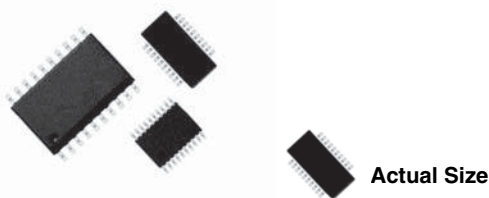




## 25 mil or 50 mil Pitch, T-Filter Thin Film Surface Mount Resistor/Capacitor Network



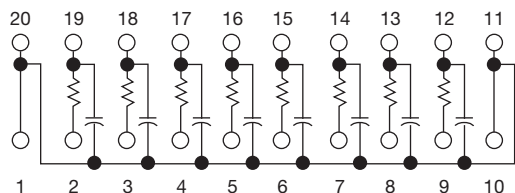
Actual Size

Small outline, surface mount, EMI/RFI reduction, T-filter networks

Vishay Thin Film's schematic AD is designed as an 8 channel filter for use with personal computer and peripheral 110 ports such as SCSI ports. The use of single die technology for filtering minimizes space and allows for more freedom in routing. 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 AD



### 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

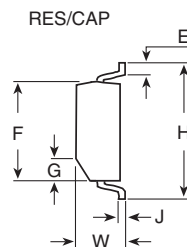
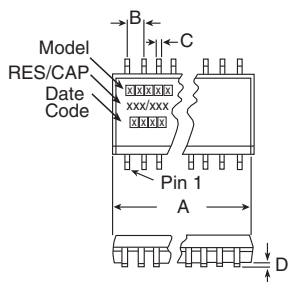
	TCR	TOLERANCE
<b>RESISTOR</b>	200	10
	TCC	TOLERANCE
<b>CAPACITOR</b>	200	20

### STANDARD VALUES

MODELS			R ( $\Omega$ )	C (pF)
VSORC	VSSRC	VTSRC		
	X		33	47

### 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

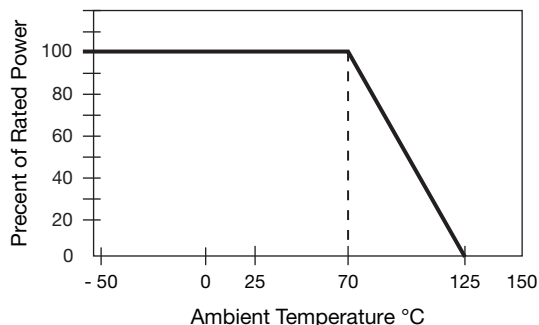
DIMENSION	JEDEC M0-153AC, VT SRC20-AD		JEDEC M0-137AD, VSSRC20-AD		JEDEC MS-013AC, VSORC20-AD	
	INCHES	MILLIMETERS	INCHES	MILLIMETERS	INCHES	MILLIMETERS
A	0.256 ± 0.003	6.5 ± 0.08	0.344 max.	8.74 max.	0.500 ± 0.010	12.7 ± 0.25
B (ref.)	0.025	0.65	0.025	0.64	0.050	1.27
C (ref.)	0.0087	0.22	0.010	0.25	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, VT SRC	20	AD	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, 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: VTSRC20AD330470TF

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

GLOBAL MODEL

VSSRC  
VTSRC  
VSORC

NUMBER OF LEADS/  
SCHEMATICS

20AD

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: VTSRC20AD330K470MT/R (for reference purposes only)

VTSRC

20

AD

330K

470M

T/R

MODEL

NUMBER  
OF LEADS

SCHEMATIC

RESISTANCE

TOLERANCE

PACKAGING



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