

4.1 COVER TAPE PEELING STRENGTH
: 0.1N ≦ PEELING STRENGTH ≦ 0.6N



4.2 Base tape should not adhere to top tape when top tape is peeled back, and peel back direction is as follows.



4.3 DURABILITY OF COVER TAPE (TOP TAPE)
Top tape shall not be off the base paper after 120h at the atmosphere of 60±3°C, 90～95%(Relative Humidity).

5. TAPE PACKAGING

5.1 Components are set in tape cavities with the same side (marking upside and resistive element bottom side).

5.2 The accumulated pitch tolerance shall be within ±0.2mm at 10 pitches.

5.3 Tape bent resistance
No damage on the tape and the cavity when tape is bent with the radius of 15mm.

5.4 Components in tape cavity shall not adhere to bottom / cover tape.

5.5 Components shall not be blocked by tape fragments or foreign materials when they are taken out from cavities.

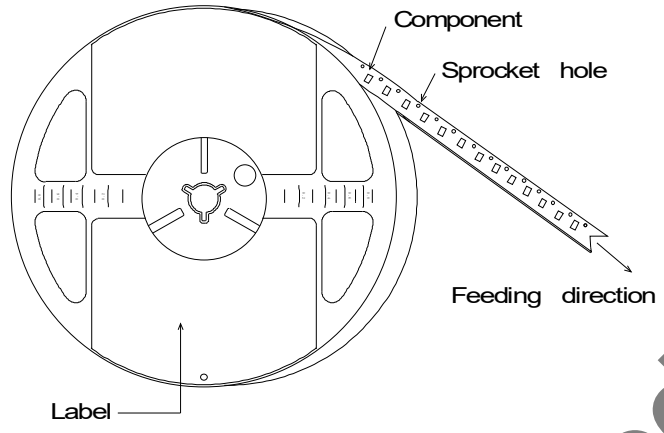
5.6 The top tape shall not cover up the sprocket holes of tape.

5.7 The number of missing components shall not exceed 0.1% of the total number of components (marked number) or one whichever is the larger, and no consecutive missing exceeding two is allowed.

6. TAPE REEL

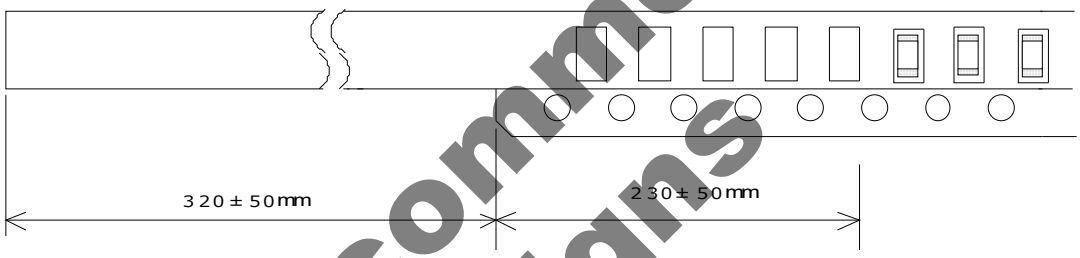
6.1 Tape feeding direction

Tape feeding direction shall be shown in the picture drawn below.



6.2 Leader tape

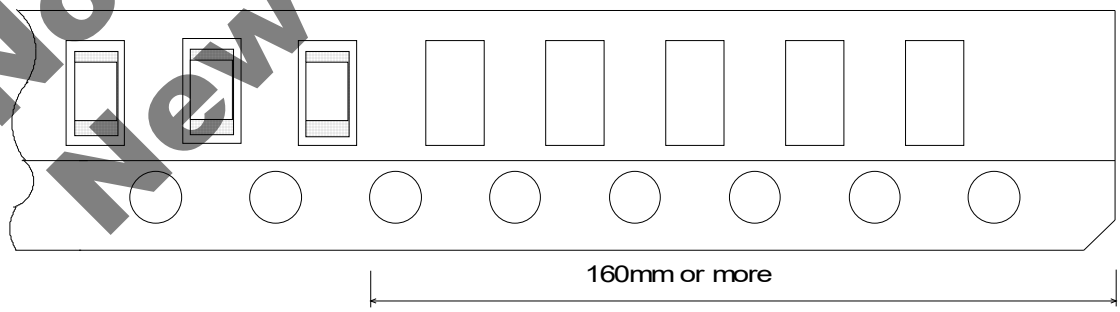
Leader tape is given a portion of only cover tape and of blank cavities. (no resistor.)



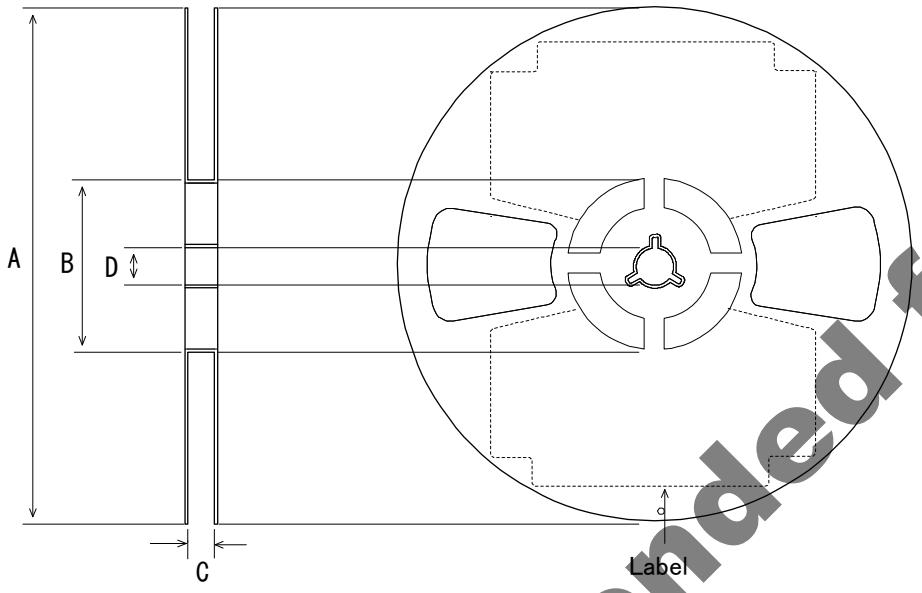
(Note) The leader portion of cover tape will not stick to base paper. (about 50～100mm)

6.3 Trail tape

Trail tape is given a portion of blank cavities (no resistor).
And the trail tape should not be fixed by adhesive to reel and must be the one which can be pulled out easily from the reel.



7. REEL DIMENSIONS (UNIT : mm)



A	B	C	D
φ180 0 -1.5	φ60 +1 0	9 +1 0	φ13±0.2

MATERIAL

REEL : POLYSTYRENE