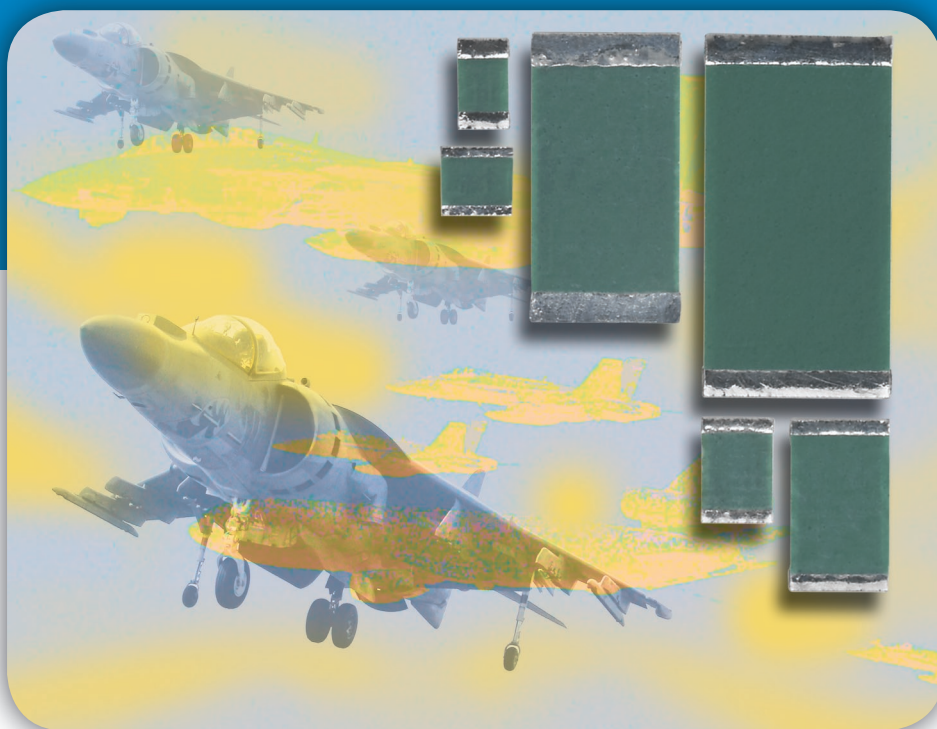




# RESISTIVE PRODUCTS – Model CHP, HCHP Hybrid



## High-Stability Resistor Chips with Thick Film Technology

### FEATURES

- Thick film resistive layer provides wide ohmic range of 0R1 up to 100 M $\Omega$
- Sputtered thin film terminations, with nickel barrier to withstand severe thermal constraints of > 1000 cycles
- 12 case sizes available

### APPLICATIONS

- Instrumentation
- Calibration
- Power supplies
- RF circuits
- D/A conversion



# CHP, HCHP Hybrid

## Vishay Sfernice

### High Stability Resistor Chips

### Thick Film Technology

#### FEATURES

- Robust terminations
- Large ohmic value range 0.1Ω to 100M
- Tight tolerance to 0.5%
- CHP: standard passivated version for industrial, professional and military applications
- HCHP: for high frequency applications
- CECC and ESA/SCC approvals in progress

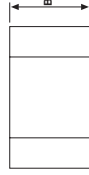
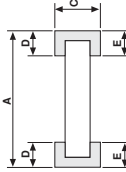
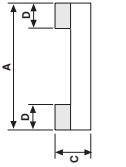


VISHAY SFERNICE thick film resistor chips are specially designed to meet very stringent specifications in terms of reliability, stability, homogeneity, reproducibility and quality. They conform to specifications NFC 83-240, CECC 40 401 and MIL-R-55342 D. CECC140 401 80 certification is in progress.

Sputtered Thin Film terminations, with nickel barrier, are very convenient for high temperature operating conditions. They can withstand thousands of very severe thermal shocks.

B (W/A) and F (one face) types are for solder reflow assembly. G (W/A) and W (one face) types are for wire bonding, gluing and even high temperature solder reflow.

#### DIMENSIONS in millimeters (inches)



#### ELECTRICAL SPECIFICATIONS

Resistance Range: 0.1R to 100M  
 Resistance Tolerance: 0.5% to 10%  
 Power Dissipation: Pn: 50mW to 2W  
 Temperature Coefficient: K: 100ppm/°C  
 L: 200ppm/°C  
 M: 300ppm/°C

#### MECHANICAL SPECIFICATIONS

Substrate: Alumina  
 Technology: Thick Film (Ruthenium oxide)  
 Protection: Epoxy Coating  
 Terminations: F (one face) and B (W/A) type: pre-tempered over nickel barrier for solder reflow  
 W (one face) and G (W/A) type: gold over nickel barrier for other applications

#### CLIMATIC SPECIFICATIONS

Operating Temp. Range: -55°C to +155°C

#### BEST TOL. AND TCR VERSUS OHMIC VALUE (1)

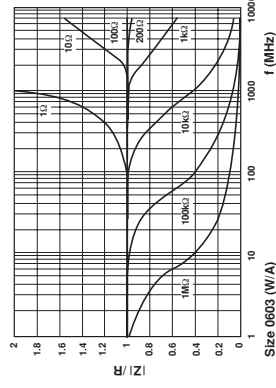
TIGHTEST TOLERANCE	OHMIC VALUES	BEST TCR ppm/°C
0.5% (D)	10Ω < R < 5M	100 (K)
1% (F)	10Ω < R < 10M	100 (K)
1% (F)	5Ω < R < 10M	200 (L)
2% (G)	1Ω < R < R max	200 (L)
5% (J)	0.5Ω < R < R max	200 (L)
10% (K)	0.1Ω < R < R max	300 (M)

(1) Improved performance on request.

#### CHIPS FOR HIGH FREQUENCY APPLICATIONS

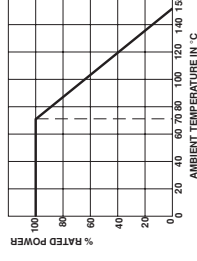
The HF performance of Flip Chip and W/A types can be improved on request. Please ask for HCHP or CHP with a dedicated release number (R.).

#### TYPICAL HF PERFORMANCE OF HCHP



Revision 29-Mar-04

#### POWER DERATING CURVE



#### PACKAGING

Wafer-pack or tape and reel when specified.

SIZE	WAFLE PACK: 2 X 2	NUMBER OF PIECES PER PACKAGE		TAPE WIDTH
		MIN.	MAX.	
0502				
0505	100			
0603			4000	8mm
1005				
1206	140			
1505		250		
2010	60			8mm*
2208	100		4000	8mm*
2512	60		1000	8mm*
	45			8mm*

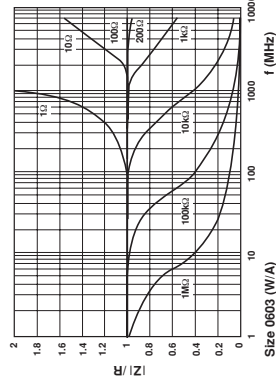
\*12mm on request

#### MARKING

(On request with premium, for size higher than 1206.) (4 digit code), the first three digits are significant figures and the last digit specifies the number of zero's to follow. R designates decimal point.

10R0 = 10Ω  
 3901 = 3900Ω  
 1004 = 1MΩ

#### TYPICAL HF PERFORMANCE OF HCHP



Size 0603 (Flip Chip)

(1) Shall be read in conjunction with others tables