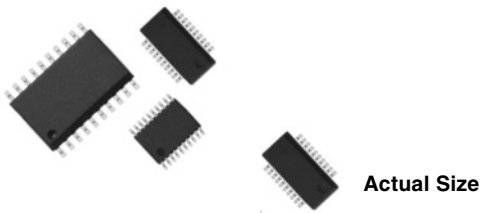


## 25 or 50 Mil Pitch, T-Filter Resistor/Capacitor Networks

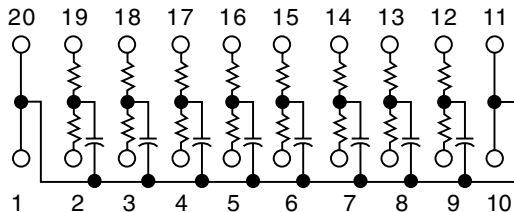


Small Outline, Surface Mount, EMI/RFI Reduction

Vishay Thin Film's T filter network is an integrated thin film network on a single die. Noise suppression is at a maximum with the use of thin film technology. The T filter network, schematic AA is designed to suppress EMI/RFI noise with such applications as I/O ports of personal computers and peripherals, workstations and Local Area Networks. With a rugged molded case to protect the circuit from the environment and an integrated thin film network this product is your choice when reduced size, improved accuracy and surface mount capability are your goals.

Available packages SOIC, SSOP and TSSOP.

### SCHEMATIC AA



### FEATURES

- Lead (Pb)-free available
- Resistors and capacitors on a single chip
- Saves board space
- Reduces total assembly costs
- Uniform performance characteristics
- UL 94V-0 flame resistant
- Rugged, molded case construction
- VTSRC - JEDEC mo-153AC  
VSSRC - JEDEC mo-137AD  
VSORC - JEDEC ms-013AC



### TYPICAL PERFORMANCE

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

VSORC	MODELS		STANDARD VALUES	
	VSSRC	VTSRC	R (Ohms)	C (pF)
	X		10	100
	X		25	200
X			100	390

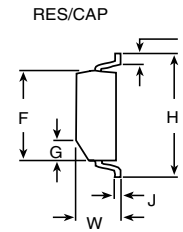
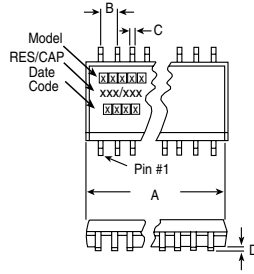
### STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITION	
MATERIAL	TANTALUM NITRIDE ON SILICON		
Resistance Range	10 Ohms to 750 Ohms		
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 & V <sub>RMS</sub> 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 hrs.
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		

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



**DIMENSIONS AND IMPRINTING** in inches and millimeters



MODEL	VTSRC20-AA		VSSRC20-AA		VSORC20-AA	
	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

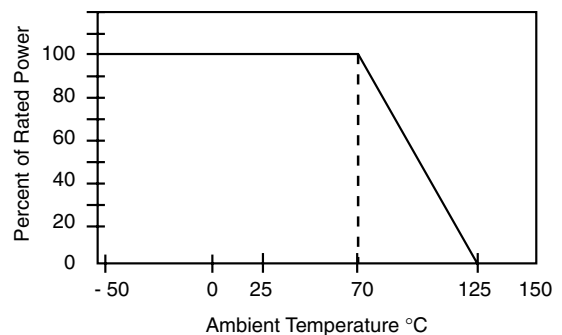
**IMPRINTING**

VSORC, VSSRC, VTSRC	20	AA	XXX / XXX	
MODEL	PIN COUNT	SCHEMATIC	RESISTANCE Code: e.g. 100 = 10 ohm	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	Tin Lead
Lead Coplanarity	0.0005 Inches
Marking Resistance to Solvents	Permanency testing per MIL-STD-202, Method 215
Lead (Pb)-free Option	100 % Sn Matte
Lead (Pb)-free Finish	Plated

**DERATING CURVE**



RC NETWORKS

**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: VTSRC20AA330470T1 (preferred part number format)

V T S R C 2 0 A A 3 3 0 4 7 0 T 1

GLOBAL MODEL	NUMBER OF LEADS/ SCHEMATICS	RESISTANCE & TOLERANCE/ CAPACITANCE & TOLERANCE	PACKAGING
VTSRC VSSRC VSORC	20AA	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	UF = TUBED  TAPE AND REEL T0 = 100 Min 100 Mult T1 = 1000 Min 1000 Mult T3 = 300 Min 300 Mult T5 = 500 Min 500 Mult TF = Full Reel 2500 TS = 100 Min 1 Mult

Historical Part Number example: VTSRC20AA330K470MT/R (will continue to be accepted)

VTSRC	20	AA	330K	470M	T/R
MODEL	NUMBER OF LEADS	SCHEMATIC	RESISTANCE	TOLERANCE	PACKAGING



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