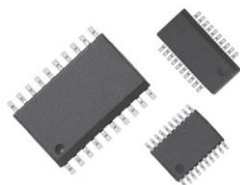




## 25 mil or 50 mil Pitch, Termination Thin Film Surface Mount Resistor/Capacitor Network

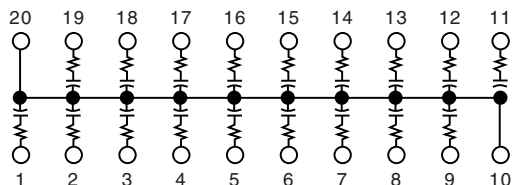


Actual Size

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.

### SCHEMATIC AC



### 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



**RoHS**  
COMPLIANT

### TYPICAL PERFORMANCE

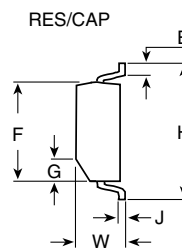
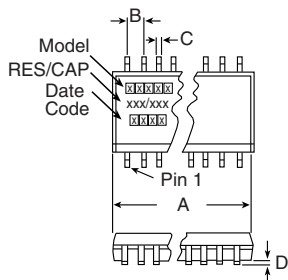
	TCR	TOLERANCE
<b>RESISTOR</b>	200	10
	TCC	TOLERANCE
<b>CAPACITOR</b>	200	20

### STANDARD VALUES

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

### STANDARD ELECTRICAL SPECIFICATIONS

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

**DIMENSIONS** in inches and millimeters

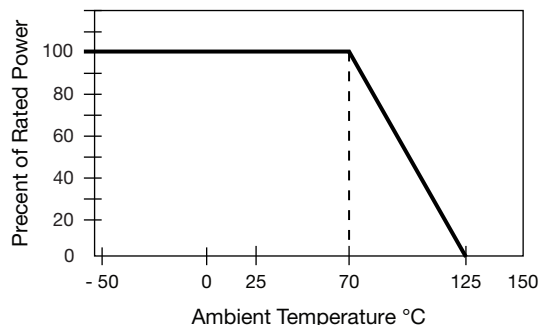
DIMENSION	JEDEC M0-153AC, VTSRC20-AC		JEDEC M0-137AD, VSSRC20-AC		JEDEC MS-013AC, VSORC20-AC	
	INCHES	MILLIMETERS	INCHES	MILLIMETERS	INCHES	MILLIMETERS
A	0.256 ± 0.003	6.5 ± 0.08	0.344 max.	8.74 max.	0.500 ± 0.010	12.7 ± 0.25
B (ref.)	0.025	0.65	0.025	0.64	0.050	1.27
C (ref.)	0.0087	0.22	0.010	0.25	0.016	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 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**

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 % matte Sn
Lead Coplanarity	0.0005"
Marking Resistance to Solvents	Permanency testing per MIL-STD-202, method 215

**DERATING CURVE****PACKING INFORMATION**

MODEL	LEADS	TAPE AND REEL	TUBES
JEDEC M0-153AC, VTSRC (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: VSSRC20AC330470TF

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

GLOBAL MODEL
VSSRC VTSRC VSORC

NUMBER OF LEADS/ SCHEMATICS
20AC

RESISTANCE AND TOLERANCE/ CAPACITANCE AND TOLERANCE
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

PACKAGING
UF = TUBED TAPE AND REEL TF = Full reels

Historical Part Number example: VSSRC20AC330K470MT/R (for reference purposes only)

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



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