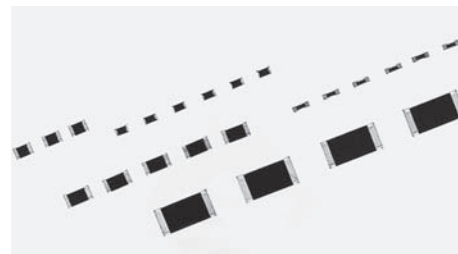


HC

High Value Chip Resistors

TYPE

Resistance Range $1\text{M}\Omega \sim 150\text{G}\Omega$



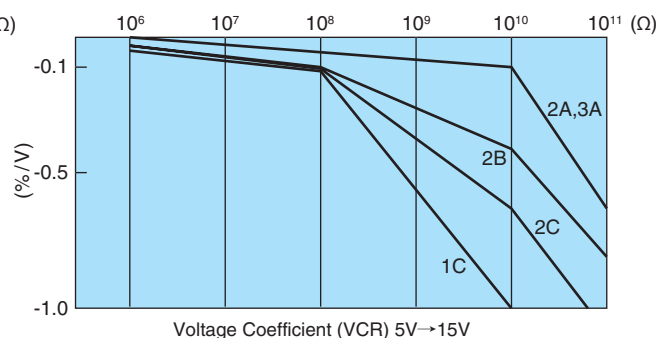
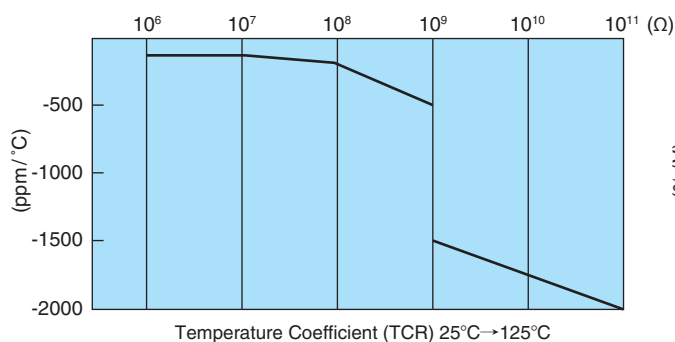
The HC type resistors are small in size, but offer high resistance and have found wide application in measuring instruments, sensor and many other apparatuses.

FEATURES

- Small in size, lightweight, and ideal for application in laborsaving equipment.
- A wide range of operating temperatures.
- Stable performance obtained because of excellent long-term stability.

CHARACTERISTICS

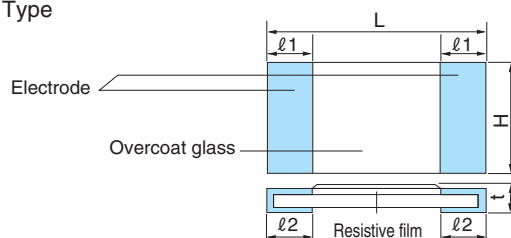
Item	Characteristics	Test method
Long-term stability	$\pm 0.5\%$	At normal temperature and humidity for 1,000hr.
High temperature loading	$\pm 1\%$	DC15V, 1.5hr ON, 0.5hr OFF, 1,000hr at 70°C
Resistance to soldering heat	$\pm 1\%$	260°C $\pm 5^\circ\text{C}$ 10sec $^{+1}_0$ sec
Short-time overload	$\pm 1\%$	Test for 5sec using maximum overload voltage.
Operating temperature range	-55°C \sim +125°C	



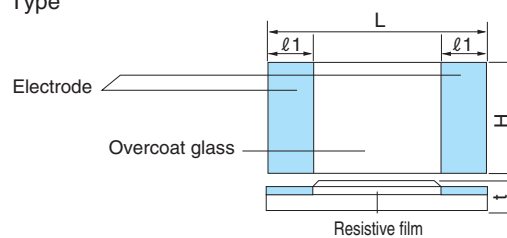
PRODUCTION DATA

Shape

D Type



T Type



Type	Rated power (W)	Max. working voltage DC (V)	Max. overload voltage DC (V)	Range of resistance values		Dimensions (mm)					Electrode shape ※1	Resistance tolerance (%)
				Min. (M Ω)	Max. (G Ω)	L	H	t	l1	l2		
HC3A	1	300	500	1	150	6.4 ± 0.2	3.2 ± 0.2	0.55 ± 0.1	0.5 ± 0.3	0.5 ± 0.3	D	± 5 (J) ※2
HC2A	1/8	150	300	1	150	3.2 ± 0.2	1.6 ± 0.2	0.55 ± 0.1	0.5 ± 0.3	0.5 ± 0.3	D	± 10 (K)
HC2B	1/16	75	150	1	150	2.0 ± 0.2	1.25 ± 0.2	0.5 ± 0.1	0.4 ± 0.2	0.4 ± 0.2	D	± 20 (M)
HC2C	1/32	50	100	1	150	1.6 ± 0.1	0.8 ± 0.1	0.45 ± 0.1	0.2 ± 0.1	0.3 ± 0.1	D	± 30 (N)
HC1C	1/60	50	100	1	150	1.0 ± 0.1	0.5 ± 0.1	0.3 ± 0.05	0.2 ± 0.1	0.25 $^{+0.15}_{-0.1}$	D	± 50

NOTICE: ※1 We can also supply the T type of electrode shape.

※2 Resistance tolerance are 5% ($\leq 10\text{G}\Omega$)

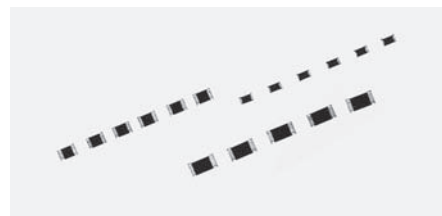
※ Also consult your local dealer for the availability of chip resistors with dimension of your needs and Au terminals.

HP TYPE

Precision High Value Chip Resistors

Resistance Range $1\text{M}\Omega\sim 100\text{M}\Omega$

Tolerance $\pm 1\%$, $\pm 2\%$, $\pm 5\%$



The HP type resistors are the high precise version of HC type resistors.
The resistance tolerance is small, $\pm 1\%$, at $100\text{M}\Omega$ and TCR is also small.

FEATURES

- Very small resistance tolerance at $100\text{M}\Omega$
- Small temperature coefficient
- Stable performance obtained because of excellent long-term stability.

CHARACTERISTICS

Item	Characteristics		Test method
	$1\text{M}\Omega\sim 50\text{M}\Omega$	$51\text{M}\Omega\sim 100\text{M}\Omega$	
Long-term stability	$\pm 0.5\%$	$\pm 0.5\%$	At normal temperature and humidity for 1,000hr.
High temperature loading	$\pm 0.5\%$	$\pm 1\%$	Rated Voltage. 1.5hr ON, 0.5hr OFF, 1,000hr at 70°C
Resistance to soldering heat	$\pm 0.5\%$	$\pm 1\%$	$260^\circ\text{C}\pm 5^\circ\text{C}$ 10sec $\overset{+1}{\underset{0}{\text{sec}}}$
Short-time overload	$\pm 0.5\%$	$\pm 1\%$	Test for 5sec using maximum overload voltage.
Operating temperature range	$-55^\circ\text{C}\sim +125^\circ\text{C}$		

Temperature Coefficient (TCR)

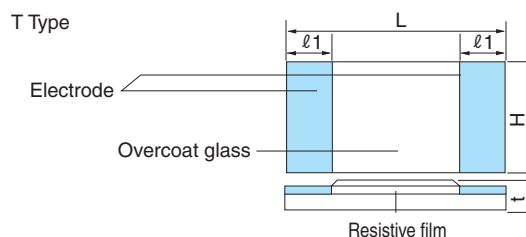
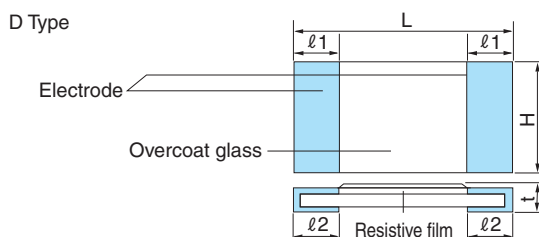
Type	Characteristics		Test method
	$1\text{M}\Omega\sim 50\text{M}\Omega$	$51\text{M}\Omega\sim 100\text{M}\Omega$	
HP2A	$\pm 100\text{ppm}/^\circ\text{C}$	$\pm 200\text{ppm}/^\circ\text{C}$	$25^\circ\text{C}\rightarrow 125^\circ\text{C}$
HP2B			
HP2C			
HP1C			

Voltage Coefficient (VCR)

Type	Characteristics	Test method
HP2A	$-0.02\%/V\leq$	5V→15V
HP2B	$-0.1\%/V\leq$	
HP2C		
HP1C		

PRODUCTION DATA

Shape



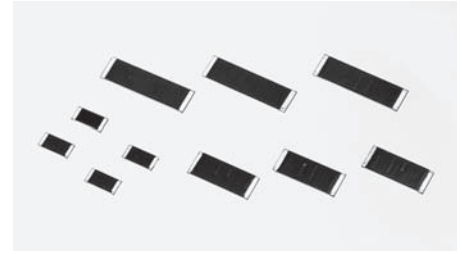
Type	Rated power (W)	Max. working voltage DC(V)	Max. overload voltage DC(V)	Range of resistance Values		Dimensions (mm)					Electrode shape ※1	Resistance tolerance (%)
				Min. (M Ω)	Max. (M Ω)	L	H	t	l1	l2		
HP2A	1/8	150	300	1	100	3.2 ± 0.2	1.6 ± 0.2	0.55 ± 0.1	0.5 ± 0.3	0.5 ± 0.3	D	$\pm 1\text{(F)}$ $\pm 2\text{(G)}$ $\pm 5\text{(J)}$
HP2B	1/16	75	150	1	100	2.0 ± 0.2	1.25 ± 0.2	0.5 ± 0.1	0.4 ± 0.2	0.4 ± 0.2	D	
HP2C	1/32	50	100	1	100	1.6 ± 0.1	0.8 ± 0.1	0.45 ± 0.1	0.2 ± 0.1	0.3 ± 0.1	D	
HP1C	1/60	50	100	1	100	1.0 ± 0.1	0.5 ± 0.1	0.3 ± 0.05	0.2 ± 0.1	$0.25^{+0.15}_{-0.1}$	D	

NOTICE : ※1 We can also supply the T type of electrode shape.

※ Also consult your local dealer for the availability of chip resistors with dimension of your needs and Au terminals.

SM TYPE

Surface Mount Precision Plate Resistors



The SM type precision plate resistors are designed for surface mounting on board by soldering or the other.

FEATURES

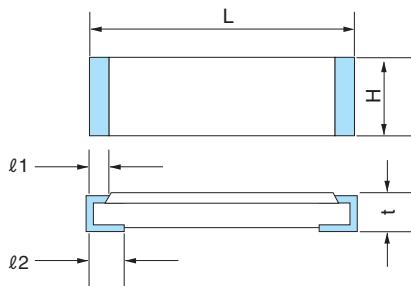
- Small temperature coefficient.
- Excellent moisture resistance.
- Excellent long-term stability.
- Useful as a high voltage load.

CHARACTERISTICS

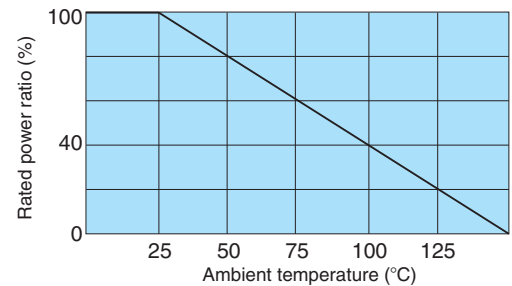
Item	Characteristics			Test method
	SM2	SM5~SM20		
		≤100MΩ	100MΩ<	
Operating temperature range	-55°C~+150°C			
Long-term stability	±0.5%	±0.1%	±1%	At normal temperature and humidity for 10,000hr.
Moisture resistance	±0.5%	±0.1%	±1%	40°C, 90 ~ 95%RH, 1,000hr.
Heat cycle	±0.5%	±0.1%	±1%	-55°C+150°C 5cycles
Resistance to soldering heat	±0.5%	±0.1%	±1%	260°C±5°C 10sec.
Temperature coefficient	♂A B C D ±10 ±25 ±50 ±100 ppm/°C			Measured at 25°C and 75°C

PRODUCTION DATA

Shape



Derating Curve

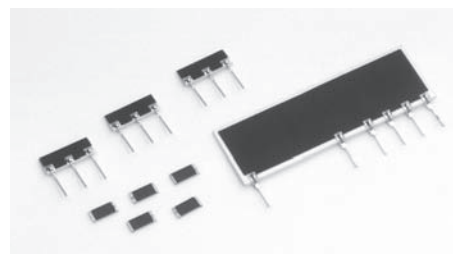


Type	Characteristics		Range of resistance values		Rated power (W)	Max. working voltage DC(kV)	Voltage * coefficient (ppm/V)	Dimensions (mm)					Resistance tolerance (%)
	Symbol	Temperature coefficient (ppm/°C)	Min. (MΩ)	Max. (MΩ)				L	H	t	l1	l2	
SM2	D	±100	0.5	50	0.125	0.3	<100	3.2 ±0.2	1.6 ±0.2	0.55 ±0.1	0.5 ±0.3	0.5 ±0.3	±1(F) ±2(G) ±5(J)
SM5	B	±25	0.5	10	0.5	1.0	<20	6.4 ±0.2	3.2 ±0.2	0.55 ±0.1	0.5 ±0.3	0.5 ±0.3	±0.1(B) ±0.25(C) ±0.5(D) ≤100MΩ
	C	±50	0.5	10									
	D	±100	0.5	1000									
SM10	B	±25	1	100	1.0	2.5	<5	12.8 ±0.2	5.0 ±0.2	0.8 ±0.2	1.0 ±0.3	2.0 ±0.2	
	C	±50	1	100									
SM15	D	±100	1	1000	1.5	3.5	<2	18.0 ±0.2	5.0 ±0.2	0.8 ±0.2	1.0 ±0.3	2.0 ±0.2	±1(F) ±2(G) ±5(J)
SM20	D	±100	1	1000	2.0	5.0	<1	25.5 ±0.2	5.0 ±0.2	0.8 ±0.2	1.0 ±0.3	2.0 ±0.2	±10(K) ±1(G)

NOTICE: ※ Also consult your local dealer for the availability of resistors with a temperature coefficient of "A" characteristic (±10ppm/°C).
 ※ The voltage coefficient are measured at rated voltage and 1/10 rated voltage. (SM2 type are measured at DC5V and DC15V).

BT TYPE

Precision Resistors for Voltage Divider



The BT type resistors are useful precision resistor for voltage divider.

FEATURES

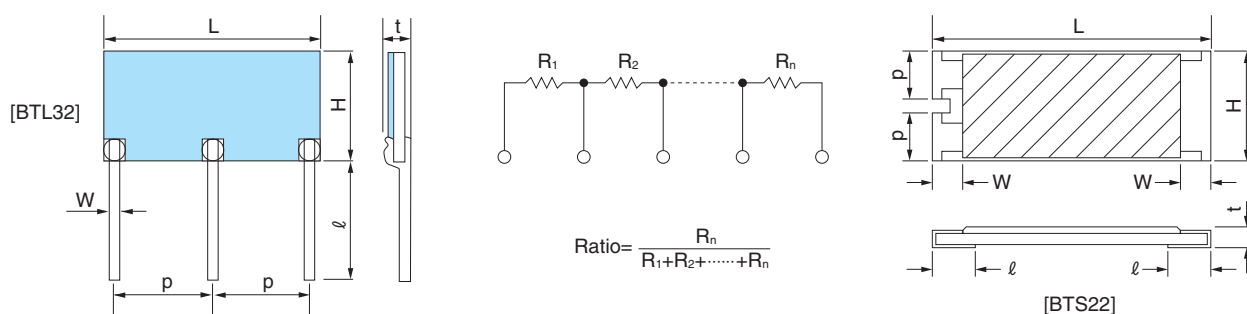
- Excellent accuracy of divider.
- Small temperature coefficient.
- Excellent long-term stability.

CHARACTERISTICS

Item	Characteristics	Test method
Operating temperature range	-55°C~+150°C	
Absolute temperature coefficient	C: ±50ppm/°C (≦100MΩ) D: ±100ppm/°C	Measured at 25°C and 75°C
Ratio temperature coefficient	B: ±25ppm/°C (≦100MΩ) C: ±50ppm/°C	Measured at 25°C and 75°C
Ratio tolerance	B: ±0.1 % (≦ 10MΩ) C: ±0.25 % (≦ 10MΩ) D: ±0.5 % (≦100MΩ) F: ±1 % (≦ 1GΩ)	Measured at DC100V
Ratio stability change in ratio		
Long-term stability	±0.1% (≦100MΩ)	At normal temperature and humidity for 1,000hr.
Moisture resistance	±0.1% (≦100MΩ)	60°C, 90 ~ 95%RH, 1,000hr.
Short-time overload	±0.1% (≦100MΩ)	Rated voltage×2.5 applied for 5sec.

PRODUCTION DATA

Shape



	Type ※1	Range of resistance values		Rated voltage DC (V)	Ratio		Number of elements	Number of pins	Dimensions (mm)						Absolute tolerance (%)
		Min. (MΩ)	Max. (MΩ)		Min.	Max.			L	H	t	p	ℓ	W	
Surface mount	BTS22	1	100	100	1/2	1/50	2	3	6.4	3.2	0.55	1.4	0.8	0.8	±0.1(B) ±0.25(C)≦10M ±0.5(D) ±1(F)≦100M ±2(G) ±5(J) ±10(K)≦1G
Lead wire mount	BTL32	1	100	300	1/2	1/50	2	3	12.7	5.08	1.8	5.08	7.5	0.5	
	BTL5*	1	100	500	1/2	1/100	2~4	3~5	25.4	5.08	1.8	※2	7.5	0.5	
	BTL7*	1	1000	1200	1/2	1/10000	2~9	3~10	50.8	19.0	1.8	※2	7.5	0.5	

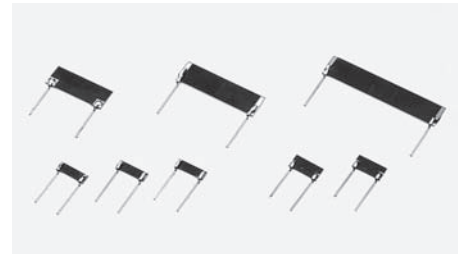
NOTICE: ※1 The mark of Types '* ' is number of elements. ※2 The lead pin pitch is 0.2inch at minimum.

※ Consult your local dealer for the availability of resistors with resistance values and ratio which are the ranges given above and with a special shape.

※ Also consult your local dealer for the minimum order quantity.

LM TYPE

Superhigh Precision Plate Resistors



The LM type resistors are superhigh precision plate resistors with simple structure.

FEATURES

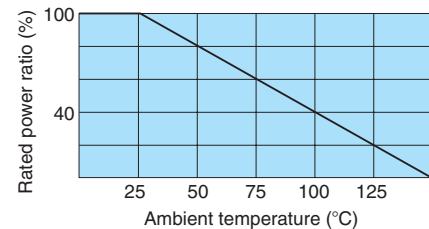
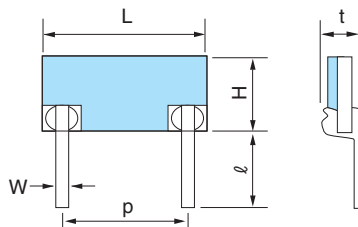
- Small temperature coefficient.
- Excellent moisture resistance.
- Excellent long-term stability.
- Useful as a high voltage load.

CHARACTERISTICS

Item	Characteristics		Test method
	≤100MΩ	100MΩ<	
Operating temperature range	-55°C~+150°C		
Long-term stability	±0.1%	±1%	At normal temperature and humidity for10,000hr.
Moisture resistance	±0.1%	±1%	40°C, 90 ~ 95%RH, 1,000hr.
Heat cycle	±0.1%	±1%	-55°C~+150°C 5cycles
Resistance to soldering heat	±0.1%	±1%	260°C±5°C 10sec.
Temperature coefficient	◌A B C D ±10 ±25 ±50 ±100 ppm/°C		Measured at 25°C and 75°C

PRODUCTION DATA

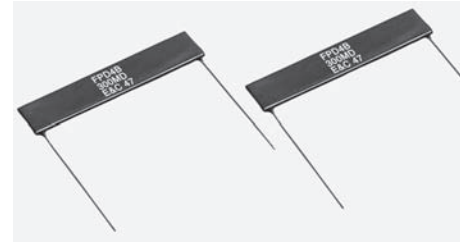
● Shape



Type	Characteristics		Range of resistance values		Rated power (W)	Max. working voltage DC (kV)	Voltage* coefficient (ppm/V)	Dimensions (mm)						Resistance tolerance (%)
	Symbol	Temperature coefficient (ppm/°C)	Min. (MΩ)	Max. (MΩ)				L	H	t	p	ℓ	W	
LM3	B	±25	0.5	10	0.15	0.5	<30	6.3	2.0	1.7	5.08	7.5	0.5	±0.1(B) ±0.25(C) ±0.5(D) ≤100MΩ ±1(F) ±2(G) ±5(J) ±10(K) ≤1GΩ
	C	±50	0.5	10				±0.2	±0.2	±0.3	±0.2	±0.3	±0.1	
	D	±100	0.5	1000				±0.2	±0.2	±0.3	±0.2	±0.3	±0.1	
LM5	B	±25	0.5	10	0.25	0.5	<20	6.3	3.1	1.7	5.08	7.5	0.5	
	C	±50	0.5	10				±0.2	±0.2	±0.3	±0.2	±0.3	±0.1	
	D	±100	0.5	1000				±0.2	±0.2	±0.3	±0.2	±0.3	±0.1	
LM10	B	±25	5	100	0.5	1.0	<5	12.7	5.0	1.8	10.16	7.5	0.5	
	C	±50	5	100				±0.2	±0.2	±0.3	±0.2	±0.3	±0.1	
	D	±100	1	1000				±0.2	±0.2	±0.3	±0.2	±0.3	±0.1	
LM15	B	±25	5	100	0.75	1.5	<2	17.8	5.0	1.8	15.24	7.5	0.5	
	C	±50	5	100				±0.2	±0.2	±0.3	±0.2	±0.3	±0.1	
	D	±100	1	1000				±0.2	±0.2	±0.3	±0.2	±0.3	±0.1	
LM20	B	±25	5	100	1.0	2.0	<1	25.4	5.0	1.8	22.86	7.5	0.5	
	C	±50	5	100				±0.2	±0.2	±0.3	±0.2	±0.3	±0.1	
	D	±100	1	1000				±0.2	±0.2	±0.3	±0.2	±0.3	±0.1	

NOTICE: ※ Also consult your local dealer for the availability of resistors with a temperature coefficient of "A" characteristic (±10ppm/°C).
 * The voltage coefficient are measured at rated voltage and 1/10 rated voltage.

FP TYPE Plate Resistors



The FP type resistors are manufactured by sintering the resistive film on the ceramic substrate. They are particularly useful in the high-voltage circuit. Some products are compliant with complete lead free, it's used lead free glass. Complete lead free products reduce the effects on the environment.

FEATURES

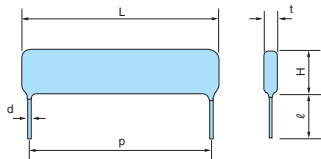
- Useful as a high-voltage load; Highly resistant to the impulse voltage.
- Small temperature coefficient.
- Minimized resistance change in long-term stability.

CHARACTERISTICS

Item	Characteristics	Test method
Operating temperature range	-40°C~+150°C	
Temperature coefficient	B ±25 C ±50 D ±100 S ±200 ppm/°C	Measured at 25°C and 75°C
Long-term stability	±1%	At normal temperature and humidity for 10,000hr.
Moisture resistance	±1%	40°C, 90 to 95%RH, 250hr.
Load life	±1%	Rated power×1/2 at normal temperature for 3,000hr

PRODUCTION DATA

● Shape



Type ※1	Complete lead free	Characteristics		Range of resistance values		Rated power (W)	Max. working voltage DC(kV)		Dimensions (mm)					Resistance tolerance (%)	
		Symbol	Temperature coefficient (ppm/°C)	Min. (MΩ)	Max. (MΩ)		in air	Molding	L (Max.)	p	H (Max.)	t	ℓ		d
FPD1/2		B	±25	2	70	1/2	2	4	19	14±1	8.5	2.5±1	33±3	0.6	±0.5(D) ±1(F) ±5(J)
		C	±50	2	70										
		D	±100	0.05	500										
		S	±200	0.01	1000										
FPD1		B	±25	3	100	1	5	10	27	21.5±1	8.5	2.5±1	33±3	0.6	
		C	±50	3	100										
		D	±100	0.05	1000										
FPD1L	○	S	±200	1	1000										
FPD2		B	±25	5	150	2	15	30	52	46±1	13.5	2.5±1	33±3	0.6	
		C	±50	5	150										
		D	±100	0.1	1000										
FPD2L	○	S	±200	1	1000										
FPD4		B	±25	10	300	4	15	30	52	46±1	13.5	2.5±1	33±3	0.6	
		C	±50	10	300										
		D	±100	0.1	1000										
FPD4L	○	S	±200	1	1000										

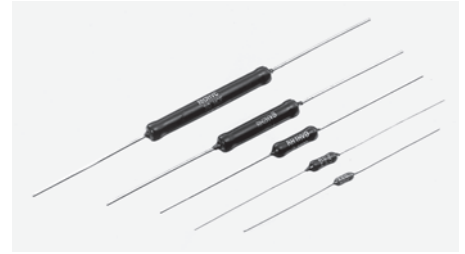
NOTICE: ※1 Type of complete lead free are marked with symbolic code "L" (Example : FPD1LS 100MF).

※ Consult your local dealer for the availability of resistors with resistance values and tolerances which are outside the ranges given above and of a special shape.

<CAUTION> Rated power recommend derate less than 50% for long term use.

RH TYPE

Superhigh Precision High Voltage Resistors



The RH type resistors are used mainly in the physical and chemical measuring instruments, X-ray apparatuses, electron microscopes, and other industrial equipments.

FEATURES

- Markedly small temperature coefficient.
- Small in size, light weight, and high reliability.
- Minimized resistance change in long-term stability and load life.
- Protected from changes in pulse voltage.
- A wide range of resistance values stably obtained.
- Fire-retarding.

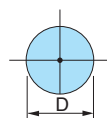
CHARACTERISTICS

Item	Characteristics	Test method
Operating temperature range	-55°C~+150°C	
Short-time overload	±0.5%	Rated voltage×2.5 applied for 5sec
Long-term stability	±0.5%	At normal temperature and humidity for 10,000hr.
Moisture load life	±0.5%	40°C, 90 to 95%RH, Rated power×1/2, 1,000hr.
load life	±0.5%	25°C, Rated power×1/2, 3,000hr.
Resistance to soldering heat	±0.2%	380°C, 3sec.
Temperature coefficient	※1 "A" characteristic, ±10ppm/°C	The test data is based on a temperature difference of 100°C (reference temperature, 25°C measurement temperature, 125°C).
	"B" characteristic, ±25ppm/°C	
	"C" characteristic, ±50ppm/°C	
	"D" characteristic, ±100ppm/°C	
	"S" characteristic, ±200ppm/°C	

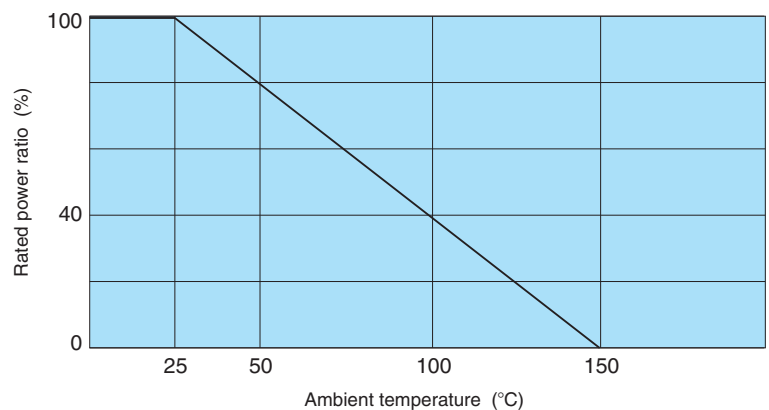
<CAUTION>

Rated power recommend
derate less than 50% for
long term use.

● Shape



● Derating Curve



PRODUCTION DATA

Type	Characteristics		Range of resistance values		Rated power (W)	Max. working voltage DC (kV)	Impulse voltage (kV) 1.2×50 μsec	Dimensions (mm)				Resistance tolerance (%)
	Symbol	Temperature coefficient (ppm/°C)	Min. (MΩ)	Max. (MΩ)				L	D	ℓ	d	
RH1/8HV	B	±25	0.1	50	1/8	0.5	1.25	6±1	2±0.6	30±3	0.6±0.05	±0.5 (D) ≤1GΩ ±1 (F) ±2 (G) ±5 (J) ±10 (K)
	C	±50	0.05	100								
	D	±100	0.01	100								
	S	±200	0.01	500								
RH1/4HV	B	±25	0.1	50	1/4	0.75	1.5	9±1	3±1	38±3	0.6±0.05	
	C	±50	0.1	100								
	D	±100	0.01	300								
	S	±200	0.01	1000								
RH1/2HV	B	±25	0.1	50	1/2	1.5	3	13±1	4.5±1	38±3	0.8±0.05	
	C	±50	0.1	100								
	D	±100	0.1	1000								
	S	±200	0.1	5000								
RH1HV	B	±25	0.1	100	1	2	4	14.5±1	4.5±1	38±3	0.8±0.05	
	C	±50	0.1	500								
	D	±100	0.1	2000								
	S	±200	0.1	10000								
RH2HV	B	±25	0.1	100	2	5	10	26.5±1	5.5±1	38±3	1±0.05	
	C	±50	0.1	500								
	D	±100	0.1	2000								
	S	±200	0.1	10000								
RH3HV	B	±25	1	500	3	10	20	42±2	5.5±1	38±3	1±0.05	
	C	±50	0.1	500								
	D	±100	0.1	2000								
	S	±200	0.1	10000								
RH4HV	B	±25	1	500	4	15	30	52±2	8.5±1	38±3	1±0.05	
	C	±50	0.1	500								
	D	±100	0.1	2000								
	S	±200	0.1	10000								
RH6HV	B	±25	1	500	6	20	40	77±2	8.5±1	38±3	1±0.05	
	C	±50	0.5	500								
	D	±100	0.5	2000								
	S	±200	0.1	10000								
RH8HV	B	±25	1	500	8	30	50	97±2	8.5±1	38±3	1±0.05	
	C	±50	1	500								
	D	±100	1	2000								
	S	±200	0.1	10000								
RH10HV	B	±25	1	500	10	35	60	117±3	8.5±1	38±3	1±0.05	
	C	±50	1	500								
	D	±100	1	2000								
	S	±200	0.1	10000								
RH12HV	B	±25	1	500	12	40	70	137±3	8.5±1	38±3	1±0.05	
	C	±50	1	500								
	D	±100	1	2000								
	S	±200	0.1	10000								
RH14HV	D	±100	1	2000	14	50	80	162±3	8.5±1	38±3	1±0.05	
	S	±200	0.1	10000								
RH16HV	D	±100	1	2000	16	60	90	190±3	8.5±1	38±3	1±0.05	
	S	±200	0.1	10000								

NOTICE: ① Resistance tolerance ±0.1%, ±0.25% resistor is producible at type RU series.

② The resistors to be used in insulation oil and other similar substances have the model number of SR instead of RH (RH4HV to RH16HV). (The Type SR resistors are provided with an oil feed hole.)

③ SSR type resistors (SSR2HV to SSR14HV) are recommended for molding application with resin.

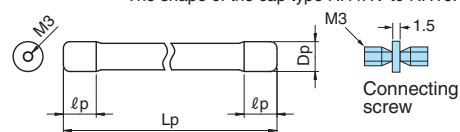
④ The size of SSR type resistors equal to each RH types.

※1 Also consult your local dealer for the availability of resistors with a temperature coefficient of "A" characteristic.

Cap Type

RH4HV~RH16HV

The shape of the cap type RH4HV to RH16HV.



Type	Dimensions (mm)		
	Lp	Dp	lp
RH4HVP	60±2	9.0±0.2	10±1
RH6HVP	85±2	9.0±0.2	10±1
RH8HVP	105±2	9.0±0.2	10±1
RH10HVP	125±2	9.0±0.2	10±1
RH12HVP	145±2	9.0±0.2	10±1
RH14HVP	170±2	9.0±0.2	10±1
RH16HVP	198±2	9.0±0.2	10±1

RH

Ultrahigh TYPE

Precision Ultrahigh Value Resistors

{ RHA_{TYPE} : Hermetically sealed type }



The RH Ultrahigh type resistors are designed for use in the detection of trickle current and for other similar purposes. Their operating stability by far excels that of conventional models.

FEATURES

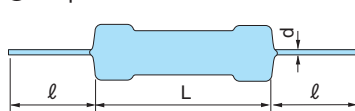
- Small temperature coefficient.
- Easy to handle.
- High reliability.
- Minimized reduction in long-term stability and load life.

CHARACTERISTICS

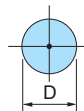
Item	Characteristics			Test method
Operating temperature range	RH Type: $-35^{\circ}\text{C}\sim+70^{\circ}\text{C}$ RHA Type: $-30^{\circ}\text{C}\sim+70^{\circ}\text{C}$			
Long-term stability	$\pm 1\%$			At normal temperature and humidity for 3,000hr.
Reduction in long-term stability at high temperature	$-1\%\leq$			In thermostatic oven maintained at 70°C for 1,000hr
Insulation resistance	$>9.0\times 10^{13}\Omega\text{cm}$			40°C , 90~95%RH, 1,000hr, at 500V
Voltage coefficient	10G Ω ~15G Ω	15G Ω ~7000G Ω	7000G Ω ~10000G Ω	Measured at 10V and 100V
	$-20\text{ppm}/\text{V}\leq$	$-100\text{ppm}/\text{V}\leq$		
			$-500\text{ppm}/\text{V}\leq$	Measured at 100V and 500V

PRODUCTION DATA

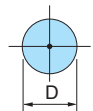
Shape



RH Ultrahigh type



RHA Type (Hermetically sealed type)



Type	Temperature coefficient (ppm/ $^{\circ}\text{C}$)	Range of resistance values		Max. working voltage DC (kV)	Impulse voltage (kV) $1.2\times 50\mu\text{sec}$	Dimensions (mm) (RHA)type				Resistance tolerance (%)
		Min. (G Ω)	Max. (G Ω)			L	D	l	d	
RH1/4HVS	± 400	1	5	0.75	1.5	9 ± 1	3 ± 1	38 ± 3	0.6 ± 0.05	$\pm 1(\text{F})$ $\pm 2(\text{G})$ $\leq 1\text{T}\Omega$ $\pm 5(\text{J})$ $\pm 10(\text{K})$ $\leq 10\text{T}\Omega$
RH1HVS (RHA2S)	± 200	10	15	2	4	14.5 ± 1 (14 ± 0.5)	4.5 ± 1 (5.1 ± 0.2)	38 ± 3	0.8 ± 0.05	
	± 400	15	50							
RH2HVS (RHA3S)	± 200	10	100	5	10	26.5 ± 1 (27 ± 0.5)	5.5 ± 1 (6.5 ± 0.2)	38 ± 3	1 ± 0.05	
	± 400	100	300							
	± 1000	300	600							
	± 1500	600	3000							
RH3HVS (RHA5S)	± 200	10	100	10	20	42 ± 2 (42 ± 0.5)	5.5 ± 1 (6.5 ± 0.2)	38 ± 3	1 ± 0.05	
	± 400	100	600							
	± 1000	600	1000							
	± 1500	1000	10000							

NOTICE:※ The RHA type as an improved version of the RH type Ultrahigh Value Resistor is highly resistant to humidity, protected against a long-term stability, and offers increased reliability.

RU TYPE

Ultrahigh Precision High Accuracy Resistors



The RU type resistors have higher reliability when they are mounted on board, and excellent long term stability.

These are used mainly in semi-conductor equipments, X-ray apparatuses, and other many measuring instruments.

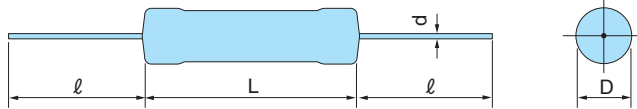
FEATURES

- Small temperature coefficient, small resistance tolerance.
- Small in size, light weight, high reliability and excellent long-term stability.
- Strong resistance for pulse voltages.
- Strong thermal shock resistance when they are mounted on board.

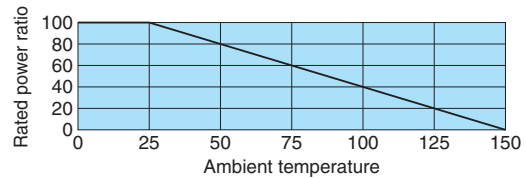
CHARACTERISTICS

Item	Characteristics	Test method
Operating temperature range	-55°C~+150°C	
Short-time overload	±0.1%	Rated voltage×2.5 applied for 5sec.
Resistance to soldering heat	±0.1%	260°C 10sec. or 380°C 3sec.
Heat cycle	±0.1%	-55°C ⇄ +150°C 5 cycle
Long-term stability	±0.3%	At normal temperature and humidity for 10,000hrs. without load
Moisture resistance	±0.3%	40°C 90~95%RH 1,000hrs. exposure without load
Load life	±0.5%	25°C Rated power×1/2 3,000hrs.
Temperature coefficient	※1 A ±10 B ±25 C ±50 D ±100 ppm/°C	Measured at 25°C and 75°C

● Shape



● Derating Curve



Type	Characteristics		Range of resistance values		Rated Power (W)	Max. working voltage DC (kV)	Impulse voltage(kV) 1.2×50 μsec	Dimensions (mm)				Resistance tolerance (%)
	Symbol	Temperature coefficient (ppm/°C)	Min. (MΩ)	Max. (MΩ)				L	D	ℓ	d	
RU1/4	B	±25	0.1	100	1/4	0.75	1.5	9±1	3±1	38±3	0.6±0.05	±0.1 (B) ±0.25 (C)
	C	±50	0.1	100								
	D	±100	0.1	100								
RU1/2	B	±25	0.1	100	1/2	1.5	3	13±1	4.5±1	38±3	0.8±0.05	
	C	±50	0.1	100								
	D	±100	0.1	100								
RU1	B	±25	0.1	100	1	2	4	14.5±1	4.5±1	38±3	0.8±0.05	
	C	±50	0.1	100								
	D	±100	0.1	100								
RU2	B	±25	0.1	100	2	5	10	26.5±1	5.5±1	38±3	1±0.05	
	C	±50	0.1	100								
	D	±100	0.1	100								
RU3	B	±25	0.2	100	3	10	20	42±2	5.5±1	38±3	1±0.05	
	C	±50	0.2	100								
	D	±100	0.2	100								

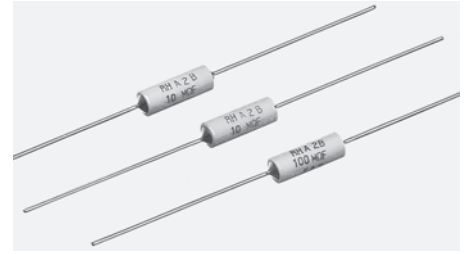
NOTICE : ※1 Also consult your local dealer for the availability of resistors with a temperature coefficient of 'A' characteristic.

<CAUTION>

Rated power recommend derate less than 50% for long term use.

RHA TYPE

Superhigh Precision Hermetically Sealed Resistors



The RHA type resistors are hermetically sealed resistors which exhibit excellent long-term stability and moisture resistance even at high resistance value.

FEATURES

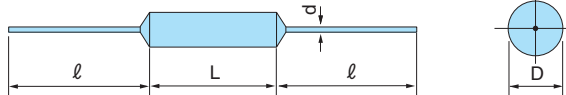
- Extremely low temperature coefficient.
- Small in size, light weight and high reliability.
- Excellent moisture resistance and long-term stability.
- A wide range of resistance values are stably obtained.

CHARACTERISTICS

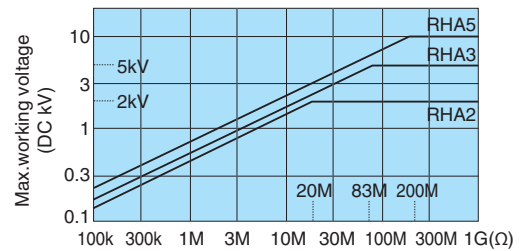
Item	Characteristics			Test method
	≤100MΩ	≤1GΩ	≤10GΩ	
Operating temperature range	-30°C~+75°C			
Voltage coefficient	Max.-2ppm/V		Max.-5ppm/V	Rated voltage and 1/10 of rated voltage
Resistance to soldering heat	±0.1%		±0.2%	350°C for 3 sec.
Load life	±0.2%		±0.5%	Rated voltage for 1,000hr.
Long-term stability	±0.1%	±0.2%	±0.5%	At normal temperature and humidity for 10,000hr.
Moisture resistance	±0.1%	±0.2%	±0.5%	40°C 90~95%RH for 3,000hr.
Temperature coefficient	※ A ±10	B ±25 C ±50 D ±100 ppm/°C	D ±100 S ±200 ppm/°C	Measured at 25°C and 75°C

PRODUCTION DATA

● Shape



In RHA type, both side of hermetically sealed with solder.

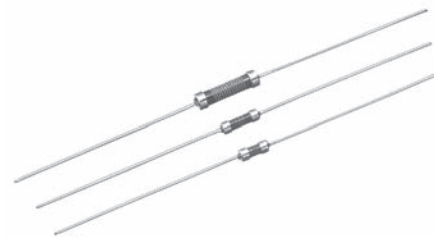


Type	Characteristics		Range of resistance values		Max. working voltage DC (kV)	Dimensions (mm)				Resistance tolerance (%)
	Symbol	Temperature coefficient (ppm/°C)	Min. (MΩ)	Max. (MΩ)		L	D	ℓ	d	
RHA2	B	±25	0.1	100	2	14±0.5	5.1±0.2	38±3	0.8±0.05	±0.1 (B)≤100M ±0.25(C)≤500M ±0.5 (D)≤1G ±1(F) ±2(G) ±5(J)≤10G
	C	±50	0.1	500						
	D	±100	0.1	2000						
	S	±200	0.1	10000						
RHA3	B	±25	0.1	100	5	27±0.5	6.5±0.2	38±3	1 ±0.05	±0.1 (B)≤100M ±0.25(C)≤500M ±0.5 (D)≤1G ±1(F) ±2(G) ±5(J)≤10G
	C	±50	0.1	500						
	D	±100	0.1	2000						
	S	±200	0.1	10000						
RHA5	B	±25	0.1	100	10	42±0.5	6.5±0.2	38±3	1 ±0.05	±0.1 (B)≤100M ±0.25(C)≤500M ±0.5 (D)≤1G ±1(F) ±2(G) ±5(J)≤10G
	C	±50	0.1	500						
	D	±100	0.1	2000						
	S	±200	0.1	10000						

NOTICE : ※ Also consult your local dealer for the availability of resistors with a temperature coefficient of "A" characteristic.

RG TYPE

High Voltage Resistors for High Vacuum



The RG type resistors coated with glass for protecting resistive film are usable at high temperature and in high vacuum.

FEATURES

- High temperature bake out capability.
- No organic materials and usable in high vacuum.

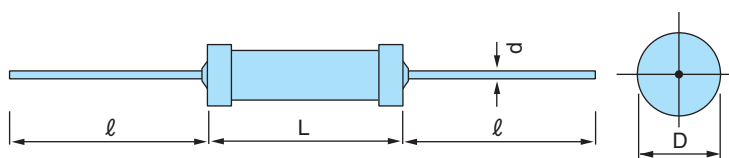
CHARACTERISTICS

※ Data in high vacuum 10^{-4} Pa

Item	Characteristics	Test method
Operating temperature range	$-50^{\circ}\text{C}\sim+200^{\circ}\text{C}$ $400^{\circ}\text{C}(\text{Max.})$	(continuity) (24hr continuity)
Long-term stability	$\pm 0.2\%$	Normal temperature 1000hr
Load life	$\pm 0.5\%$	25°C , Rated Voltage 1000hr
Temperature coefficient	$\pm 200\text{ppm}/^{\circ}\text{C}$	$25^{\circ}\text{C}\sim 125^{\circ}\text{C}$ (Reference 25°C)

PRODUCTION DATA

- Shape



Type	Range of resistance values		Rated power (W)	Max. working voltage (In the atm.) DC (kV)	Impulse voltage (kV) $1.2\times 50\mu\text{s}$	Dimensions (mm)				Resistance tolerance (%)
	Min. (M Ω)	Max. (M Ω)				L	D	l	d	
RG1/4S	0.1	10	1/4	0.75	1.5	8.0 ± 0.5	2.5 ± 0.2	38 ± 3.0	0.6 ± 0.05	$\pm 1(\text{F})$ $\pm 2(\text{G})$ $\pm 5(\text{J})$
RG1/2S	0.1	100	1/2	1.5	3.0	10.5 ± 0.5	3.5 ± 0.2	38 ± 3.0	0.6 ± 0.05	
RG1S	0.1	100	1	2.0	4.0	13.5 ± 0.5	3.5 ± 0.2	38 ± 3.0	0.6 ± 0.05	
RG2S	0.1	100	2	5.0	10.0	25.5 ± 1.0	4.6 ± 0.2	38 ± 3.0	0.6 ± 0.05	

NOTICE : Please consult your local dealer for resistor's shape larger, resistance value outside and resistance tolerance narrower.

HVP TYPE

Power Type High Voltage Resistors



The HVP type resistors are widely used in electron microscopes, X-ray apparatuses, electric precipitators, and many other high voltage equipments.

FEATURES

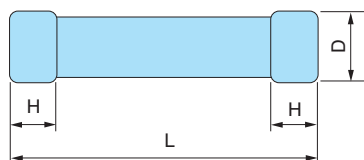
- Usable at 100% of rated power.
- Small temperature coefficient.
- A wide range of resistance values.
- Long load life and high resistance to changes in the pulse voltage.
- Maintains excellent performance against the adverse effect of insulating oil.

CHARACTERISTICS

Item	Characteristics	Test method
Operating temperature range	-25°C~+125°C	
Temperature coefficient	-300~+600ppm/°C	The test date is based on a temperature difference of 50°C (reference temperature, 25°C ; measurement temperature, 75°C)
Short-time overload	±2.5%	Immersed in oil at 75°C ; rated voltage×2.5applied for 5 sec.
Load life	±5%	Immersed in oil at 75°C ; rated voltage applied for 1,000hr.

PRODUCTION DATA

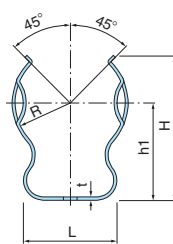
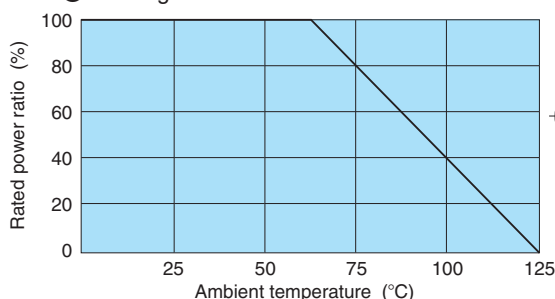
● Shape



Type	Range of resistance values		Rated power (W)	Max. working voltage DC (kV)	Impulse voltage (kV) 1.2×50μsec	Dimensions (mm)			Center tap	Resistance tolerance (%)	Holder Type
	Min. (MΩ)	Max. (MΩ)				L	D	H			
SR30HVP	0.05	2000	5	30	40	100±2	19±0.5	10	φ2	±1 (F) ±2 (G) ±5 (J) ±10(K)	H2
SR60HVP	0.05	5000	10	60	80	200±2	23±0.5	15	M4		H3
SR90HVP	0.05	5000	25	90	120	280±2	30±0.5	20	M8		H4
SR120HVP	0.05	5000	50	120	160	370±2	46±0.5	20			H5
SR150HVP	0.05	5000	100	150	200	470±2	46±0.5	25			H6
SR200HVP	0.1	5000	150	200		600±3	46±0.5	25			
SR250HVP	0.1	5000	200	250		800±3	54±0.5	32			
SR300HVP	0.1	5000	250	300		1000±5	54±0.5	32			

NOTICE: ※Consult your local dealer for the availability of resistors with resistance values which are outside the range given above and with tolerances other than above.

● Derating Curve



Holder Type	Dimensions (mm)							
	R	D	L	H	h1	M	t	W
H2	9	10	16	25	15	4.2	0.8	1.5±0.5
H3	11	15	18	32	21	4.2	1.0	1.5±0.5
H4	14.5	18	24	39	26	6.5	1.0	1.5±1
H5	22.5	20	36	60	38	6.5	1.5	2±1
H6	26.5	25	45	70	47	6.5	1.5	2±1

Variable Resistor Box



The VR100 series are custom-made type resistor box.
This type can set up the 11 favorite resistance value.

■ Type VR100 SERIES

● Shape and Dimensions

Connecting terminals	Binding post : Resistance circuit and guard
Dimensions/Weight	120W×180D×135H(mm)/ ≒1.6kg

*Connecting terminals are possible to change BNC-HV receptacle.

● Specifications

Resistance value	Accuracy (%)	Long-term stability (Standard temp. and humidity)	Temperature coefficient (ppm/°C)	Max. circuit voltage & Power consumption range
100k~1TΩ (Max. 11 values)	±0.1~±10	±0.1% at 10,000hr.	±25, ±50, ±100	Power≦0.5W max. And Applied voltage ≦DC2000V max.
100k~100MΩ				
101M~500MΩ	±0.5~±10	±0.2% at 10,000hr.	±50, ±100	
501M~1GΩ				
1.1G~100GΩ	±1~±10	±1% at 3,000hr.	±200	
101G~600GΩ				
601G~1TΩ				
			±400	
			±1,000	

*We can supply VR100 series for 5kV and 10kV.

Precision Resistor Box



The type HVR1000 series are use for the inspection of insulation tester as a standard resistor box.

■ Type HVR1000 SERIES

● Shape and Dimensions

Connecting terminals	Binding post : Resistance circuit and guard
Dimensions/Weight	100W×65D×72H(mm)/ 300g

● Specifications

Resistance value (Ω)	Measurement voltage DC V _m (V)	Accuracy (%)	Long-term stability (% / year)	Temperature coefficient (ppm/°C)	Voltage coefficient (ppm/V)	Max. Input voltage DC(V)
				Reference temperature 25°C Measurement temperature 20°C and 40°C	Measured between V _m and V _m ×10	
1M	20	±0.05	±0.02	±10	-0.5	200
10M	50	±0.05	±0.02	±10	-0.5	500
100M	100	±0.1	±0.05	±10	-0.5	1,000
1G	100	±0.5	±0.2	±50	-1.0	1,000
10G	100	±0.5	±0.2	±50	-1.0	1,000
100G	100	±0.5	±0.2	±100	-50	1,000
1T	1,000	±1	±0.5	±200	-50 ^{∗2}	1,000
10T	1,000	±2	±1	±500	-100 ^{∗2}	1,000
100T	1,000	±5	±5	-3,000 MAX.	-500 ^{∗2}	1,000

NOTICE: ※1 Condition : Temperature 25°C±1°C, Resistive Humidity 45%±5%.

※2 Voltage coefficient measured between V_m and V_m/10.

Decade Resistor Box



The DR20000 series are assembled specially high-stability resistors
1M Ω ~1111.11G Ω .

These feature make this decade resistor box for use in
production lines as well as in laboratories.

Lineup

Type	Ranges	Number of dials	Range					
			1M Ω	10M Ω	100M Ω	1G Ω	10G Ω	100G Ω
DR24600 <input type="checkbox"/>	1M~ 11.110G Ω	4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DR24700 <input type="checkbox"/>	10M~ 111.10 G Ω		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DR24800 <input type="checkbox"/>	100M~1111.0 G Ω		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DR25600 <input type="checkbox"/>	1M~ 111.110G Ω	5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DR25700 <input type="checkbox"/>	10M~1111.10 G Ω		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DR26600 <input type="checkbox"/>	1M~1111.110G Ω	6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

DR25610 - 5K

Series	Number of dials 3 • 4 • 5 • 6 • 7	Minimum range 3 : 1k Ω (10 ³) 4 : 10k Ω (10 ⁴) 5 : 100k Ω (10 ⁵) 6 : 1M Ω (10 ⁶) 7 : 10M Ω (10 ⁷) 8 : 100M Ω (10 ⁸)	Connecting terminals 0 : MHV type (BNC-HV connector) 1 : Binding post 2 : The other 3 : Binding post for 10K	Connector Position 0 : The left side of the front side 1 : The right side of the front side 2 : The other	Max. circuit voltage Blank : DC 2,000V - 5K : DC 5,000V - 10K : DC10,000V
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Please consult your local dealer for custom-made decade resistor box out of our specifications.

Specifications

	DR20000	DR20010 - 5K	DR20030 - 10K
Accuracy	$\pm 0.1\%$ of set value for 1M Ω , 10M Ω , 100M Ω range $\pm 0.5\%$ of set value for 1G Ω range $\pm 1.0\%$ of set value for 10G Ω , 100G Ω range	$\pm 0.2\%$ of set value for 1M Ω , 10M Ω , range $\pm 0.5\%$ of set value for 100M Ω range $\pm 1.0\%$ of set value for 1G Ω , 10G Ω range $\pm 5.0\%$ of set value for 100G Ω range	
Temperature coefficient	1M Ω , 10M Ω , 100M Ω range : $\pm 25\text{ppm}/^\circ\text{C}$ 1G Ω , 10G Ω range : $\pm 100\text{ppm}/^\circ\text{C}$ 100G Ω range : $\pm 200\text{ppm}/^\circ\text{C}$	1M Ω , 10M Ω range : $\pm 25\text{ppm}/^\circ\text{C}$ 100M Ω , 1G Ω range : $\pm 100\text{ppm}/^\circ\text{C}$ 10G Ω range : $\pm 200\text{ppm}/^\circ\text{C}$ 100G Ω range : $\pm 1000\text{ppm}/^\circ\text{C}$	
Long-term stability	$\pm 0.1\%$ of range for 1M Ω , 10M Ω , 100M Ω (※2) $\pm 0.2\%$ of range for 1G Ω (※2) $\pm 1.0\%$ of range for 10G Ω , 100G Ω (※3)	$\pm 0.2\%$ of range for 1M Ω , 10M Ω , 100M Ω (※2) $\pm 0.5\%$ of range for 1G Ω (※2) $\pm 1.0\%$ of range for 10G Ω , 100G Ω (※3)	
Power consumption range	0.5W/Step, 2W max. for overall steps		
Max. circuit voltage	DC 2,000V	DC 5,000V	DC 10,000V
Insulation resistance	$1 \times 10^{12}\Omega$ at 500V DC (between panel and circuit)		
Withstand voltage	2,400V DC for 1 minute (between panel and circuit)	6,000V DC for 1 minute (between panel and circuit)	15,000V DC for 1 minute (between panel and circuit)
Connecting terminals	MHV type (BNC-HV connector) or Binding post	Binding post	
Dimensions(mm) / Weight(kg)	400W×161D×107H/3.2(※4)	430W×350D×100H/7.8	480W×400D×329H/22
Power	AC85V~250V(50Hz / 60Hz)		

※ 1 Please be careful with working voltage of this instrument since it can not be sometimes loaded to Max. circuit voltage because of over the power consumption range in case of set resistance value being small.

※ 2 Standard temperature (5~35 $^\circ\text{C}$) and humidity (45~85%) nonload at 10,000hr.

※ 3 Standard temperature (5~35 $^\circ\text{C}$) and humidity (45~85%) nonload at 3,000hr.

※ 4 Width for 6 dials is 465mm, weight is 3.8kg.

DC Digital High Voltage Meter

The DHM type digital voltmeter has a high input resistance and measures, like electrostatic voltmeters, voltages produced by piezoelectric devices and other high impedance high voltage power generating equipment. This voltmeter offers high accuracy and short measurement time. Moreover, it is small and rugged and virtually unaffected by the environmental conditions. These features make this voltmeter suited for use in production lines as well as in laboratories.

■ Type DHM (DC) SERIES

■ Shape/Dimensions/Accuracy

Type	Max. measurement voltage DC(kV)	Accuracy ※1 (%) ±2digits	Input resistance	Dimensions (mm)			Weight (kg)
				Width	Depth	Height	
DHM-10	±10	±0.2	10GΩ ±1%	180	200	185	1.9
DHM-20	±20	±0.2		180	200	220	2.0
DHM-30	±30	±0.5		200	230	379	3.0
DHM-40	±40	±0.5		200	230	379	3.0
DHM-50	±50	±0.5		260	330	479	4.5
DHM-60	±60	±0.8		430	330	565	6.0
DHM-100	±100	±1.0		430	330	565	6.0

※ When the accuracy or shape is to be changed consult your local dealer.

※1 Input voltage ≥ 1kV

■ Specifications

Resolution	DHM-10~DHM-20 1V DHM-30~DHM-100 10V
External output	1/10,000 divided voltage (Binding post)
Input structure	One-line ground (No measurement can be made if the test signal is floating)
Sampling rate	2 sampling/sec.
Operating temperature range	25°C ± 15°C
Power	85~260VAC (50Hz/60Hz)

NOTICE: Specifications are subject to change for improvement.

■ Options

R	Range select ※2	10kV range (Resolution 1V) ← → Full range (Resolution 10V)
H	Max. and min. value holding function	The max. or min. holding value are displayed on a digital panel meter.
G	GP-IB and USB interface ※3	Conform to IEEE-488 (GP-IB interface)
	Input resistance ※2	You can choose the input resistance value from 1GΩ to 100GΩ. ※4
	Resolution 1V ※3	Not combine with option R.

※2 Except DHM-10 and DHM-20.

※3 DHM-10 and DHM-20 provide GP-IB interface and resolution 1V as standard.

※4 Accuracy of input resistance more than 50GΩ (>50GΩ) is as follows:

DHM-30,40,50: ±1%, DHM-60,100: ±1.5%

DHM-10
DHM-20



*Photo is optional equipment.

DHM-30
DHM-40
DHM-50



*Photo is optional equipment.

DHM-60
DHM-100



*Photo is optional equipment.

AC Digital High Voltage Meter

The AC type digital high voltage meter for commercial frequency is small rugged and easy to carry, and digital display makes measurement easy. For these reasons, this voltmeter can be used easily as AC high voltmeter in place of a static voltmeter or a transformer for gauge. Although this size is small, this voltmeter can make measurement to AC 50kV.

■ Type DHM (AC) SERIES

Specifications	Type	DHM-30A	DHM-50A
Maximum measurement voltage		AC30kV(RMS)	AC50kV(RMS)
Frequency for measurement		50Hz/60Hz (sine wave)	
Input resistance		500M Ω \pm 1%	250M Ω \pm 1%
Resolution		10V	100V
Accuracy		\pm (2% of reading + 2 digits)	\pm (5% of reading + 2 digits)
Input structure		One-line ground (No measurement can be made if the test signal is floating)	
Sampling rate		2sampling/sec.	
Operating temperature range		25°C \pm 10°C	
Power		85~260VAC (50Hz/60Hz)	
Dimensions and Weight		200W \times 230D \times 393H /3.7kg	430W \times 330D \times 565H /6kg

NOTICE: Specifications are subject to change for improvement. ※ Input voltage \geq 1kV

■ Options

H	Max. and min. value holding function	The max. or min. holding value are displayed on a digital panel meter.
G	GP-IB and USB interface	Conform to IEEE-488 (GP-IB interface)



DHM-30A



DHM-50A

AC / DC Digital High Voltage Meter

The AC/DC type digital high voltage meter has a high input resistance and can measure voltages produced by high voltage generators with a small output capacity. This voltmeter is small, rugged and easy to carry. Moreover, this easy-to-use voltmeter allows highprecision measurement in a short period of time.

■ Type DHM (A/M) SERIES

■ Shape, Dimensions

Type	Max.measurement voltage	Input resistance	Input capacity	Dimensions (mm)			Weight (kg)
				Width	Depth	Height	
DHM-20A/M	AC20kV (RMS) DC±30kV	10GΩ ±1%	≒15pF	200	230	382	4.0
DHM-30A/M	AC30kV (RMS) DC±40kV		≒25pF	260	330	418	7.5
DHM-50A/M	AC50kV (RMS) DC±60kV		≒8pF	430	330	596	10.0

■ Specifications

Frequency for measurement	DC and 40Hz~20kHz (sine wave)
Resolution	10V
Accuracy	AC± (1% of reading +2 digits) DC± (0.5% of reading +2 digits) (crest factor≤3, input voltage≥1kV)
External output	1/10,000 Divided voltage (BNC type)
Input structure	One-line ground (No measurement can be made if the test signal is floating)
Sampling rate	2 sampling/sec.
Operating temperature range	25°C±10°C
Power	85~260VAC (50Hz/60Hz)

NOTICE: Specifications are subject to change for improvement.

■ Options

R	Range select	10kV range (Resolution 1V)←→Full range (Resolution 10V)
H	Max. and min. value holding function	The max. or min. holding value are displayed on a digital panel meter.
G	GP-IB and USB interface	Conform to IEEE-488 (GP-IB interface)
	Resolution 1V	Not combine with option R.



DHM-20A/M
*Photo is optional equipment.



DHM-30A/M
*Photo is optional equipment.



DHM-50A/M
*Photo is optional equipment.

High Voltage Divider

The High voltage divider, excepting the display section, retains the advantages of the E&C's digital high voltage meter and allows full use of your multi-meter. Furthermore, it can be monitored at a distance through use of a cable. Please consult your local dealer for custom-made high voltage divider out of our specifications.

Standard-class High Voltage Divider

■ Type DVI-100S

● Specifications

Type	Rated Voltage	Accuracy	Input Resistance	Output Resistance	Division Ratio	Dimensions (mm)
DVI-100S	DC±100kV	1kV~50kV ±0.1%	10GΩ	1MΩ	10,000:1	430×430×530H
		50kV~100kV ±0.2%*		10MΩ	1,000:1	

NOTICE: Specifications are subject to change for improvement.

NOTICE: * Please consult your local dealer for accuracy±0.1% (50kV~100kV).

High Voltage Divider

■ Type DVI Series

● Specifications

Type	Rated Voltage	Accuracy	Input Resistance	Output Resistance	Division Ratio	Dimensions (mm)
DVI-10	DC±10kV	±0.2%	10GΩ	1MΩ	10,000:1	200×230×170H
DVI-20	DC±20kV	±0.2%	10GΩ	1MΩ	10,000:1	200×230×205H
DVI-30	DC±30kV	±0.5%	10GΩ	1MΩ	10,000:1	320×330×340H
DVI-40	DC±40kV	±0.5%	10GΩ	1MΩ	10,000:1	320×330×340H
DVI-100	DC±100kV	±1%	10GΩ	1MΩ	10,000:1	430×430×526H
DVI-150	DC±150kV	±1%	1GΩ	10kΩ	100,000:1	600×600×1,340H
DVI-200	DC±200kV	±1%	1GΩ	10kΩ	100,000:1	600×600×1,340H

NOTICE: * Specifications are subject to change for improvement.

Unit Type High Voltage Divider

■ Type DVI-50-X-Series

● Specifications

Type	Rated Voltage	Accuracy	Input Resistance	Output Resistance	Division Ratio	Dimensions (mm)
DVI-50-X*	DC±50XkV	$X=1\pm0.5\%$ $X\geq 2\pm 1.0\%$	XGΩ	10XkΩ	100,000:1	400×400×(168+113X)H
DVI-50-1	DC±50kV	±0.5%	1GΩ	10kΩ	100,000:1	400×400×281H
DVI-50-3	DC±150kV	±1%	3GΩ	30kΩ	100,000:1	400×400×507H

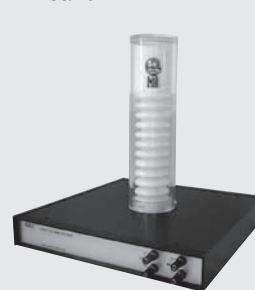
NOTICE: Specifications are subject to change for improvement.

NOTICE: * The X is a number of integer 1 to 10. The unit is extensible in number. (50kV/unit)

DVI-100S



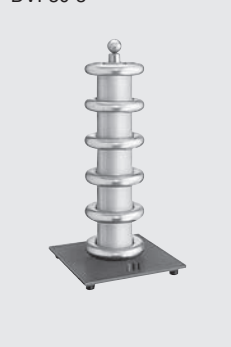
DVI-30/40



DVI-200



DVI-50-5



DVI-50-10



High Voltage Probe



This high voltage probe in connection with oscilloscope can be used to measure the waveform of high voltage.
Inner site of the body is filled with isoration gas for insulation.

■ Type PG Series

● Specifications

Item		P50-G	P100-G	P100-GL	P150-G	P150-GL
Max. input voltage						
DC or ACp-p ※	Insulator is in oil	30kV	80kV	80kV	100kV	100kV
	Insulator is in air		60kV		60kV	
Impulse (duty factor ≤0.01, pulse width ≤1msec)	Insulator is in oil	50kV	110kV	110kV	150kV	150kV
	Insulator is in air		80kV		80kV	
Frequency bandwidth		DC~50MHz, -3dB				
Rise time		≒10nsec.				
Division ratio	Probe only	2,000:1±5%			3,000:1±5%	
	connect with adapter	5,000:1±5%			5,000:1±5%	
Input resistance		1GΩ±5%			2GΩ±5%	
Input capacitance		≒10pF				
Inner gas		SF ₆				
Inner gas pressure		0.25~0.3MPa				
Output cable		≒4m (Fig.4)※				
Condition of usable oscilloscope		Input resistance : 1MΩ±5%, Input capacitance : 7~45pF				
Dimensions		Fig.1	Fig.2	Fig.3	Fig.2	Fig.3
Weight		4.2kg	6.3kg	7.0kg	6.3kg	7.0kg

NOTICE: 1※ On condition continuous wave overs 100kHz, ACp-p voltage will go down.

2※ Division ratio(5,000 : 1, 10,000 : 1) can be manufactured in probe only.

3※ Input resistance 10GΩ can be manufactured.

4※ The optional parts : Adapter,Probe stand,Carrying case.

5※ Output cable ≒10m can be manufactured.

(Rise time and frequency band decrease as the cable length.)



*Probe stand is optional parts.

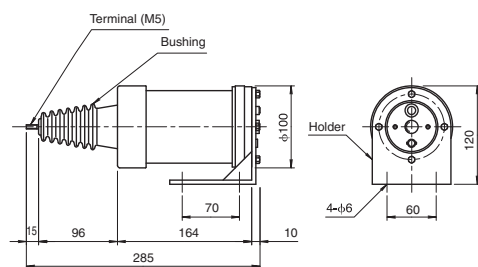
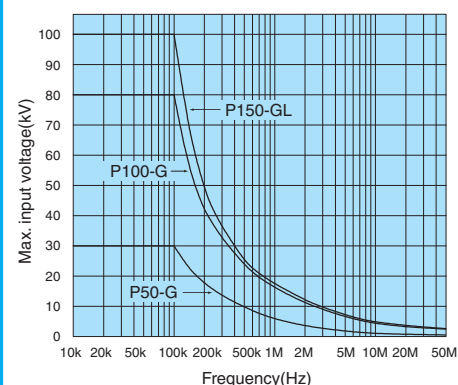


Fig.1

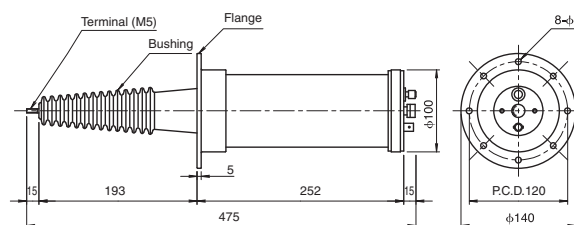


Fig.2

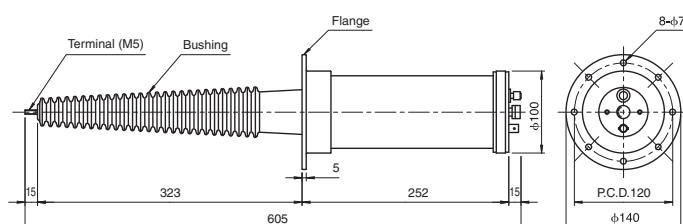


Fig.3

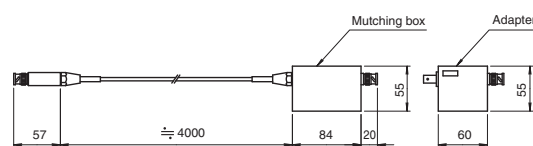


Fig.4