



ULTRA PRECISION RESISTOR INDEX

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TOKEN ELECTRONICS IND. CO., LTD.

HONESTY PERFECTION SHARING

Catalogue of Ultra Precision Resistors

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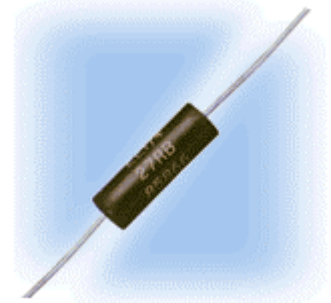


HIGH PRECISION RESISTORS - SERIES EE

PRECISION RESISTORS

Features: (Mold Style)

- High Stability
- High precision
- Mositure proof
- come up to MIL-R-10509
- Temp.Range-65~175°C



TYPE		EE1/20	EE1/10	EE1/8	EE1/4	EE1/2
TYPE OF GJB1929		RJ52	RJ53	RJ54	RJ55	RJ56
Power Rating At tu °C (W)	70°C	0.067	0.125	0.250	0.500	0.750
	100°C	0.057	0.110	0.173	0.350	0.610
	125°C	0.050	0.100	0.125	0.250	0.500
Voltage Rating (V)		200	200	250	300	350
Resistance Range (Ω)		10R—1M5	1R0—3M0	1R0—10M0	1R0—5M0	1R0—10M
Dimensions (mm)	L±0.3	3.9	7.0	10.0	14.8	18.3
	D±0.3	1.8	2.5	3.4	5.2	6.5
	d±0.3	0.51	0.63	0.63	0.63	0.80

TYPE		EE1/20	EE1/10	EE1/8	EE1/4	EE1/2
± 0.02%	FROM		10R	10R		
	TO		500K	500K		
± 0.05%	FROM		10R	10R	50R	50R
	TO		750K	1M0	1M0	2M0
± 0.1%	FROM	10R	1R0	1R0	1R0	1R0
	TO	1M0	1M5	2M0	3M0	10M
± 0.25%	FROM	10R	1R0	1R0	1R0	1R0
	TO	1M0	1M5	2M5	5M0	10M
± 0.5%	FROM	10R	1R0	1R0	1R0	1R0
	TO	1M0	2M0	3M0	5M0	10M0
± 1.0%	FROM	10R	1R0	1R0	1R0	1R0
	TO	1M5	3M0	10M	5M0	10M
± 5PPM/°C (C7)	FROM		10R	10R	100R	100R
	TO		1M0	1M0	500K	500K
± 10PPM/°C (C6)	FROM	30R	1R0	1R0	1R0	1R0
	TO	500K	1M0	1M0	750K	750K
± 15PPM/°C (C5)	FROM	30R	1R0	1R0	1R0	1R0
	TO	750K	1M0	1M5	1M0	1M5
± 20PPM/°C (C4)	FROM	30R	1R0	1R0	1R0	1R0
	TO	750K	1M5	2M0	2M0	2M0
± 25PPM/°C (C3)	FROM	10R	1R0	1R0	1R0	1R0
	TO	1M2	2M5	3M0	3M5	5M0
± 50PPM/°C (C2)	FROM	10R	1R0	1R0	1R0	1R0
	TO	1M5	3M0	10M	5M0	10M



HIGH PRECISION RESISTORS - SERIES RE

PRECISION RESISTORS

Features: (Coated Style)

- High Stability
- High precision
- Small size
- come up to MIL-R-10509
- Temp.Range-55~155°C
- Stability: ±0.5%



TYPE		RE1/8	RE1/6	RE1/4	RE1/2	RE3/4
Power Rating	70°C	0.15	0.25	0.50	1.0	1.5
At tu °C	100°C	0.10	0.15	0.25	0.50	0.75
(W)	125°C	0.05	0.08	0.125	0.25	0.38
Voltage Rating (V)		200	200	250	300	350
Resistance Range(Ω)		10R-1M5	1R0-3M0	1R0-10M	1R0-5M0	1R0-10M
Dimensions	L±0.3	3.80	6.20	9.10	13.1	15.5
	D±0.3	1.50	1.80	2.10	4.00	5.00
(mm)	C±0.3	26	38	38	38	38
	d±0.3	0.51	0.63	0.63	0.63	0.80
Tolerance Ranges		P(±0.02%), W(±0.05%), B(±0.10%), C(±0.25%), D(±0.5%), F(±1%)				
TC—Range		C7(±5PPM/°C), C6(±10PPM/°C), C5(±15PPM/°C), C4(±20PPM/°C), C3(±25PPM/°C), C2(±50PPM/°C)				

NOTE: L-Length of Resistor Body,C-Length of Lead,D-Diameter of Resistor Body,d-Diameter of Lead.



TOKEN MEANS QUALITY AND SERVICE

Precision, Temperature Coefficient and Resistance Tolerance Code Table

TYPE		RE1/8	RE1/6	RE1/4	RE1/2	RE3/4
± 0.02%	FROM		10R	10R		
	TO		500K	500K		
± 0.05%	FROM		10R	10R	50R	50R
	TO		750K	1M0	1M0	2M0
± 0.1%	FROM	10R	1R0	1R0	1R0	1R0
	TO	1M0	1M5	2M0	3M0	10M
± 0.25%	FROM	10R	1R0	1R0	1R0	1R0
	TO	1M0	1M5	2M5	5M0	10M
± 0.5%	FROM	10R	1R0	1R0	1R0	1R0
	TO	1M0	2M0	3M0	5M0	10M0
± 1.0%	FROM	10R	1R0	1R0	1R0	1R0
	TO	1M5	3M0	10M	5M0	10M
± 5PPM/°C (C7)	FROM		10R	10R	100R	100R
	TO		1M0	1M0	500K	500K
± 10PPM/°C (C6)	FROM	30R	1R0	1R0	1R0	1R0
	TO	500K	1M0	1M0	750K	750K
± 15PPM/°C (C5)	FROM	30R	1R0	1R0	1R0	1R0
	TO	750K	1M0	1M5	1M0	1M5
± 20PPM/°C (C4)	FROM	30R	1R0	1R0	1R0	1R0
	TO	750K	1M5	2M0	2M0	2M0
± 25PPM/°C (C3)	FROM	10R	1R0	1R0	1R0	1R0
	TO	1M2	2M5	3M0	3M5	5M0
± 50PPM/°C (C2)	FROM	10R	1R0	1R0	1R0	1R0
	TO	1M5	3M0	10M	5M0	10M



HIGH PRECISION RESISTORS - SERIES RN

PRECISION RESISTORS

Features: (Mold Style)

- High Stability
- High precision
- Moisture proof
- Come up to MIL-R-10509
- Temp.Range-65~175°C
- Stability: $\pm 0.5\%$



TYPE		RN50	RN55	RN60	RN65	RN70
TYPE of GJB244		RJK52	RJK53	RJK54	RJK55	RJK56
Power Rating	70°C	0.067	0.125	0.250	0.500	0.750
At tu °C (W)	125°C	0.050	0.100	0.125	0.250	0.500
Voltage Rating (V)		200	200	250	300	350
Dimensions (mm)	L ± 0.3	3.9	7.0	10.0	14.8	18.3
	D ± 0.3	1.8	2.5	3.4	5.2	6.5
	d ± 0.3	0.51	0.63	0.63	0.63	0.80
MIL—Approved	FROM	10R	49R9	49R9	49R9	24R9
Resistance Range(Ω)	TO	100K	100K	499K	1M0	1M0
Tolerance Ranges		B($\pm 0.10\%$), C($\pm 0.25\%$), D($\pm 0.5\%$), F($\pm 1\%$)				
TC—Range		C3($\pm 25\text{PPM}/^\circ\text{C}$), C2($\pm 50\text{PPM}/^\circ\text{C}$), C(C $\pm 100\text{PPM}/^\circ\text{C}$)				

NOTE: L-Length of Resistor Body,C-Length of Lead,D-Diameter of Resistor Body,d-Diameter of Lead.

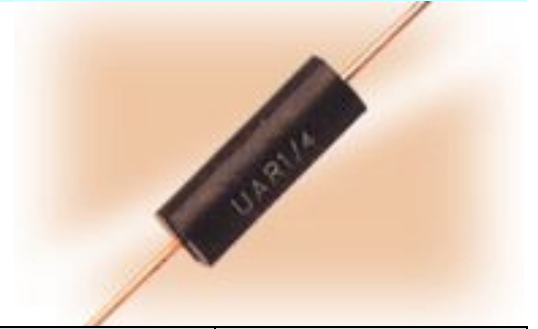


MOLD TYPE PRECISION RESISTOR - SERIES UAR

PRECISION RESISTORS

Features: (Mold Style)

- High Stability
- High precision
- Moisture proof
- Temp.Range-20~125°C
- Stability: ±0.1%



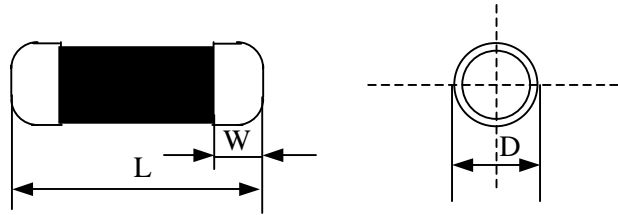
TYPE	UAR1/4	UAR1/8	UAR1/10
POWER Rating at tu 70°C	0.250	0.125	0.100
Voltage Rating(V)	200	150	100
Resistance Range(Ω)	500R—1M0	500R—1M0	500R—1M0
TC—Range(PPM/°C)	C3(±25PPM/°C), C4(±20PPM/°C), C5(±15PPM/°C), C6(±5PPM/°C), C7(±5PPM/°C)		
Tolerance Range	B(±0.10%)	W(±0.05%)	P(±0.02%)
Dimensions (mm)	L±0.3	14.8	10.0
	D±0.3	5.2	3.4
	d±0.3	0.63	0.63

NOTE: L-Length of Resistor Body, C-Length of Lead, D-Diameter of Resistor Body, d-Diameter of Lead.



MOLD TYPE PRECISION RESISTOR - SERIES UAR

TYPE: METAL FILM MELF RESISTORS



TYPE		3215	5918	8820
Power Rating	70°C	0.15	0.25	0.5
At tu °C(W)	125°C	0.05	0.10	0.125
Voltage Rating (V)		200	200	250
Resistance Range(Ω)		10R—500K	10R—1M0	10R—2M0
Tolerance Ranges		±1% (F), ±0.5% (D), ±0.25% (C) ±0.1% (B), ±0.05% (W), ±0.02% (P)		
TC—Range		C±100PPM/°C, ±50PPM/°C, ±25PPM/°C ±20PPM/°C, ±15PPM/°C, ±10PPM/°C		
Dimensions (mm)	L	3.2	5.9	8.8
	D	1.5	1.8	2.0
	W	0.8	1.14	1.35

Performance Characteristics

Test Item	Mil-Limit
Heat Rise	±(0.25%+0.05Ω)
Low Temper. Operation	±(0.25%+0.05Ω)
Short Time Overload	±(0.25%+0.05Ω)
Dielectric Strength	±(0.25%+0.05Ω)
Load Life	±(0.5%+0.05Ω)
Insulation Resistance	>10 [#] MΩ
Shock Test	±(0.25%+0.05Ω)
Vibration Test	±(0.25%+0.05Ω)

NOTE: L-Length of Resistor Body, C-Length of Lead, D-Diameter of Resistor Body, d-Diameter of Lead.

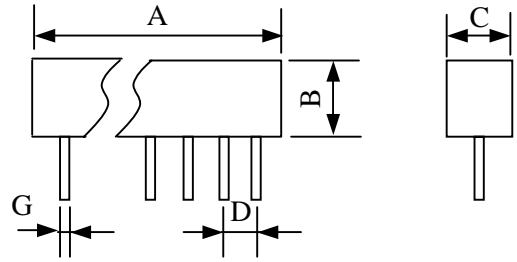


MELF PRECISION RESISTORS - SERIES MELF

PRECISION RESISTORS

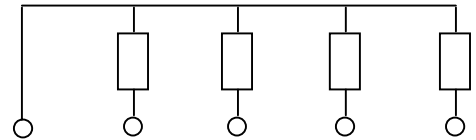
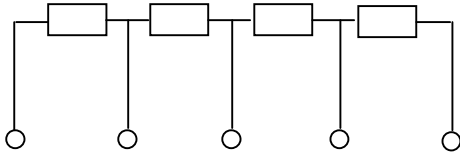
Features: High precision Resistors Network (SIL)

1. High Stability
2. High Precision
3. Low TCR
4. Good Tracking

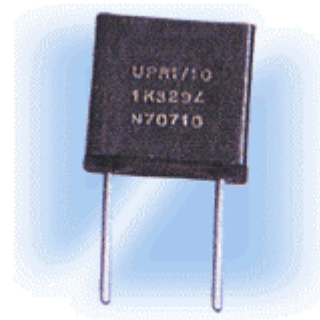


Power Rating at 70°C (W)	0.125	
Max. Working Voltage (V)	200	
Resistance Range (Ω)	10R—2M0	
Absolute Tolerance	±1.0% ~ ±0.10%	
Relative Tolerance	±0.5% ~ ±0.005%	
Temperature Coefficient	±2 ~ ±50PPm/°C	
Relative TCR	±2 ~ ±15PPm/°C	
Working Temperature (°C)	-155 ~ +125	
Dimensions (mm)	A	10.5 ~ 42
	B	12 ± 0.5
	C	4 ± 0.5
	D	≥ 2.54
	E	10 ± 2.0
	F	0.63 ± 0.05

Examples for internal circuit:



Resistor Network not listed above can be produced as well, please contact our technology Dept.



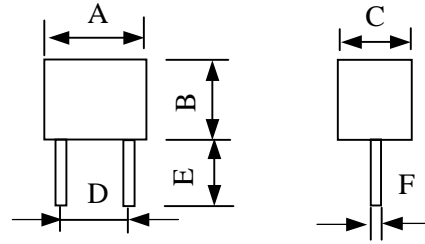


ULTRA PRECISION METAL FILM RESISTORS

PRECISION RESISTORS

Features: Ultra-Precision Metal Film Resistor

1. High Stability
2. High Precision
3. Low TCR



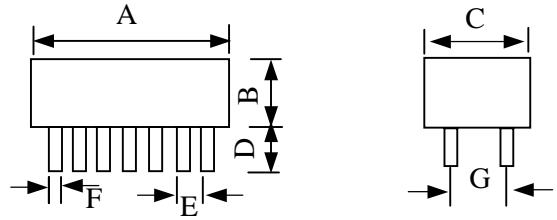
TYPE		UPR 1/10
Power Rating at 70°C (W)		0.125
Max. Working Voltage (V)		200
Resistance Range (Ω)		10R—2M0
Tolerance Range		$\pm 0.1\%$, $\pm 0.05\%$, $\pm 0.02\%$, $\pm 0.01\%$
Temperature Coefficient		$\pm 2 \sim \pm 20 \text{ ppm}/^\circ\text{C}$
Working Temperature ($^\circ\text{C}$)		-55 ~ +125
Dimensions (mm)	A	10.5 \pm 0.3
	B	9.2 \pm 0.3
	C	4.0 \pm 0.3
	D	7.6 \pm 0.5
	E	10 \pm 2.0
	F	0.63 \pm 0.05



PRECISION RESISTORS NETWORK - SERIES UPRN

PRECISION RESISTORS

Features: Precision Resistors Network (DIP)
(Sealed in Epoxy)



Resistance Range (Ω)	1R0—1M0	
Tolerance Range	$\pm 0.05 \sim \pm 2.0\%$	
TCR Range	$\pm 5 \sim \pm 50 \text{ppm}/^\circ\text{C}$	
Max. Working Voltage (V)	200V	
Power Rating at 70 $^\circ\text{C}$ (W)	0.125*7	
Dimensions (mm)	A	20.5 \pm 0.3
	B	5.0 \pm 0.3
	C	10.7 \pm 0.3
	D	4.0 \pm 0.5
	E	2.54 \pm 0.3
	F	0.63 \pm 0.05
	G	7.5 \pm 0.3

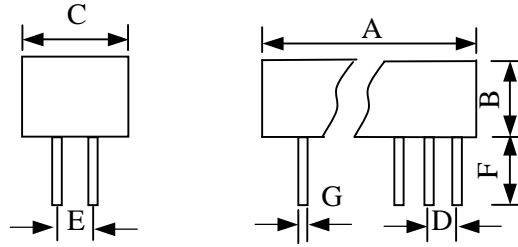


HIGH PRECISION RESISTOES - SERIES UPRN

PRECISION RESISTORS

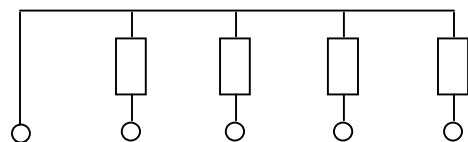
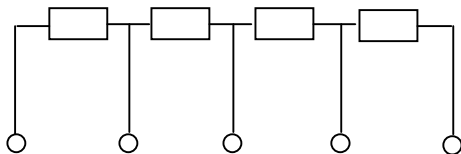
Features: High Precision Resistors Network (D.L.)

1. High Stability
2. High Precision
3. Low TCR
4. Good Tracking



TYPE	UPR 1/10	
Power Rating at 70°C (W)	0.125	
Max. Working Voltage (V)	200	
Resistance Range (Ω)	10R—2M0	
Absolute Tolerance	$\pm 1.0\%$ ~ $\pm 0.01\%$	
Relative Tolerance	$\pm 0.5\%$ ~ $\pm 0.005\%$	
Temperature Coefficient	$\pm 2 \sim \pm 50 \text{ ppm}/^\circ\text{C}$	
Relative Temperature Coefficient	$\pm 2 \sim \pm 15 \text{ ppm}/^\circ\text{C}$	
Working Temperature ($^\circ\text{C}$)	-55~+125	
Dimensions(mm)	A	10.5~42
	B	12 \pm 0.5
	C	4 \pm 0.3
	D	≥ 2.4
	E	≥ 2.4
	F	10 \pm 2.0
	G	0.63 \pm 0.05

Examples for internal circuit:



Resistor Network not listed above can be produced as well, please contact our technology Dept.

