VTSRC, VSSRC, VSORC-AB

Vishay Thin Film

25 or 50 Mil Pitch, Termination Resistor/Capacitor Networks

Actual Size

Small Outline, Surface Mount, EMI/RFI Reduction

If your design calls for the elimination of transmission line effects on high speed data lines Vishay Thin Film's integrated RC network, schematic AB is the answer. The planar design of our single die thin film networks offer low noise and predictable component behavior over a wide frequency range. Care must be taken when choosing matching networks that their frequency response matches that of the transmission line. Our product will reduce total assembly costs through surface mount technology, reduced component count and improved performance characteristics. 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

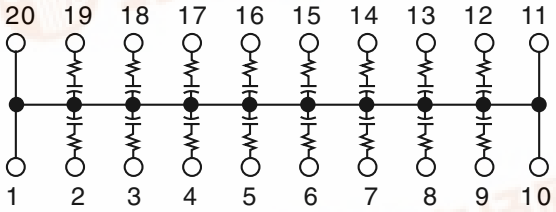
Pb-free

RoHS COMPLIANT

TYPICAL PERFORMANCE

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

SCHEMATIC AB



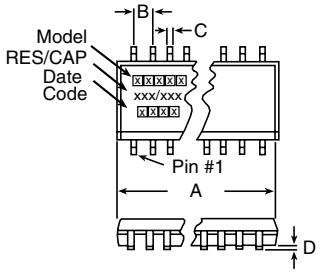
MODELS			STANDARD VALUES	
VSORC	VSSRC	VTSRC	R (Ω)	C (pF)
	X		47	33

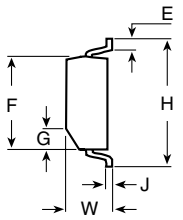
RC NETWORKS

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 at + 70 °C
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	

DIMENSIONS AND IMPRINTING in inches and millimeters





MODEL	VTSRC20-AB		VSSRC20-AB		VSORC20-AB	
	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

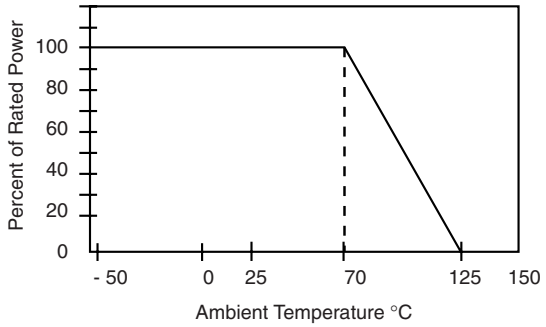
IMPRINTING

VSORC, VSSRC, VTSRC	20	AB	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: VSORC20AB330470TF (preferred part number format)

V	S	O	R	C	2	0	A	B	3	3	0	4	7	0	T	F

GLOBAL MODEL	NUMBER OF LEADS/ SCHEMATICS	RESISTANCE AND TOLERANCE/ CAPACITANCE AND TOLERANCE	PACKAGING
VSORC **VTSRC** **VSSRC**	**20AB**	**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: VSORC20AB330K470MT/R (will continue to be accepted)

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

RC NETWORKS

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