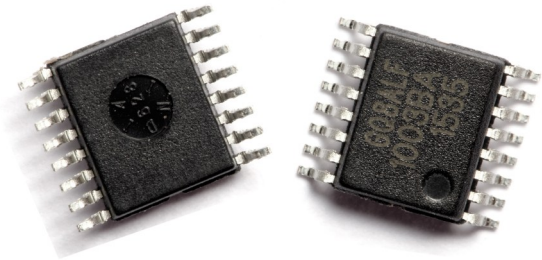


QSOP-C Series

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

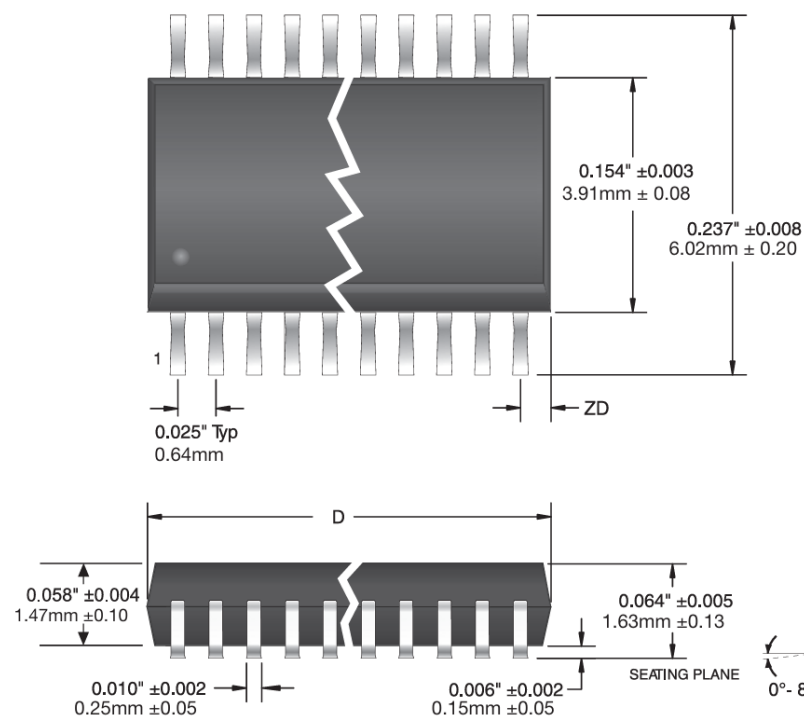


All parts are Pb-free and comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

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/ $^\circ\text{C}$	25, 50, 100		
Tracking TCR	ppm/ $^\circ\text{C}$	to 5		
Element power rating @70 $^\circ\text{C}$	mW	Isolated (A): 100, Bussed (B): 50		
Package power rating @70 $^\circ\text{C}$	mW	750	1000	
Rated operating voltage not to exceed V(PxR)	V	100		
Operating temperature	$^\circ\text{C}$	-55 to 125		
Noise	dB	<-25		

Physical Data



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

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.

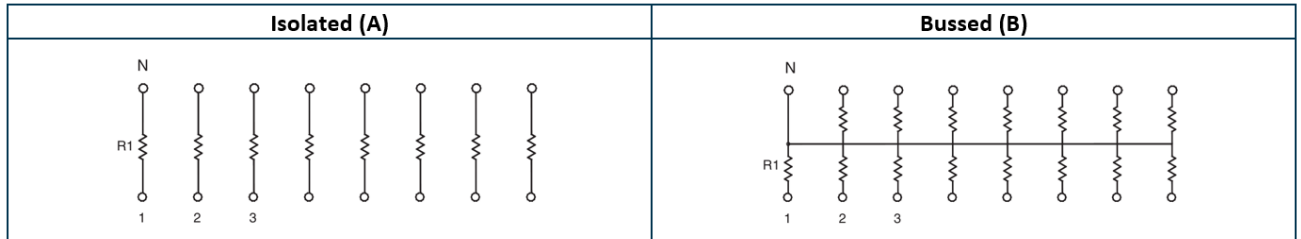
Marking

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

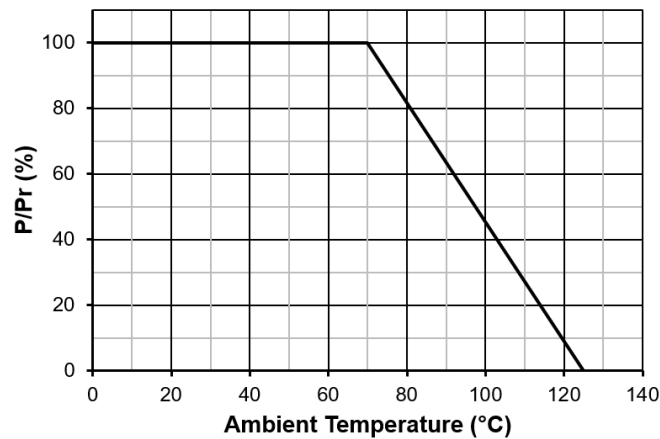


Style	Number of Pins (N)	Number of Elements	Number of Pins (N)	Number of Elements
GQ8	16	8	16	15
GQ0	20	10	20	19
GQC	24	12	24	23

Performance Data

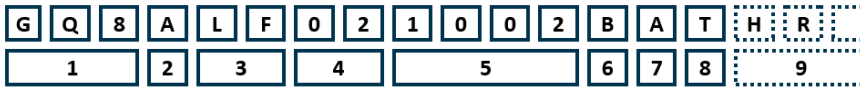
Test per MIL-PRF-83401	$\pm\Delta R/R\%$	
	Typical	Maximum
Thermal shock	0.02	0.1
Power conditioning	0.03	0.1
High temperature exposure	0.03	0.05
Short-time overload	0.02	0.05
Low temperature storage	0.03	0.05
Life	0.05	0.1

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)



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%			