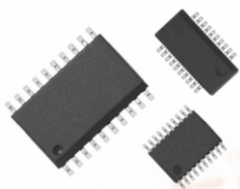




# VTSRC, VSSRC, VSORC-AC

Vishay Thin Film

## 25 or 50 Mil Pitch, Termination Resistor/Capacitor Networks



Actual Size

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.

### 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

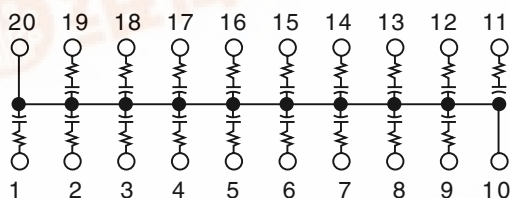


RoHS  
COMPLIANT

### TYPICAL PERFORMANCE

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

### SCHEMATIC AC



MODELS			STANDARD VALUES	
VSORC	VSSRC	VTSRC	R ( $\Omega$ )	C (pF)
X			50	220
	X		50	250
	X		75	56
X			100	100

### STANDARD ELECTRICAL SPECIFICATIONS

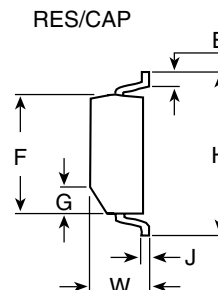
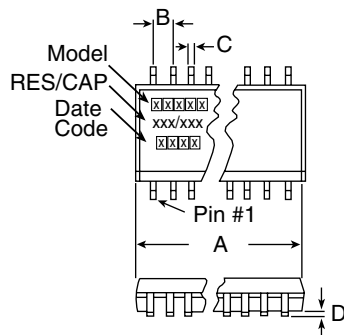
TEST	SPECIFICATIONS		CONDITIONS
Material	Tantalum Nitride on Silicon		
Resistance Range	10 $\Omega$ to 750 $\Omega$		
TCR:	Tracking	$\pm 10$ ppm/ $^{\circ}\text{C}$	0 $^{\circ}\text{C}$ to + 70 $^{\circ}\text{C}$
	Absolute	$\pm 200$ ppm/ $^{\circ}\text{C}$	
Tolerance:	Absolute	$\pm 10$ % Standard (R)	at 1 MHz and $V_{\text{RMS}}$ over + 10 $^{\circ}\text{C}$ to + 70 $^{\circ}\text{C}$
	Absolute	$\pm 20$ % Standard (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:	$\Delta R$ Ratio	$\pm 2$ %	1000 h
ESD Protection	> 2 kV		MIL-STD-883, Method 3015
Breakdown Voltage	35 - 50 V		
Operating Temperature Range	0 $^{\circ}\text{C}$ to + 70 $^{\circ}\text{C}$		
Storage Temperature Range	- 55 $^{\circ}\text{C}$ to + 125 $^{\circ}\text{C}$		
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

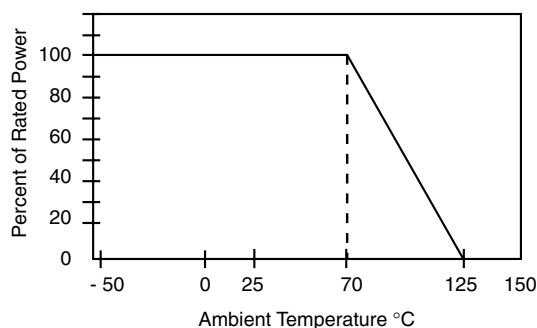
## IMPRINTING

VSORC, VSSRC, VT SRC	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
VT SRC (TSSOP)	20	2500	74
VSSRC (SSOP)	20	2500	55
VSORC (SOIC)	20	1000	38



## VTSRC, VSSRC, VSORC-AC

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

### 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

**VSSRC**  
**VTSRC**  
**VSORC**  
(Lead (Pb)-free)  
(e1)

NUMBER OF LEADS/  
SCHEMATICS

**20AC**

RESISTANCE AND TOLERANCE/  
CAPACITANCE AND TOLERANCE

**xxxxyy**

First 2 digits are significant figures.  
Last digit specifies number of  
zeroes to follow.

K = 10 % Capacitor Tol. fixed  
M = 20 % Resistance Tol. fixed

PACKAGING

**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



### Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.