

## Single Value Chip Resistor



Thin film resistors are often an excellent solution for analog design problems where space is limited and high packing density is required. Due to their Tantalum Nitride resistive layer these resistors are stable 0.07 % (2000 h, rated power at + 70 °C) and moisture resistant.

### FEATURES

- Small size 20 mil square
- Resistance range 10  $\Omega$  to 1 M $\Omega$
- Resistor material: self-passivating Tantalum Nitride
- Silicon substrate for good power dissipation
- Low cost
- Wirebondable

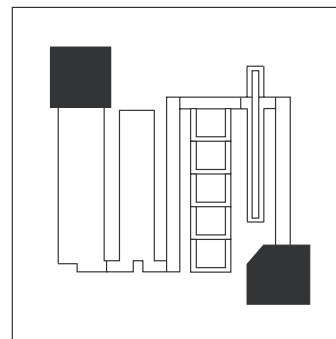
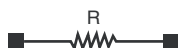


**RoHS**  
COMPLIANT  
**GREEN**  
[5-2008]\*

### TYPICAL PERFORMANCE

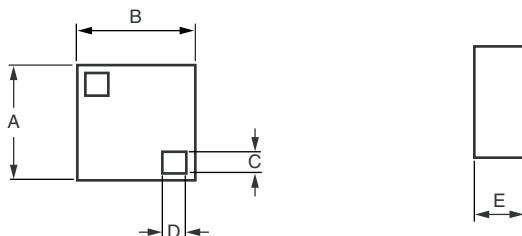
	ABS
TCR	100 ppm/°C
TOL.	0.5 %

### SCHEMATIC AND PATTERN



STANDARD ELECTRICAL SPECIFICATIONS		
TEST	SPECIFICATIONS	CONDITIONS
MATERIAL	TANTALUM NITRIDE	
Resistance range	10 $\Omega$ to 1 M $\Omega$	
Absolute TCR	$\pm 100$ ppm/°C ( $\pm 50$ ppm/°C on request)	- 55 °C to + 155 °C
Absolute tolerance	$\pm 0.5$ %, $\pm 1$ %, $\pm 2$ %	
Power dissipation	100 mW at 25 °C, 50 mW at + 70 °C, 25 mW at + 125 °C	
Stability	$\pm 0.07$ % typical, $\pm 0.1$ maximum	2000 h at + 70 °C at Pn
Voltage coefficient	< 0.1 ppm/V	
Working voltage	50 V <sub>DC</sub>	
Operating temperature range	- 55 °C to + 155 °C	
Storage temperature range	- 55 °C to + 155 °C	
Noise	< - 35 dB typical	MIL-STD-202 Method 308
Thermal EMF	< 0.01 $\mu$ V/°C	
Shelf life stability	100 ppm	1 year at + 25 °C

\* Please see document "Vishay Green and Halogen-Free Definitions (5-2008)" <http://www.vishay.com/doc?99902>

**DIMENSIONS**


DIMENSION	INCHES	MILLIMETERS
A	0.021 ± 0.002	0.55 ± 0.10
B	0.021 ± 0.002	0.55 ± 0.10
C	0.004	0.10
D	0.004	0.10
E	0.015	0.40 maximum

**MECHANICAL SPECIFICATIONS**

Resistive element	Tantalum Nitride
Passivation	Tantalum Pentoxide (Autopassivation)
Substrate material	Standard Silicon
Bonding pads	Aluminum

**GLOBAL PART NUMBER INFORMATION**

New Global Part Numbering: TA22-100KD0016 (preferred part number format)

T	A	2	2	-	1	0	0	K	D	0	0	1	6
GLOBAL MODEL				VALUE				TOLERANCE				OPTION	
				Decimal R, K or M				D = ± 0.5 % F = ± 1.0 % G = ± 2.0 %				leave blank if no option	

Historical Part Number example: TA22 10K 0.5 % R0016 (will continue to be accepted)

TA22	10K	0.5 %	R0016
HISTORICAL MODEL	VALUE	TOLERANCE	OPTION



### Disclaimer

All product specifications and data are subject to change without notice.

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