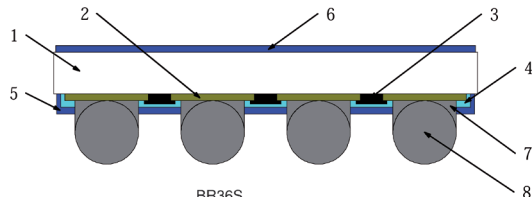
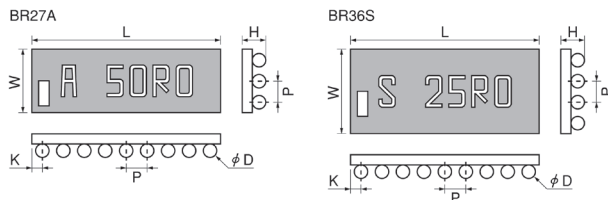


THICK FILM R-NETWORK BGA RESISTOR PACKAGE BR



STRUCTURE

- 1 Ceramic substrate
- 2 Thick film inner electrode
- 3 RuO₂ resistive film
- 4 1st protective coating (amorphous glass)
- 5 2nd protective coating (epoxy resin)
- 6 Marking
- 7 Pb-free solder (SnAgCu: 96.5;3;0.5)
- 8 Tinning ball (Cu core)



IDENTIFICATION

TYPE	BODY COLOR	MARKING
BR	Black	White, Alpha Numeric

All these products have Pb-free terminations and meet EU-RoHS requirements

TYPE DESIGNATION (HOW TO ORDER)

BR	27	A	P	T	TEB	1000	F
PRODUCT CODE	NUMBER OF TERMINALS 27 terminals 36 terminals	CIRCUIT SYMBOL A: Parallel network S: Separate resistors	TERMINAL PITCH P: 1mm	TERMINATION SURFACE MATERIAL T: Sn	TAPING* TEB, BK TEB: 4000 pcs/reel	NOMINAL RESISTANCE F: 4 digits	RESISTANCE TOLERANCE F: (±1%)

*Please see "PACKAGING"

Contact us when you have control request for environmental hazardous material other than the substance specified by EU-RoHS

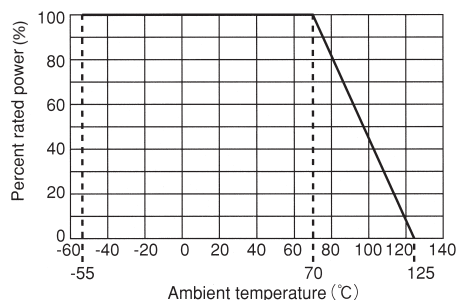
FEATURES

- This BGA packaging resistor network device virtually eliminates channel capacitance, a primary cause of reduced system performance
- This device eases routing design of DDR SDRAM termination
- Higher integration of resistor elements saves overall assembly costs
- BGA packaging is effective in saving of board space and high density mounting
- High precision ±1% resistance tolerance is standard
- Ideal for use as DDR SDRAM Terminator and in high speed digital circuits, etc.
- Meets or exceeds IEC 60115-1, JIS C 5201-1, MIL-STD-202F
- Rated ambient temperature: -70°C
- Operating temperature range: -55°C...+125°C
- **Customer specific circuit constructions on request**

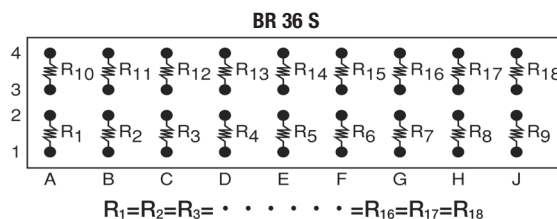
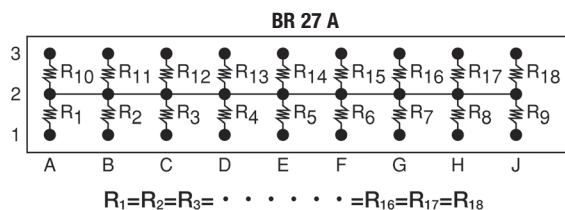
DIMENSIONS (mm)

TYPE	P ±0.25	øD ±0.05	K ±0.25	H ±0.15	L ±0.15	W ±0.15	COPLANARITY
BR 27 A	1.00	0.67	0.50	1.15	9.00	3.00	0.15 Max.
BR 36 S						4.00	

DERATING CURVE



CIRCUIT CONSTRUCTION



RATING

TYPE	NUMBER OF TERMINALS	CIRCUIT SYMBOL	T.C.R. (ppm/K)	POWER* RATING (per element)	MAX. WORKING VOLTAGE	MAX. OVERLOAD VOLTAGE	RESISTANCE RANGE (E24)
							F (±1%)
BR	27	A	± 200	0.05 W	25 V	50 V	10 Ω ... 1 kΩ**
	36	S					

Rated voltage = √Power rating x resistance value or max. working voltage, whichever is lower.

* For resistors operated in ambient temperature over +70°C, power rating shall be derated like shown in above "DERATING CURVE".

** Values from E-96 series and custom values on request.