# **FEATURES** Isolated, bussed and schematics available 14, 16, or 20 terminal package

PACKAGE P70 °C

Ŵ

1.05

1.125

1.05

 Molded case construction Thick film resistive elements

Ω

10 to 1M

- Reflow solderable
- Compatible with automatic surface mounting equipment

RESISTANCE MAXIMUM WORKING RANGE VOLTAGE <sup>(2)</sup>

- Reduces total assembly costs
- For wave flow soldering contact factory
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

VDC

50

50

50

50

50

50

50

50

50

dual

#### Note

GLOBAL MODEL

SOMC14

CIRCUIT

01

03

05

This datasheet provides information about parts that are RoHS-compliant and/or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

TOLERANCE (3)

± %

1, 2, 5

1, 2, 5

1, 2, 5

#### 01 0.08 1.20 1.2.5 SOMC16 03 0.16 1.28 1, 2, 5 1, 2, 5 05 0.08 1.20 01 0.08 1.52 1, 2, 5 SOMC20 03 0.16 1.60 1, 2, 5 05 0.08 1.52 1, 2, 5

POWER RATING | POWER RATING

#### Notes

DSCC has created series of drawings to support the need for a surface mount gull wing resistor network product. Vishay Dale is listed as a resource on this drawing as follows:

| DSCC<br>DRAWING<br>NUMBER | VISHAY DALE<br>MODEL                   | CIRCUIT                    | POWER<br>RATING<br>ELEMENT<br>P <sub>70 °C</sub><br>W | POWER<br>RATING<br>PACKAGE<br>P <sub>70 °C</sub><br>W | RESISTANCE<br>RANGE<br>Ω | TOLERANCE<br>± % | TEMPERATURE<br>COEFFICIENT<br>(0 °C to 70 °C)<br>± ppm/°C | MAXIMUM<br>WORKING<br>VOLTAGE <sup>(2)</sup><br>V <sub>DC</sub> |
|---------------------------|--|----------------------------|---|---|--------------------------|------------------|---|---|
| 87012                     | SOMC160116<br>SOMC160317<br>SOMC160548 | 01 (B)<br>03 (A)<br>05 (J) | 0.08<br>0.16<br>0.08                                  | 1.20  | 10 to 2.2M               | 1, 2, 5          | 100, 300  | 50  |
| 87013                     | SOMC14016<br>SOMC140313<br>SOMC140522  | 01 (B)<br>03 (A)<br>05 (J) | 0.08<br>0.16<br>0.08                                  | 1.00  | 10 to 2.2M               | 1, 2, 5          | 100, 300  | 50  |

These drawings can be viewed at: www.landandmaritime.dla.mil/Programs/MilSpec/ListDwgs.aspx?DocTYPE=DSCCdwg.

Power rating depends on the max. temperature at the solder point, the component placement density and the substrate material Jumper: 0  $\Omega$ -resistor on request (100 m $\Omega$ )

Packaging: According to EIA; see appropriate catalog or web page

(1) Temperature range: -55 °C to +125 °C

Continuous working voltage shall be  $\sqrt{P \times R}$  or maximum working voltage, whichever is less (2)

(3)  $\pm 2$  % standard,  $\pm 1$  % and  $\pm 5$  % available

| TECHNICAL SPECIFICATIONS                |                         |                    |            |            |  |  |
|---|-------------------------|--------------------|------------|------------|--|--|
| PARAMETER                               | UNIT                    | 01 CIRCUIT         | 03 CIRCUIT | 05 CIRCUIT |  |  |
| Rated dissipation at 70 °C per element  | W                       | 0.08               | 0.16       | 0.08       |  |  |
| Limiting element voltage <sup>(1)</sup> | V <sub>DC</sub>         | 50                 |            |            |  |  |
| Voltage coefficient                     | ppm/V                   | < 50               |            |            |  |  |
| Insulation voltage (1 min)              | V <sub>DC/AC</sub> peak | 200                |            |            |  |  |
| Category temperature range              | °C                      | -55 / +150         |            |            |  |  |
| Insulation resistance                   | Ω                       | > 10 <sup>10</sup> |            |            |  |  |
| TC tracking (-55 °C to +125 °C)         | ppm/°C                  | 50                 |            |            |  |  |

Note

<sup>(1)</sup> Rated voltage:  $\sqrt{P \times R}$ 

Vishay Dale

terminator

SOMC

### ilm Resistor Networks, Dual-In-Line, Medium Body, Thic Small Outline, Molded DIP, Surface Mount

| ck | Film | Resi | st |
|----|------|------|----|

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STANDARD ELECTRICAL SPECIFICATIONS

ELEMENT P70 °C

w

0.08

0.16

0.08



RoHS

TEMPERATURE COEFFICIENT <sup>(1)</sup>

± ppm/°C

100

100

100

100

100

100

100

100

100

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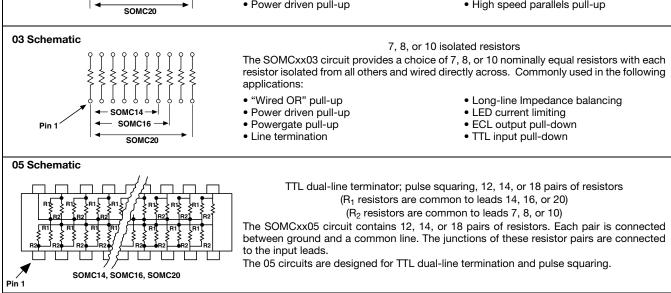
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| GLOBAL P  | GLOBAL PART NUMBER INFORMATION   |                                    |                                      |  |  |                    |                            |  |  |
|---|--|------------------------------------|--------------------------------------|--|--|--------------------|----------------------------|--|--|
| New Global Pa   | New Global Part Numbering: SOMC16011K00GDC (preferred part numbering format)   |                                    |                                      |  |  |                    |                            |  |  |
| S   | 0 М С  | 1                                  | 6 0 1                                | 1  | К  | 0                  | 0 G                        | D C  |  |
| GLOBAL<br>MODEL   | PIN COUNT  | SCHEMA                             | ATIC RESISTA                         | -  | TOLERAN<br>CODE  | -                  | PAC                        | KAGING   | SPECIAL  |
| SOMC  | 14<br>16<br>20   | 01 = bus<br>03 = isola<br>00 = spe | ated K = k                           | Ω<br>ΛΩ<br>10 Ω<br>i80 kΩ<br>.0 MΩ<br>0 Ω  | $F = \pm 1 G$ $G = \pm 2 G$ $J = \pm 5 G$ $S = \text{spec}$ $Z = 0 G$ jumper | %<br>%<br>ial<br>2 | EA = lead (Pb)<br>DC = tir | (Pb)-free, tube<br>-free, tape and reel<br>n / lead, tube<br>ad, tape and reel | Blank = standard<br>(dash number)<br>(up to 3 digits)<br>from <b>1 to 999</b> as<br>applicable |
| Historical Part   | Historical Part Number Example: SOMC1601102G (will continue to be accepted)    |                                    |                                      |  |  |                    |                            |  |  |
| SOMC     16       HISTORICAL<br>MODEL     PIN COUNT   |  |                                    | SCHEM                                | ATIC   | RESI   | 102<br>Stai        | -                          | G<br>DLERANCE<br>CODE  | D02  |
| New Global Pa   | art Numbering: \$  | SOMC200                            | 5500BGRZ (pref                       | erred p  | art numberi  | ng f               | ormat)                     |  |  |
| S   | о м с  | 2                                  | 0 0 5                                | 5  | 0  | 0                  | BG                         | R Z  |  |
| GLOBAL<br>MODEL   | PIN COUNT  | SCHEMA                             | ATIC RESISTA                         |  | TOLERAN  |                    | PAC                        | KAGING   | SPECIAL  |
| SOMC14<br>16<br>2005 =<br>dual terminator3 digit impedance<br>code, followed by<br>alpha modifier<br>(see Impedance<br>table) $F = \pm 1 \%$<br>$G = \pm 2 \%$<br>$J = \pm 5 \%$ $EJ = lead (Pb)$ -free, tub<br>$EA = lead $ |  |                                    | -free, tape and reel<br>/ lead, tube | Blank = standard<br>(dash number)<br>up to 3 digits<br>from <b>1 to 999</b> as<br>applicable |  |                    |                            |  |  |
| Historical Part   | Historical Part Number Example: SOMC2005820131G (will continue to be accepted) |                                    |                                      |  |  |                    |                            |  |  |
| SOMC  | 20   |                                    | 05                                   |  | 820  |                    | 131                        | G  | R61  |
| HISTORICAL<br>MODEL   | PIN COU  | NT                                 | SCHEMATIC                            | -  | STANCE<br>LUE 1  | F                  | RESISTANCE<br>VALUE 2      | TOLERANCE<br>CODE  | PACKAGING  |

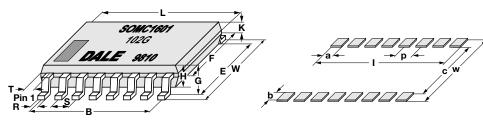
Note

• For additional information on packaging, refer to the Surface Mount Network Packaging document (www.vishay.com/doc?31540)

www.vishay.com Vishay Dale **CIRCUIT APPLICATIONS** 01 Schematic 13, 15, or 19 resistors with one pin common The SOMCxx01 circuit provides a choice of 13, 15, or 19 nominally equal resistors, each connected between a common lead (14, 16, or 20) and a discrete PC board pin. Commonly used in the following applications: Ş • MOS/ROM pull-up/pull-down • TTL input pull-down j • Open collector pull-up • Digital pulse squaring SOMC14 • "Wired OR" pull-up • TTL unused gate pull-up SOMC16 Pin • Power driven pull-up • High speed parallels pull-up SOMC20



## DIMENSIONS



| SOLDER PAI | SOLDER PAD DIMENSIONS in millimeters |      |      |      |      |      |  |  |
|------------|--------------------------------------|------|------|------|------|------|--|--|
|            | а                                    | b    | С    | I    | р    | w    |  |  |
| WAVE       | 0.64                                 | 1.91 | 5.34 | 9.53 | 1.27 | 9.15 |  |  |
| REFLOW     | 0.64                                 | 1.91 | 5.34 | 9.53 | 1.27 | 9.15 |  |  |

#### Notes

• The dimension shown are for a 16 pin part. For parts with different pin numbers use the same pitch and add or subtract pads as required

Maximum solder reflow temperature +255 °C

| DIMEN   | DIMENSIONS in millimeters |         |         |         |         |         |         |       |         |         |      |
|---------|---------------------------|---------|---------|---------|---------|---------|---------|-------|---------|---------|------|
| PIN NO# | L                         | W       | В       | E       | F       | G       | Н       | K     | R       | S       | Т    |
| 14      | 9.91                      | 7.62    | 7.62    | 6.20    | 5.59    | 2.16    | 2.03    | 0.914 | 0.457   | 1.27    | 1.14 |
| 16      | 11.18                     | 7.62    | 8.89    | 6.20    | 5.59    | 2.16    | 2.03    | 0.914 | 0.457   | 1.27    | 1.14 |
| 20      | 13.72                     | 7.62    | 11.43   | 6.20    | 5.59    | 2.16    | 2.03    | 0.914 | 0.457   | 1.27    | 1.14 |
| Tol.    | ± 0.254                   | ± 0.381 | ± 0.254 | ± 0.381 | ± 0.127 | ± 0.127 | ± 0.127 |       | ± 0.076 | ± 0.254 |      |

#### **MARKING INFORMATION**

1 % parts have 4 digits while 2 % and 5 % parts have 3 digits.

3

SOMC

SOMC



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| IMPEDANCE CODES |       |      |       |
|-----------------|-------|------|-------|
|                 | IMDED | ANCE | CODES |

| IMPEDANCE CODES |                           |                           |      |                           |                           |  |
|-----------------|---------------------------|---------------------------|------|---------------------------|---------------------------|--|
| CODE            | <b>R</b> <sub>1</sub> (Ω) | <b>R<sub>2</sub> (</b> Ω) | CODE | <b>R</b> <sub>1</sub> (Ω) | <b>R<sub>2</sub> (</b> 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                      |  |

Note

For additional impedance codes, refer to the Dual Terminator Impedance Code Table document (<u>www.vishay.com/doc?31530</u>)

| PERFORMANCE                  |                    |                                     |  |  |  |  |
|------------------------------|--------------------|-------------------------------------|--|--|--|--|
| TEST                         | CONDITIONS OF TEST | TEST RESULTS<br>(TYPICAL TEST LOTS) |  |  |  |  |
| Power conditioning           | MIL-STD-202        | ± 0.5 %                             |  |  |  |  |
| Load life at 70 °C           | MIL-STD-202        | ± 0.5 %                             |  |  |  |  |
| Short time overload          | MIL-STD-202        | ± 0.25 %                            |  |  |  |  |
| Thermal shock                | MIL-STD-202        | ± 0.5 %                             |  |  |  |  |
| Moisture resistance          | MIL-STD-202        | ± 0.5 %                             |  |  |  |  |
| Resistance to soldering heat | MIL-STD-202        | ± 0.25 %                            |  |  |  |  |
| Low temperature operation    | MIL-STD-202        | ± 0.25 %                            |  |  |  |  |
| Vibration                    | MIL-STD-202        | ± 0.25 %                            |  |  |  |  |
| Shock                        | MIL-STD-202        | ± 0.25 %                            |  |  |  |  |
| Terminal strength            | MIL-STD-202        | ± 0.25 %                            |  |  |  |  |

| 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  |  |  |  |  |



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