HVF Series

High Voltage Flip Chip Film



RoHS Compliant

Ohmite's High Voltage Flip Chip Series incorporates high accuracy screen printing technology to achieve high voltage capability in a stable flip chip SMD chip resistor package. The HVF Series offers unmatched performance in comparison to standard chip resistors. Its unique design provides lower voltage and temperature coefficients, less noise, tighter tolerances, better stability, higher resistance values, and higher voltage ratings. HVF is available in convenient 1206 and 2512 footprints.

FEATURES

- High voltage up to 3,000 volts
- Industry standard sizes
- Working temperature range –55°C to 200°C
- Designed for automatic insertion
- Non-magnetic construction

SERIES SPECIFICATIONS

Series	Resistance Range	Tol.	Power Rating (mW)	Voltage Rating*
HVF1206	1K-100M	1% std.	300	1,500
	>100M-10G	5%		
	>10G-100G	10%		
HVF2512	1K-100G	1% std.	1000	3,000

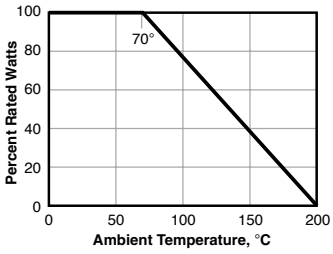
*Use Ohm's Law (V= √P*R) to calculate maximum working voltage.

**Maximum available quantity per reel is 3,500 for 1206 size and 2,000 for 2512 size; call 1-866-9-OHMITE for details.

CHARACTERISTICS

Resistance Range	1KΩ to 100GΩ
Resistance Tolerance	±1% std.; 5% for HVF1206 100MΩ-10GΩ more; 10% for 10GΩ+
Temperature Coefficient	±100ppm std.
Coating	Silicone
Solder Pad Material	Silver (PdAg) **Note:** HVF Series should not be used with tin-lead based solder compositions. Only silver-based solder compositions are recommended. Care should be taken in the selection of the solder flux contained in the solder paste. Some pastes are "corrosive" and can damage the coating and also the resistive layer during the soldering process at high temperature. PCBs must be properly cleaned to remove any layers of moisture containing halides below the resistor. We recommend Halide Free (or Halogen Free) solder pastes, containing for example ROL0 or similar. It is advisable for the PCB layout to provide a slot, or air gap, underneath the downward facing resistor element, thereby increasing insulation resistance and reducing the possibility of capacitive coupling to the PCB. Under no circumstances should any copper trace be present in the layout directly under the resistive element.

Derating



Voltage coefficient of Resistance

Series	Resistance Range	VCR (-ppm/V)*
1206	1K ..10MΩ	<3.20
	>10M ..100MΩ	<15.00
	>100M ..1GΩ	<29.00
	>1GΩ .. 5GΩ	<40.00
2512	1K ..30MΩ	<0.80
	>30M ..300MΩ	<4.00
	>300M ..3GΩ	<7.00
	>3GΩ .. 5GΩ	<10.00

*Typical values. Voltage coefficient of resistance strongly depends on the resistance value. Contact Ohmite for details.

HVF Series

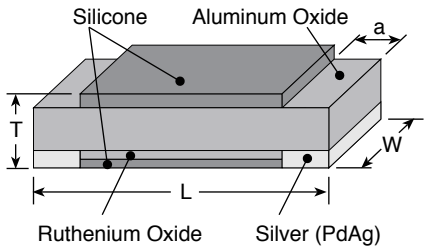
High Voltage
Flip Chip Film

PERFORMANCE DATA

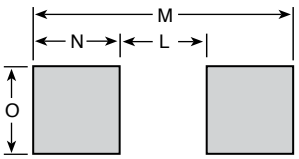
Insulation Resistance	>10,000 MΩ	500 Volt 25 °C 75% relative humidity
Dielectric Strength	>1,000 Volt	25 °C 75% relative humidity
Thermal Shock	Δ R/R < 0.1% typ., 0.50% max.	MIL Std. 202, method 107, Cond. C (IEC 68 -2 -14)
Overload	Δ R/R < 0.1% typ., 0.50% max.	1,5 x Pnom, 5 sec (do not exceed max. voltage)
Moisture Resistance	Δ R/R < 0.1% typ., 0.50% max.	MIL Std. 202, method 106 (IEC 68 -2 -3)
Load Life	Δ R/R < 0.1% typ., 0.50% max.	1000 hours at rated power (IEC 115 -1)

DIMENSIONS

(in. ±0.008)



Land pattern



Land pattern dimensions are for reference only

Series	L	W	a	T (max.)	M	N	O	L
HVF1206	0.128	0.063	0.018	0.028	0.150	0.040	0.080	0.070
HVF2512	0.252	0.126	0.026	0.032	0.288	0.062	0.140	0.164

ORDERING INFORMATION

RoHS Compliant

Taping Code: blank = bulk package, T = tape & reel

H V F 1 2 0 6 T 1 0 0 4 J E T

- **High Voltage Flip Chip Series**
- **Case Size**: 1206, 2512
- **TCR**: T = 100 ppm, V = 50 ppm*
- **Ohms**: First 3 digits are significant; last digit specifies number of zeros to follow. Example: 1006 = 100MΩ
- **Tolerance**: F = 1%, G = 2%, J = 5%, K = 10%

**Not available for all resistance values; consult factory*

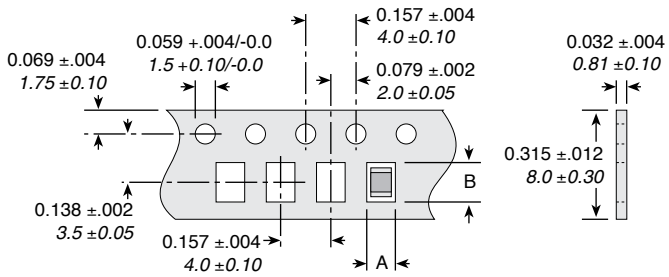
Standard part numbers

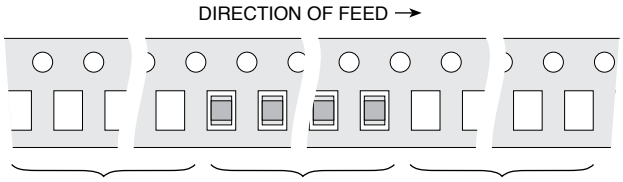
Ohms	HVF1206---	HVF2512---
25K	---T2502FE	---T2502FE
50K	---T5002FE	---T5002FE
75K	---T7502FE	---T7502FE
100K	---T1003FE	---T1003FE
250K	---T2503FE	---T2503FE
500K	---T5003FE	---T5003FE
1000K	---T1004FE	---T1004FE
1500K	---T1504FE	---T1504FE
2000K	---T2004FE	---T2004FE
2500K	---T2504FE	---T2504FE
5000K	---T5004FE	---T5004FE
7500K	---T7504FE	---T7504FE
1G	---T1007JE	---T1007FE
5G		---T5007FE
10G	---T1008JE	

TAPE AND REEL

Per EIA Std. RS-481

Tape



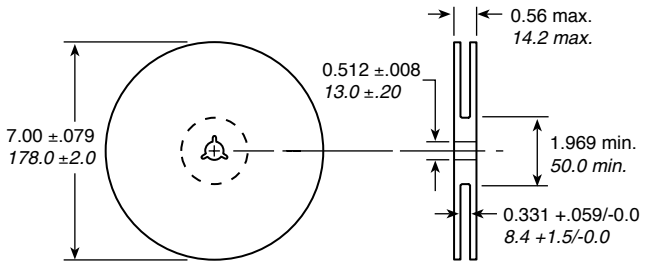


Trailer
230mm min.–560mm max. May consist of carrier and/or cover tape followed by a minimum of 160mm of carrier with sealed cover tape

Components

Leader
Minimum of 40 empty component pockets sealed with cover tape

Reel



Standard Qty/Reel is 1000; maximum available quantity per reel is 3,500 for 1206 size and 2,000 for 2512 size; call 1-866-9-OHMITE for details.