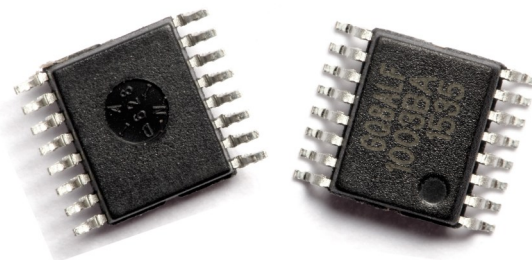


OBSOLETE

Features:

- Precision ratio tolerances to $\pm 0.05\%$
- Tracking TCR to $\pm 5\text{ppm}/^\circ\text{C}$
- Reliable, no internal cavity
- Standard JEDEC 16, 20 & 24 pin packages
- Ultra-stable TaN resistors on ceramic substrate
- Lower crosstalk than silicon substrate types

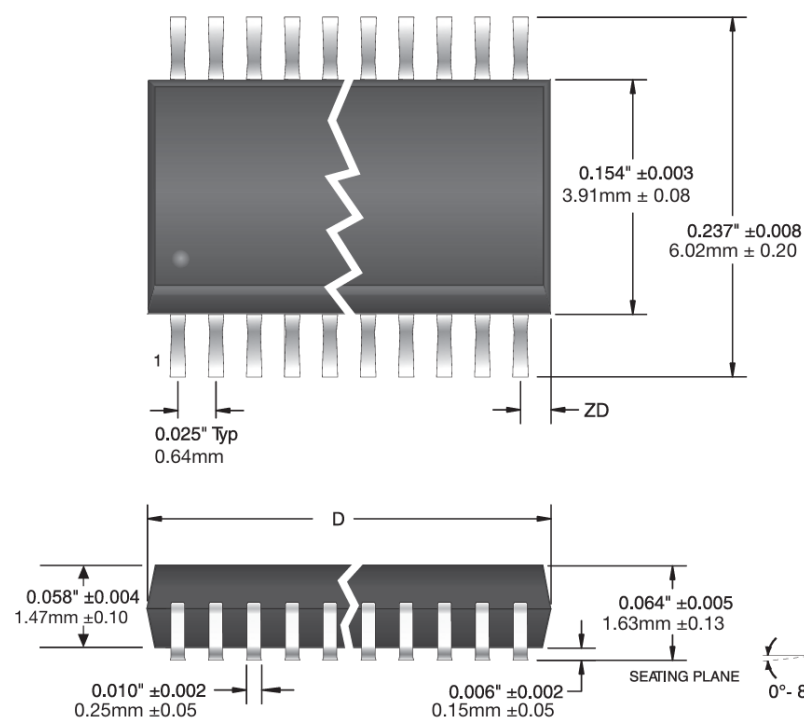


All parts are Pb-free and comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

Electrical Data

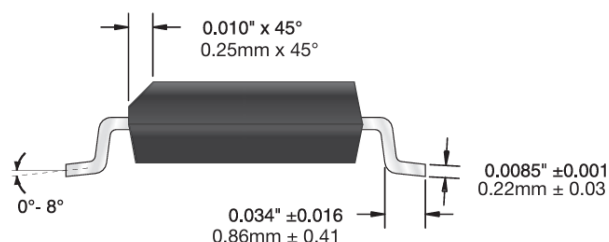
| | | GQ8 | GQ0 | GQC |
|----------------------------------------------|--------|-----------------------------------|------|-----|
| Number of pins | | 16 | 20 | 24 |
| Element resistance range | ohms | 100R – 150K | | |
| Absolute tolerance | % | 0.1, 0.25, 0.5, 1, 2, 5 | | |
| Ratio tolerance to R1 | % | 0.05, 0.1, 0.25, 0.5, 1, 2 | | |
| Absolute TCR | ppm/°C | 25, 50, 100 | | |
| Tracking TCR | ppm/°C | to 5 | | |
| Element power rating @70°C | mW | Isolated (A): 100, Bussed (B): 50 | | |
| Package power rating @70°C | mW | 750 | 1000 | |
| Rated operating voltage not to exceed V(PxR) | V | 100 | | |
| Operating temperature | °C | -55 to 125 | | |
| Noise | dB | <-25 | | |

Physical Data



| Style | Pins | D | ZD |
|-------|------|----------------------------------------|-----------------------------------------|
| GQ8 | 16 | 0.193" ± 0.004 4.9mm ± 0.1 | 0.009" ± 0.001 0.23mm ± 0.03 |
| GQ0 | 20 | 0.341" ± 0.004 8.66mm ± 0.1 | 0.058" ± 0.002 1.47mm ± 0.05 |
| GQC | 24 | | 0.033" ± 0.001 0.84mm ± 0.03 |

Note: All dimensions exclude mold flash and end flash which shall not exceed 0.006" (0.15mm) per side. Drawing proportions not to scale. Lead coplanarity 0.004" (0.1mm) max.



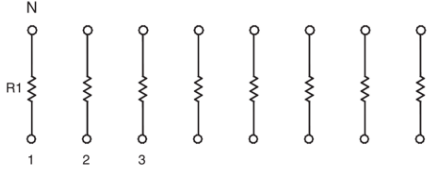
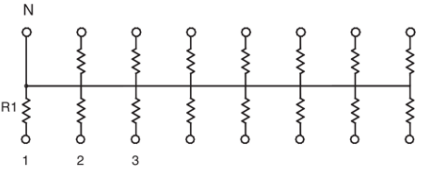
Marking

The product is marked with style, schematic code, TCR code, value and tolerance code.

General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

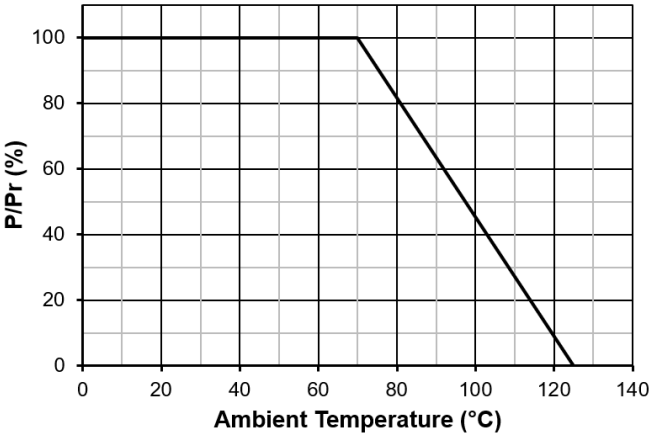
Schematic Data

| Isolated (A) | | | Bussed (B) | |
|-----------------------------------------------------------------------------------|--------------------|--------------------|------------------------------------------------------------------------------------|--------------------|
|  | | |  | |
| Style | Number of Pins (N) | Number of Elements | Number of Pins (N) | Number of Elements |
| GQ8 | 16 | 8 | 16 | 15 |
| GQ0 | 20 | 10 | 20 | 19 |
| GQC | 24 | 12 | 24 | 23 |

Performance Data

| Test per MIL-PRF-83401 | $\pm\Delta R/R\%$ | |
|---------------------------|-------------------|---------|
| | Typical | Maximum |
| Thermal shock | 0.02 | 0.1 |
| Power conditioning | 0.03 | 0.1 |
| High temperature exposure | 0.03 | 0.05 |
| Short-time overload | 0.02 | 0.05 |
| Low temperature storage | 0.03 | 0.05 |
| Life | 0.05 | 0.1 |

Temperature Derating



Ordering Procedure

Example: GQ8ALF021002BATHR (16-pin QSOP, isolated elements, Pb-free, 50ppm/°C, 10 kilohms, absolute tolerance ±0.1%, ratio tolerance ±0.05%, tube packed, variant HR)

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| G | Q | 8 | A | L | F | 0 | 2 | 1 | 0 | 0 | 2 | B | A | T | H | R | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | | | | | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-------|--------------|--------------------------|-----------------|-----------------------------------------------------------|--------------------|-----------------|----------|-------------------------------------------------------------|
| Style | Schematic | Termination | Absolute TCR | Value | Absolute Tolerance | Ratio Tolerance | Packing | Variant |
| GQ8 | A = Isolated | LF = Pb-free (100%Sn) | 03 = ±25ppm/°C | 3 digits + multiplier R = ohms for values <100 ohms | B = ±0.1% | A = ±0.05% | T = Tube | Omit for standard |
| GQ0 | B = Bussed | | 02 = ±50ppm/°C | | C = ±0.25% | B = ±0.1% | R = Reel | HR = High reliability screened (50 cycles thermal shock) |
| GQC | | | 01 = ±100ppm/°C | | D = ±0.5% | C = ±0.25% | | |
| | | | | | F = ±1% | D = ±0.5% | | |
| | | | | | G = ±2% | F = ±1% | | |
| | | | | | J = ±5% | G = ±2% | | |