

Thick Film Resistor Networks, Dual-In-Line, Wide Body, Small Outline, Molded DIP, Surface Mount



FEATURES

- Isolated, bussed and dual terminator schematics available
- 0.110" (2.79 mm) maximum seated height
- Rugged, molded case construction
- 0.050" (1.27 mm) lead spacing
- Reduces total assembly costs
- Compatible with automatic surface mounting equipment
- Uniform performance characteristics
- Meets EIA PDP 100, SOGN-0003 outline dimensions
- Available in tube pack or tape and reel pack
- Compliant to RoHS directive 2002/95/EC



RoHS* COMPLIANT

| STANDARD ELECTRICAL SPECIFICATIONS | | | | | | | |
|------------------------------------|-----------|------------------------------------|------------------------------------|----------------------|-----------------------|--|-------------------------------------|
| GLOBAL MODEL | SCHEMATIC | POWER RATING | | TOLERANCE (1) ± % | RESISTANCE RANGE Ω | MAXIMUM WORKING VOLTAGE (2) V _{DC} | TEMPERATURE COEFFICIENT ± ppm/°C |
| | | ELEMENT P _{70 °C} W | PACKAGE P _{70 °C} W | | | | |
| SOGC16 | 01 | 0.1 | 1.6 | 1, 2, 5 | 10 to 1M | 50 | 100 |
| | 03 | 0.19 | 1.6 | 1, 2, 5 | 10 to 1M | 50 | 100 |
| | 05 | 0.1 | 1.6 | 2, 5 | 10 to 1M | 50 | 100 |
| SOGC20 | 01 | 0.1 | 2.0 | 1, 2, 5 | 10 to 1M | 50 | 100 |
| | 03 | 0.19 | 2.0 | 1, 2, 5 | 10 to 1M | 50 | 100 |
| | 05 | 0.1 | 2.0 | 2, 5 | 10 to 1M | 50 | 100 |

Notes

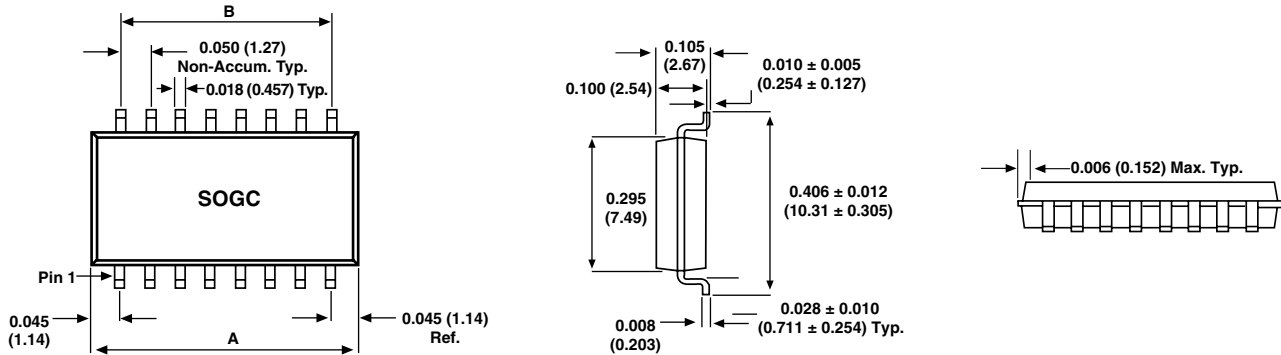
- 100 mΩ maximum on 0 Ω-jumper.
- (1) ± 2 % standard, ± 1 % and ± 5 % available.
- (2) Continuous working voltage shall be $\sqrt{P \times R}$ or maximum working voltage, whichever is less.

| GLOBAL PART NUMBER INFORMATION | | | | | | | | | | | | | | | | | |
|--|-----------|--|--|---|--|---|---|---|---|---|---|---|---|---|--|--|--|
| New Global Part Numbering: SOGC200310K0GDC (preferred part number format) | | | | | | | | | | | | | | | | | |
| S | O | G | C | 2 | 0 | 0 | 3 | 1 | 0 | K | 0 | G | D | C | | | |
| GLOBAL MODEL | PIN COUNT | SCHEMATIC | RESISTANCE VALUE | TOLERANCE CODE | PACKAGING | SPECIAL | | | | | | | | | | | |
| SOGC | 16 20 | 01 = Bussed 03 = Isolated 00 = Special | R = Ω K = kΩ M = MΩ 10R0 = 10 Ω 680K = 680 kΩ 1M00 = 1.0 MΩ | F = ± 1 % G = ± 2 % S = Special Z = 0 Ω Jumper | EJ = Lead (Pb)-free, tube EA = Lead (Pb)-free, tape and reel DC = Tin/lead, tube RZ = Tin/lead, tape and reel | Blank = Standard (Dash number) (Up to 3 digits) From 1 to 999 as applicable | | | | | | | | | | | |
| Historical Part Number Example: SOGC2003103G (will continue to be accepted) | | | | | | | | | | | | | | | | | |
| SOGC | 20 | 03 | 103 | G | D02 | | | | | | | | | | | | |
| HISTORICAL MODEL | PIN COUNT | SCHEMATIC | RESISTANCE VALUE | TOLERANCE CODE | PACKAGING | | | | | | | | | | | | |
| New Global Part Numbering: SOGC1605131AGRZ (preferred part number format) | | | | | | | | | | | | | | | | | |
| S | O | G | C | 1 | 6 | 0 | 5 | 1 | 3 | 1 | A | G | R | Z | | | |
| GLOBAL MODEL | PIN COUNT | SCHEMATIC | RESISTANCE VALUE | TOLERANCE CODE | PACKAGING | SPECIAL | | | | | | | | | | | |
| SOGC | 16 20 | 05 = Dual terminator | 3 digit impedance code, followed by alpha modifier (see Impedance Codes table) | F = ± 1 % G = ± 2 % J = ± 5 % | EJ = Lead (Pb)-free, tube EA = Lead (Pb)-free, tape and reel DC = Tin/lead, tube RZ = Tin/lead, tape and reel | Blank = Standard (Dash number) (Up to 3 digits) From 1 to 999 as applicable | | | | | | | | | | | |
| Historical Part Number Example: SOGC1605221331G (will continue to be accepted) | | | | | | | | | | | | | | | | | |
| SOGC | 16 | 05 | 221 | 331 | G | R61 | | | | | | | | | | | |
| HISTORICAL MODEL | PIN COUNT | SCHEMATIC | RESISTANCE VALUE 1 | RESISTANCE VALUE 2 | TOLERANCE CODE | PACKAGING | | | | | | | | | | | |

* Pb containing terminations are not RoHS compliant, exemptions may apply



DIMENSIONS in inches (millimeters)



| GLOBAL MODEL | A | B |
|--------------|---------------|---------------|
| SOGC16 | 0.440 (11.18) | 0.350 (8.89) |
| SOGC20 | 0.540 (13.72) | 0.450 (11.43) |

| TECHNICAL SPECIFICATIONS | | | |
|--|-----------------|---------------|--------|
| PARAMETER | UNIT | SOGC16 | SOGC20 |
| Package power rating (max. at + 70 °C) | W | 1.6 | 2.0 |
| TCR tracking (- 55 °C to + 125 °C) | ppm/°C | ± 50 | |
| Voltage coefficient of resistance | ppm/V | < 50 typical | |
| Maximum operating voltage | V _{DC} | 50 | |
| Operating temperature range | °C | - 55 to + 125 | |
| Storage temperature range | °C | - 55 to + 150 | |

| MECHANICAL SPECIFICATIONS | |
|-----------------------------------|---|
| Marking | Model number, schematic number, value tolerance, pin 1 indicator, date code |
| Marking resistance to solvents | Permanency testing per MIL-STD-202, method 215 |
| Maximum solder reflow temperature | + 255 °C |
| Solderability | Per MIL-STD-202, method 208E |
| Terminals | Copper alloy. Solder dipped terminal |
| Body | Molded epoxy |

| IMPEDANCE CODES | | | | | |
|-----------------|--------------------|--------------------|------|--------------------|--------------------|
| CODE | R ₁ (Ω) | R ₂ (Ω) | CODE | R ₁ (Ω) | R ₂ (Ω) |
| 500B | 82 | 130 | 141A | 270 | 270 |
| 750B | 120 | 200 | 181A | 330 | 390 |
| 800C | 130 | 210 | 191A | 330 | 470 |
| 990A | 160 | 260 | 221B | 330 | 680 |
| 101C | 180 | 240 | 281B | 560 | 560 |
| 111C | 180 | 270 | 381B | 560 | 1.2K |
| 121B | 180 | 390 | 501C | 620 | 2.7K |
| 121C | 220 | 270 | 102A | 1.5K | 3.3K |
| 131A | 220 | 330 | 202B | 3K | 6.2K |

CIRCUIT APPLICATIONS

01 Schematic

15 or 19 resistors with one pin common

The SOGCxx01 circuit provides a choice of 15 or 19 nominally equal resistors, each connected between a common lead (16 or 20) and a discrete PC board pin. Commonly used in the following applications:

- MOS/ROM pull-up/pull-down
- Open collector pull-up
- “Wired OR” pull-up
- Power driven pull-up
- TTL input pull-down
- Digital pulse squaring
- TTL unused gate pull-up
- High speed parallels pull-up

03 Schematic

8 or 10 isolated resistors

The SOGCxx03 circuit provides a choice of 8 or 10 nominally equal resistors with each resistor isolated from all others and wired directly across. Commonly used in the following applications:

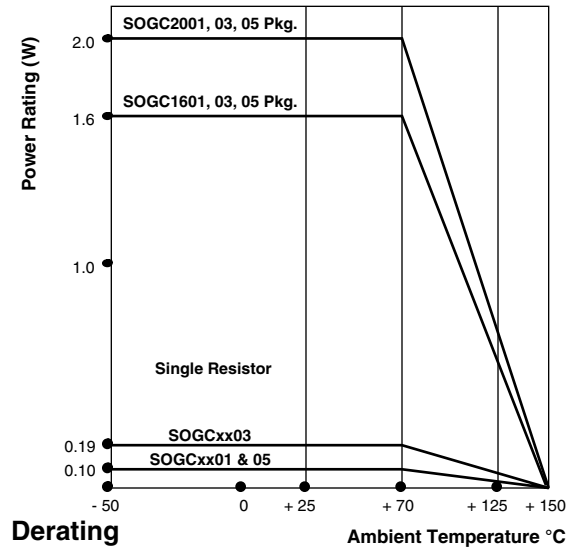
- “Wired OR” pull-up
- Power driven pull-up
- Powergate pull-up
- Line termination
- Long-line Impedance balancing
- LED current limiting
- ECL output pull-down
- TTL input pull-down

05 Schematic

TTL dual-line terminator; pulse squaring, 14 or 18 pairs of resistors
(R₁ resistors are common to leads 16 or 20)
(R₂ resistors are common to leads 8 or 10)

The SOGCxx05 circuit contains 14 or 18 pairs of resistors. Each pair is connected between ground and a common line. The junctions of these resistor pairs are connected to the input leads.

The 05 circuits are designed for TTL dual-line termination and pulse squaring.



| PERFORMANCE | |
|---------------------------------|---|
| TEST | MAX. ΔR (TYPICAL TEST LOTS) |
| Power conditioning | $\pm 0.50\% \Delta R$ |
| Thermal shock | $\pm 0.50\% \Delta R$ |
| Short time overload | $\pm 0.25\% \Delta R$ |
| Low temperature operation | $\pm 0.25\% \Delta R$ |
| Moisture resistance | $\pm 0.50\% \Delta R$ |
| Resistance to soldering heat | $\pm 0.25\% \Delta R$ |
| Shock | $\pm 0.25\% \Delta R$ |
| Vibration | $\pm 0.25\% \Delta R$ |
| Load life | $\pm 0.50\% \Delta R$ |
| Terminal strength | $\pm 0.25\% \Delta R$ |
| Insulation resistance | 10 000 M Ω (minimum) |
| Dielectric withstanding voltage | No evidence of arcing or damage (200 V _{RMS} for 1 min) |



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