



## 25 mil or 50 mil Pitch, Termination Thin Film Surface Mount Resistor/Capacitor Network

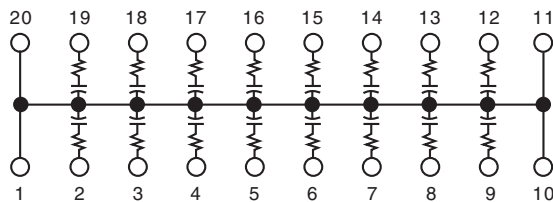


Small outline, surface mount, EMI/RFI reduction

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.

### SCHEMATIC AB



### FEATURES

- Resistors and capacitors on a single chip
- Saves board space
- Reduces total assembly costs
- Uniform performance characteristics
- Compatible with automatic surface mounting equipment
- UL 94 V-0 flame resistant
- Rugged, molded case construction
- Compliant to RoHS Directive 2002/95/EC



### TYPICAL PERFORMANCE

	TCR	TOL.
RESISTOR	200	10
	TCC	TOL.
CAPACITOR	200	20

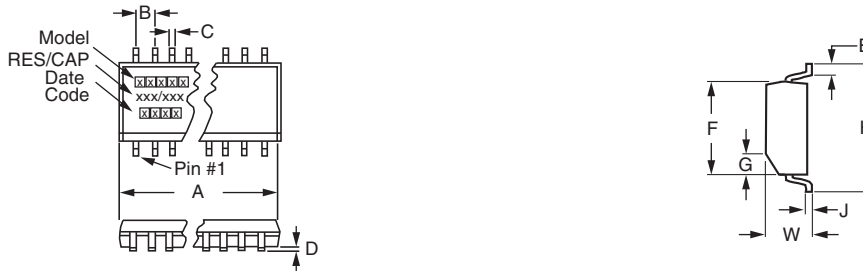
### STANDARD VALUES

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

STANDARD ELECTRICAL SPECIFICATIONS		
TEST	SPECIFICATIONS	CONDITIONS
Material	Tantalum nitride on silicon	-
Pin/Lead Number	20	-
Resistance Range	10 Ω to 750 Ω	-
TCR: Absolute	± 200 ppm/°C	0 °C to + 70 °C
TCR: Tracking	± 10 ppm/°C	-
Tolerance: Absolute	± 10 % standard (R), ± 20 % standard (C)	At 1 MHz and V <sub>RMS</sub> over + 10 °C to + 70 °C
Power Rating: Resistor	100 mW	-
Power Rating: Package	(T)SSOP: 1 W	See derating curve
	SOIC: 1.2 W	
Stability: Ratio	± 2 %	1000 h at + 70 °C
Operating Temperature Range	0 °C to + 70 °C	-
Storage Temperature Range	- 55 °C to + 125 °C	-
Capacitance Range	10 pF to 150 pF for TSSOP	-
	10 pF to 250 pF for SOIC/SSOP	
ESD Protection	> 2 kV	MIL-STD-883, method 3015
Breakdown Voltage	35 V to 50 V	-



**DIMENSIONS** in inches and millimeters



DIMENSION	JEDEC M0-153AC, VT SRC20-AB		JEDEC M0-137AD, VSSRC20-AB		JEDEC MS-013AC, 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 x 45°	0.38	0.015 x 45°	0.38	0.025 x 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

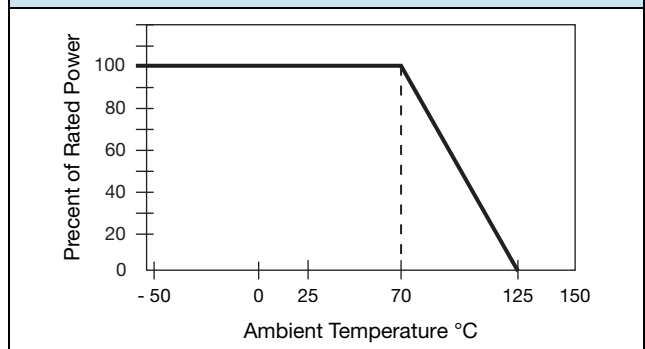
**IMPRINTING**

<b>VSORC, VSSRC, VT SRC</b>	<b>20</b>	<b>AB</b>	<b>XXX</b>	<b>/</b>	<b>XXX</b>
MODEL	PIN COUNT	SCHEMATIC	RESISTANCE Code: e.g. 100 = 10 W	/	CAPACITANCE Code: e.g. 101 = 100 pF
		XXXX			
		Date code			Optional marking

**MECHANICAL SPECIFICATIONS**

<b>Resistive Element</b>	Tantalum nitride
<b>Substrate Material</b>	Silicon
<b>Body</b>	Molded epoxy
<b>Terminals</b>	Copper alloy
<b>Plating</b>	100 % matte Sn
<b>Lead Coplanarity</b>	0.0005"
<b>Marking Resistance to Solvents</b>	Permanency testing per MIL-STD-202, method 215

**DERATING CURVE**



**PACKAGING INFORMATION**

MODEL	LEADS	TAPE AND REEL	TUBES
JEDEC M0-153AC, VT SRC (TSSOP)	20	2500	74
JEDEC M0-137AD, VSSRC (SSOP)	20	2500	55
JEDEC MS-013AC, VSORC (SOIC)	20	1000	38



GLOBAL PART NUMBER INFORMATION																
New Global Part Numbering: VSORC20AB330470TF																
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				xxxxyy First 2 digits are significant figures. Last digit specifies number of zeros to follow.  K = 10 % resistance tol. fixed M = 20 % capacitor tol. fixed				UF = TUBED  TAPE AND REEL TF = Full reels				
Historical Part Number Example: VSORC20AB330K470MT/R (for reference purposes only)																
VSORC		20		AB		330K		470M		T/R						
MODEL		NUMBER OF LEADS		SCHEMATIC		RESISTANCE		TOLERANCE		PACKAGING						



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