

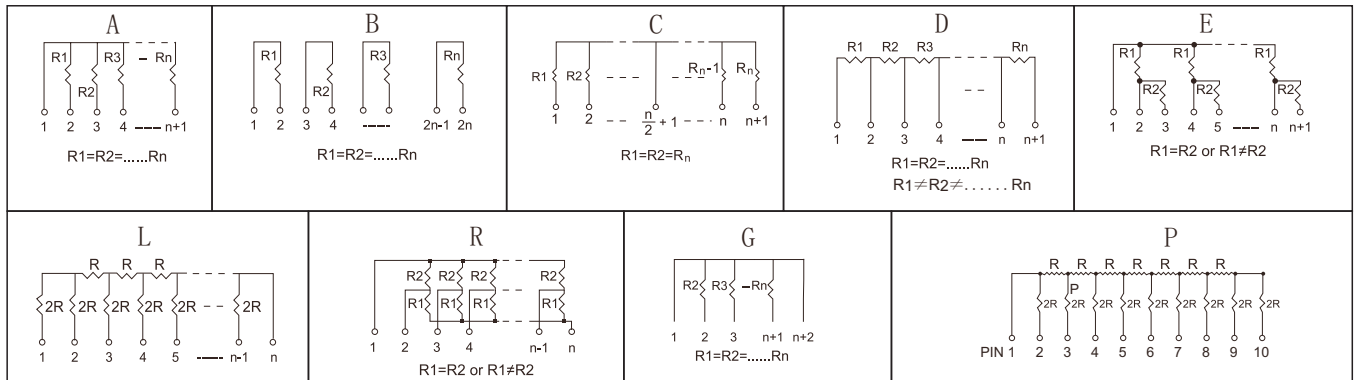
## Features

- Miniature, high density packaging
- High reliability RU02 paste

## Application

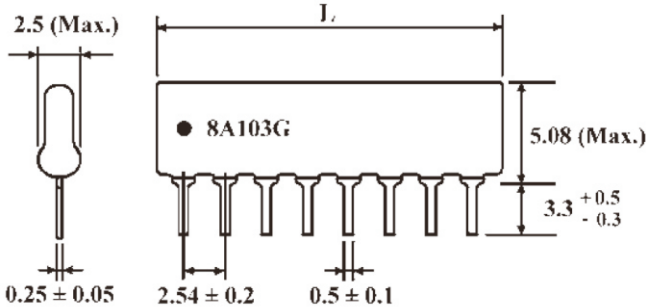
- Control circuit V.C.R.
- Air-conditioner
- Computer, color TV
- Facsimile

## Construction



\*Custom design circuit could be available according to the request.

## Dimensions



Type	Dimensions(mm)	
	PIN	L
GRA	4PIN	10.2
GRB	5PIN	12.7
GRC	6PIN	15.3
GRD	7PIN	17.8
GRE	8PIN	20.4
GRL	9PIN	22.9
GRR	10PIN	25.4
GRG	11PIN	28.0
GRP	12PIN	30.5
	13PIN	33.1
	14PIN	35.6

## Ordering Information

Example:

GRA	0.2	F	10K00
(1)	(2)	(3)	(4)
Series Name	Power Rating	Resistance Tolerance	Resistance

(1)Type:GRA SERIES

(2)Power Rating:0.2=0.2W,0.125=0.125W

(3)Tolerance: F=±1%,G=±2%,J=±5%

(4)Resistance Value:0R100=0.1Ω,0R220=0.22Ω,10R00=10Ω,10K00=10KΩ,1M000=1MΩ

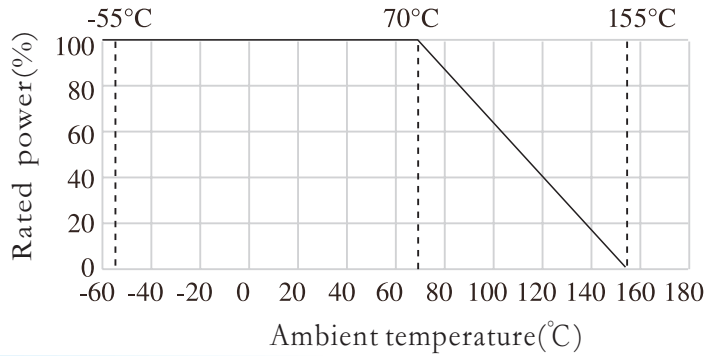
## Reference Standards

JISC 5201-1

## Applications And Ratings

Type	Rated Power(W)	Max. Working Voltage	Max. Overload Voltage	Dielectric Withstanding Voltage	Resistance Range( $\Omega$ )	Tolerance	Temperature Range( $^{\circ}\text{C}$ )
GRB	0.2	100V	150V	200V	10 $\Omega$ ~10M $\Omega$	F $\pm$ 1% G $\pm$ 2% J $\pm$ 5%	-55 $^{\circ}\text{C}$ ~ +155 $^{\circ}\text{C}$
GRA and other	0.125						

## Derating Curve



## Performance

Items	Requirements(JIS C 5201-1)
Temperature coefficient	50 $\Omega$ ~1M $\Omega$ : $\pm$ 200PPM/ $^{\circ}\text{C}$ <50 $\Omega$ & > 1M $\Omega$ : $\pm$ 250PPM/ $^{\circ}\text{C}$
Shor-time overload	$\Delta R/R \leq \pm (0.5\% + 0.1\Omega)$
Insulation resistance	$\geq 10000M\Omega$
Dielectric withstanding voltage	No evidence of flash, arcing or insulation
Terminal strength	$\Delta R/R \leq \pm (0.5\% + 0.1\Omega)$
Soldering heat	$\Delta R/R \leq \pm (0.5\% + 0.1\Omega)$
Solderability	Min.95% coverage
Thermal shock	$\Delta R/R \leq \pm (0.5\% + 0.1\Omega)$
Temperature cycling	$\Delta R/R \leq \pm (0.5\% + 0.1\Omega)$
Load life in humidity	$\Delta R/R \leq \pm (3\% + 0.1\Omega)$
Load life	$\Delta R/R \leq \pm (3\% + 0.1\Omega)$