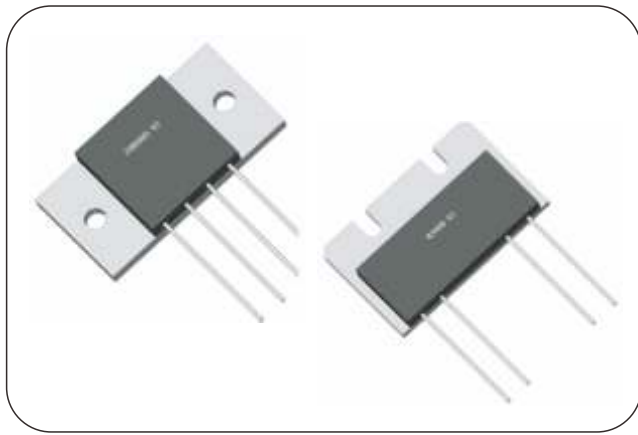


# UTR UVR精密分流电阻 Precision Shunt Resistors



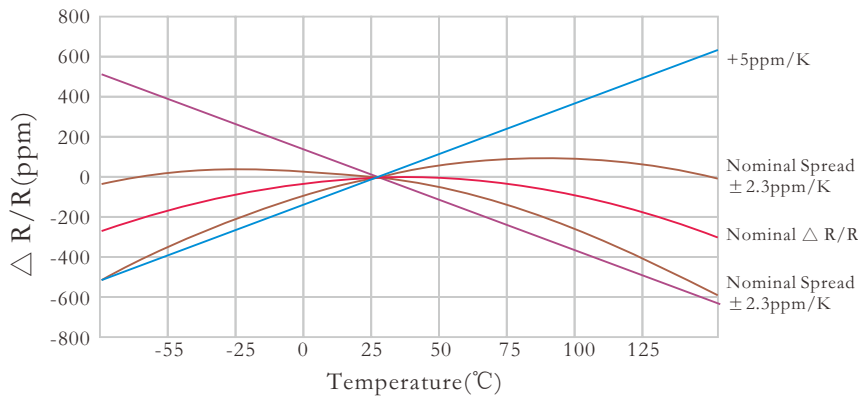
## ● Feature

- Resistance from 0.05 Ohm to 500 Ohms
- Power Rating to 50 Watts
- Resistance Tolerances to  $\pm 0.1\%$
- TCR to  $\pm 1\text{ppm/K}$
- Low Stability to 0.01%
- Backplate Isolated form leads

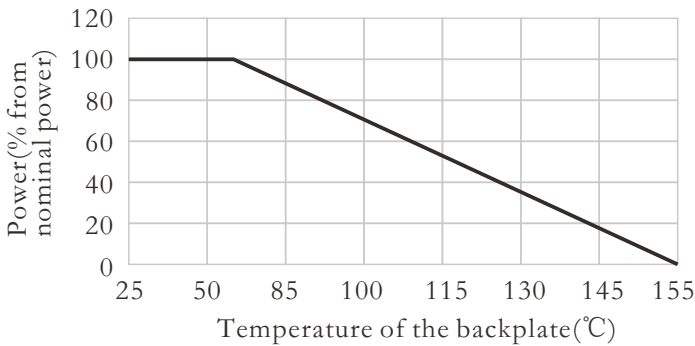
## ● Specifications

Type	UTR 4-3425	UTR 4-4020	UVR 4-3425	UVR 4-4020
Resistance Range	0.05 to 500 Ohms		0.05 to 400 Ohms	
	other resistance values upon request/power rating depending on resistance value			
Power Rating free air 70°C with heatsink	3 W	2.5 W	3 W	2.5 W
	30 W	30 W	50 W	50 W
Thermal Resistance Rthj-c	3.5 K/W	3.6 K/W	2.1 K/W	2.2 K/W
Tolerances from 0.05Ohms from 10.0Ohms from 50.0Ohms	0.1%/0.25%/0.5%/0.1% 0.05%/0.1%/0.25%/0.5%/1% 0.01%/0.02%/0.05%/0.1%/0.25%/0.5%/1%			
Stability	0.01%			
Shelf Life Stability	25ppm / $\Delta R$ after 1 year 50ppm / $\Delta R$ after 3 year			
Temperature Coefficient	max. $\pm 5\text{ppm/K}$ (-55°C to 155°C) typ. $\pm 3\text{ppm/K}$ (-55°C to 155°C) upon request $\pm 1\text{ppm/K}$ (25°C to 60°C)			
Voltage Proof	750VDC			
max. Current	15A			
Thermal EMF	$< 0.1\mu\text{V/K}$			
Operating Temperature Range	-55 to 155°C			
Resistor Material	NiCr-Foil			
Substrate	Al <sub>2</sub> O <sub>3</sub>		AlN	
Housing	Epoxy+Al-heatsink			
Connector Material	Cu tinned			
Terminals	4			
Max. torque	1.0Nm			
Notes	Specially designed for applications with fast changing electrical load			

## Temperature Coefficient



## Derating



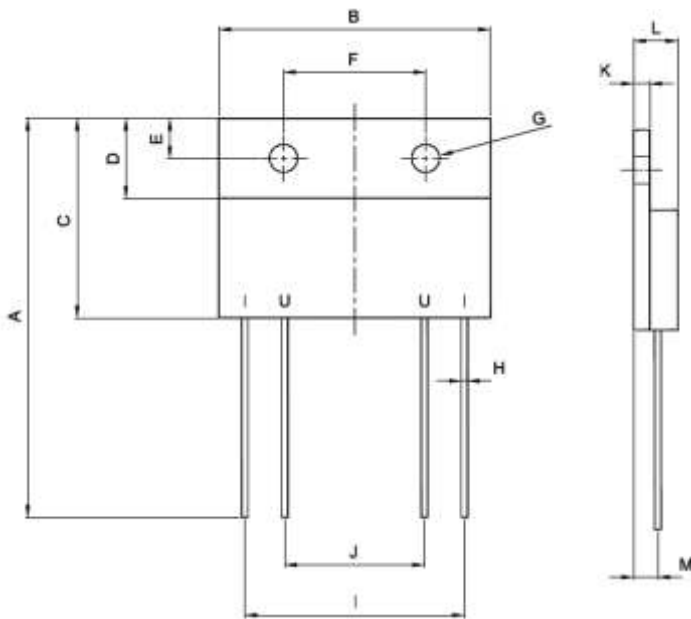
Power Rating Notes-  
the FHR series resistors must be attached to a suitable heat-sink,  
the maximum internal resistor temperature is 155°C.  
To specify an appropriate heatsink use the following formula:

$$R_{\text{OH}} = \frac{T_{\text{MAX}} - (P \times R_{\text{OH}}) - T_{\text{A}}}{P}$$

Where:  $R_{\text{OH}}$  = Thermal resistance of heatsink (K/W)  
 $R_{\text{SH}}$  = Thermal resistance of resistor (K/W)  
 $T_{\text{MAX}}$  = Maximum temperature of resistor  
 $T_{\text{A}}$  = Ambient temperature of heatsink (°C)  
 $P$  = Power through resistor (W)

## Dimensions

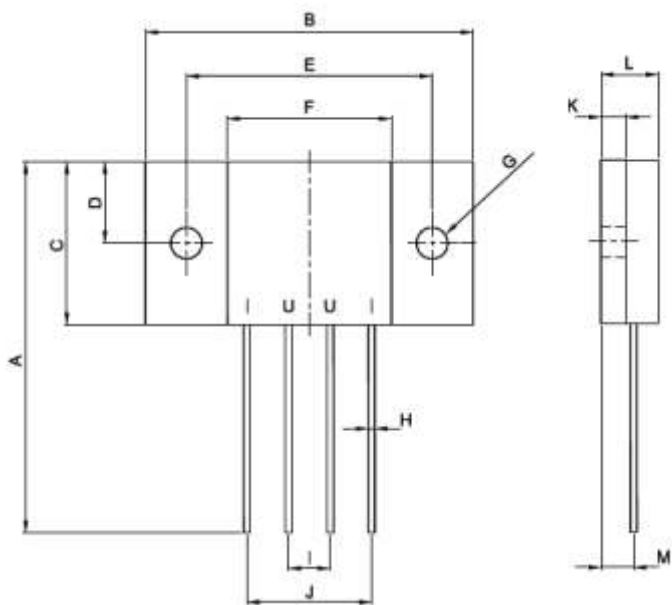
UTR 4-3425/UVR 4-3425



Dimension	mm	tol. (± mm)	inches	tol. (± inches)
A	50.00	2.0	1.97	0.079
B	34.00	0.3	1.34	0.012
C	25.00	0.2	0.98	0.008
D	10.00	0.2	0.39	0.008
E	5.00	0.1	0.20	0.004
F	17.80	0.2	0.70	0.008
G	φ 3.50	0.1	φ 0.14	0.004
H	φ 0.8	0.1	φ 0.031	0.004
I	27.50	0.2	1.08	0.008
J	17.50	0.2	0.69	0.008
K	2.00	0.1	0.08	0.004
L	5.50	0.1	0.22	0.004
M	3.00	0.2	0.12	0.008

# UTR UVR精密分流电阻 Precision Shunt Resistors

UTR 4-4020/UVR 4-4020



Dimension	mm	tol. (± mm)	inches	tol. (± inches)
A	45.40	2.0	1.79	0.079
B	40.00	0.3	1.57	0.012
C	20.00	0.2	0.79	0.008
D	10.00	0.2	0.39	0.008
E	30.00	0.2	1.18	0.008
F	20.00	0.2	0.79	0.008
G	φ 3.80	0.1	φ 0.15	0.004
H	φ 0.8	0.1	φ 0.031	0.004
I	5.08	0.1	0.20	0.004
J	15.24	0.2	0.60	0.008
K	3.00	0.1	0.12	0.004
L	7.00	0.1	0.28	0.004
M	4.00	0.1	0.16	0.008

## Type Composition

Example

UTR 2-3025	0R001	F	C5	Boxes
Type	Resistance(Ω)	Tolerance	T.C.R	Packing
	0R001=0.001Ω	F ±1% D ±0.5% B ±0.1% W ±0.05% P ±0.02%	C8 ±3ppm C7 ±5ppm C6 ±10ppm C5 ±15ppm	