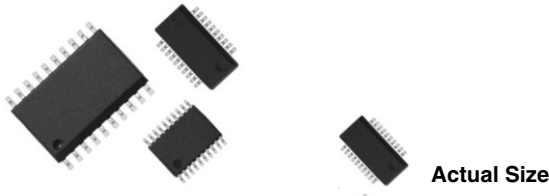




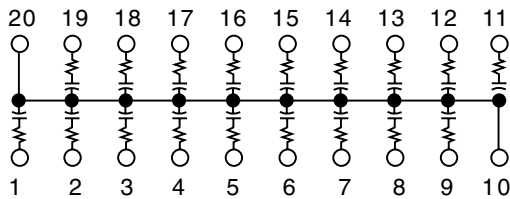
25 or 50 Mil Pitch, Termination Resistor/Capacitor Networks



Small Outline, Surface Mount, EMI/RFI Reduction, Terminator Networks

Vishay Thin Film's termination RC network Schematic AC, can support 18 data lines reducing overall cost. Impedance matching of transmission lines is easily done using VTF thin film integrated RC networks. Our product is designed with all components integrated within a single die. It is then packaged in JEDEC standard plastic packages. The use of surface mount technology offers improved design capability through reduced parasitic inductance and capacitance. Available packages SOIC, SSOP and TSSOP.

SCHEMATIC AC



FEATURES

- Lead (Pb)-free standard
- Resistors and capacitors on a single chip
- Saves board space
- Reduces total assembly costs
- Uniform performance characteristics
- Compatible with automatic surface mounting equipment
- UL 94V-0 flame resistant
- Rugged, molded case construction



RoHS COMPLIANT

TYPICAL PERFORMANCE

| | TCR | TOLERANCE |
|-----------|-----|-----------|
| RESISTOR | 200 | 10 % |
| | TCC | TOLERANCE |
| CAPACITOR | 200 | 20 % |

| MODELS | | | STANDARD VALUES | |
|--------|-------|-------|-----------------|--------|
| VSORC | VSSRC | VTSRC | R (Ω) | C (pF) |
| X | | | 50 | 220 |
| | X | | 50 | 250 |
| | X | | 75 | 56 |
| X | | | 100 | 100 |

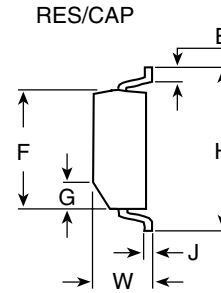
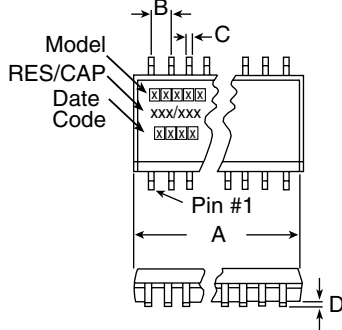
| STANDARD ELECTRICAL SPECIFICATIONS | | | |
|------------------------------------|----------|---|---|
| TEST | | SPECIFICATIONS | CONDITIONS |
| Material | | Tantalum Nitride on Silicon | |
| Resistance Range | | 10 Ω to 750 Ω | |
| TCR: | Tracking | ± 10 ppm/°C | |
| | Absolute | ± 200 ppm/°C | 0 °C to + 70 °C |
| Tolerance: | Absolute | ± 10 % Standard (R) | |
| | Absolute | ± 20 % Standard (C) | at 1 MHz and V _{RMS} over + 10 °C to + 70 °C |
| Power Rating: | Package | 1 W - (T)SSOP. 1.2 W - SOIC | See Derating Curve |
| Capacitance Range | | 10 pF to 150 pF - TSSOP/10 pF to 250 pF - SOIC and SSOP | |
| Stability: | ΔR Ratio | ± 2 % | 1000 h |
| ESD Protection | | > 2 kV | MIL-STD-883, Method 3015 |
| Breakdown Voltage | | 35 - 50 V | |
| Operating Temperature Range | | 0 °C to + 70 °C | |
| Storage Temperature Range | | - 55 °C to + 125 °C | |
| Power Rating/Resistor | | 100 mW | |

VTSRC, VSSRC, VSORC-AC



Vishay Thin Film 25 or 50 Mil Pitch, Termination Resistor/Capacitor Networks

DIMENSIONS AND IMPRINTING in inches and millimeters



| MODEL | VTSRC20-AC | | VSSRC20-AC | | VSORC20-AC | |
|----------|---------------|-------------|---------------|-------------|---------------|-------------|
| | INCHES | MILLIMETERS | INCHES | MILLIMETERS | INCHES | MILLIMETERS |
| A | 0.256 ± 0.003 | 6.5 ± 0.08 | 0.344 Max. | 8.74 Max. | 0.500 ± 0.010 | 12.7 ± 0.25 |
| B (Ref.) | 0.025 | 0.65 | 0.025 | 0.64 | 0.050 | 1.27 |
| C (Ref.) | 0.0087 | 0.22 | 0.010 | 0.25 | 0.016 | 0.41 |
| D | 0.004 | 0.10 | 0.006 | 0.15 | 0.008 | 0.20 |
| E (Typ.) | 0.024 | 0.61 | 0.025 | 0.64 | 0.030 | 0.76 |
| F | 0.173 ± 0.003 | 4.39 ± 0.08 | 0.154 ± 0.003 | 3.9 | 0.293 ± 0.003 | 7.44 |
| G | 0.015 × 45° | 0.38 | 0.015 × 45° | 0.38 | 0.025 × 45° | 0.64 |
| H | 0.252 ± 0.005 | 6.4 ± 0.13 | 0.236 ± 0.008 | 6.0 ± 0.20 | 0.406 ± 0.005 | 10.31 |
| J (Ref.) | 0.005 | 0.13 | 0.010 | 0.25 | 0.010 | 0.25 |
| W | 0.043 ± 0.005 | 1.09 ± 0.13 | 0.064 ± 0.005 | 1.6 | 0.100 ± 0.005 | 2.59 |

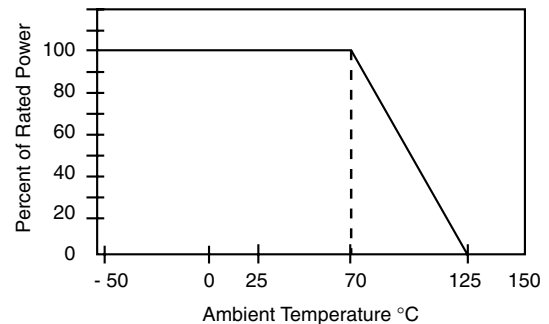
IMPRINTING

| VSORC, VSSRC, VTSRC | 20 | AC | XXX / XXX | |
|---------------------|-----------|-------------------|--|---|
| MODEL | PIN COUNT | SCHEMATIC | RESISTANCE Code: e.g. 100 = 10 Ω | CAPACITANCE Code: e.g. 101 = 100 pF |
| | | XXXX Date Code | * Optional marking | |

MECHANICAL SPECIFICATIONS

| | |
|--------------------------------|--|
| Resistive Element | Tantalum Nitride |
| Substrate Material | Silicon |
| Body | Molded Epoxy |
| Terminals | Copper Alloy |
| Plating | 100 % Sn Matte |
| Lead Coplanarity | 0.0005 Inches |
| Marking Resistance to Solvents | Permanency testing per MIL-STD-202, Method 215 |

DERATING CURVE



PACKING INFORMATION

| MODEL | LEADS | TAPE AND REEL | TUBES |
|---------------|-------|---------------|-------|
| VTSRC (TSSOP) | 20 | 2500 | 74 |
| VSSRC (SSOP) | 20 | 2500 | 55 |
| VSORC (SOIC) | 20 | 1000 | 38 |



| GLOBAL PART NUMBER INFORMATION | | | | | | | | | | | | | | | | |
|---|---|-----------------|--------------------------------|-----------|---|------------|---|-----------|--|-----------|---|---|---|---|---|---|
| New Global Part Numbering: VSSRC20AC330470TF (preferred part number format) | | | | | | | | | | | | | | | | |
| V | S | S | R | C | 2 | 0 | A | C | 3 | 3 | 0 | 4 | 7 | 0 | T | F |
| GLOBAL MODEL | | | NUMBER OF LEADS/ SCHEMATICS | | RESISTANCE AND TOLERANCE/ CAPACITANCE AND TOLERANCE | | | | PACKAGING | | | | | | | |
| VSSRC VTSRC VSORC (Lead (Pb)-free) (e1) | | | 20AC | | xxxyyy First 2 digits are significant figures. Last digit specifies number of zeroes to follow. K = 10 % Capacitor Tol. fixed M = 20 % Resistance Tol. fixed | | | | UF = TUBED TAPE AND REEL TF = Full Reels | | | | | | | |
| Historical Part Number example: VSSRC20AC330K470MT/R (will continue to be accepted) | | | | | | | | | | | | | | | | |
| VSSRC | | 20 | | AC | | 330K | | 470M | | T/R | | | | | | |
| MODEL | | NUMBER OF LEADS | | SCHEMATIC | | RESISTANCE | | TOLERANCE | | PACKAGING | | | | | | |



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