MSP

Vishay Sfernice

Precision Surface Mount Resistors
Wirewound or Metal Film Technologies

Specially designed for surface mounting, the MSP series uses either wirewound or metal fi lm technology.
The molded package ensures mechanical and climatic protection as well as high dielectric insulation.

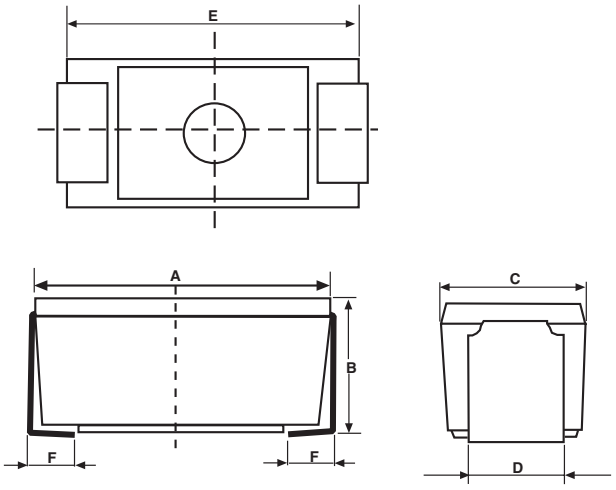
FEATURES

- Wide range of ohmic values
- Low temperature coeffi cient
- Good electrical insulation
- Good mechanical strength
- High power

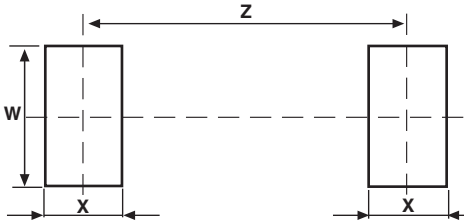
The MSP design is compatible with surface mounting equipment and can withstand wave and refl ow soldering techniques.

DIMENSIONS in millimeters

MSP



RECOMMENDED SOLDERING AREAS



TECHNICAL SPECIFICATIONS

RESISTIVE TECHNOLOGY		WIREWOUND			METAL FILM	
Vishay Sfernice Series		MSP 1B	MSP 2B	MSP 3B	MSP 1C	MSP 2C
Power Dissipation at + 25 °C		1 W	2 W	2.5 W	0.5 W	1 W
Ohmic Range In Relation to Tolerance	**± 5 %**	0.04 2.2K	0.04 4.7K	0.04 13K	-	-
	± 2 %	0.04 2.2K	0.04 4.7K	0.05 13K	-	-
	± 1 %	0.04 2.2K	0.04 4.7K	0.05 13K	10 332K	10 1M
	± 0.5 %	0.4 2.2K	0.4 4.7K	0.3 13K	10 332K	10 1M
	± 0.1 %	Consult VISHAY SFERNICE			10 332K	10 332K
Limiting Element Voltage		50V	120 V	200 V	300 V	350V
Critical Resistance		-	-	-	180K	122.5K
Average Weight (in g)		0.2	0.8	1.5	0.2	0.8

For technical questions, contact: sfer@vishay.com

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PERFORMANCE					
TESTS	**CONDITIONS Wirewound Metal Film**		**REQUIREMENTS Wirewound NF C 83-210 Metal Film NF C 83-230**		**TEST RESULTS**
Dielectric w/s Voltage	500 V RMS		± (0.1 % + 0.05)	± 0.25 %	± 0.05 %
Short Time Overload	5 Pr/5 s		± (0.25 % + 0.05)	± 0.25 %	± 0.15 %
Climatic Sequence	5 cycles - 55 °C + 200 °C - 55 °C + 125 °C		± (0.5 % + 0.05) Ins. resistance > 100M	± 0.5 % Ins. resistance > 100M	± 0.2 % Ins. resistance > 103M
Humidity (Steady State)	56 days 95 % RH	10 days low load	± (0.5 % + 0.05) Ins. resistance > 100M	± 1 % Ins. resistance > 100M	± 0.3 % Ins. resistance > 103M
Vibration	10/ 2000 Hz	10/ 500 Hz	± (0.25 % + 0.05)	± 0.25 %	± 0.05 %
Load Life	Pr + 25 °C 2000 h	1000 h Pr + 25 °C 90/30 cycle	± (0.5 % + 0.05) Ins. resistance 1G	± 1 %	± 0.5 %
Thermal Shock	260 °C 10 s		± (0.25 % + 0.05)	± 0.25 % + 0.05	± 0.2 %

MSP B - Wirewound Technology

TEMPERATURE COEFFICIENT IN THE TEMPERATURE RANGE - 55°C + 200°C		
OHMIC RANGE	**NF C 83-210 LIMITS**	**TYPICAL VALUE**
< 1	**± 100 ppm/°C**	**± 50 pm/°C**
1 to < 10	**± 50 ppm/°C**	
10	**± 25 ppm/°C**	**+ 0 to - 20 ppm/°C**

MSP C - Metal Film Technology

TEMPERATURE COEFFICIENT IN THE TEMPERATURE RANGE - 55 °C + 155 °C		
OHMIC RANGE	**MSP 1C**	**MSP 2C**
10 to 332K	K3: ± 50ppm/°C K4: ± 25ppm/°C	
> 332K	-	K3: ± 50 ppm/°C

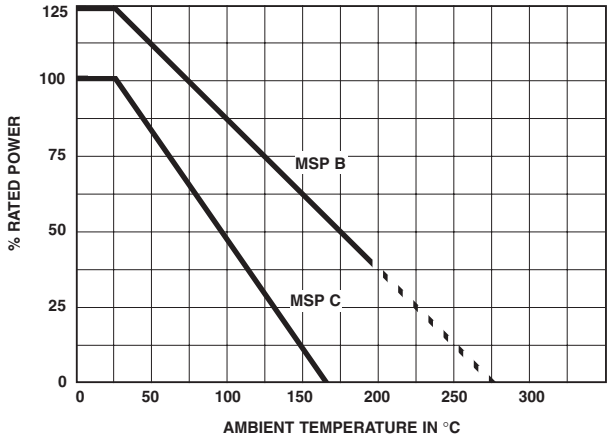
SURFACE MOUNTING

Soldering cycle: 2 minutes at 215 °C or 10 seconds at 260 °C or with an iron 40 W: 3 seconds at 350 °C.
Soldering is possible by wave, reflow and vapor phase.

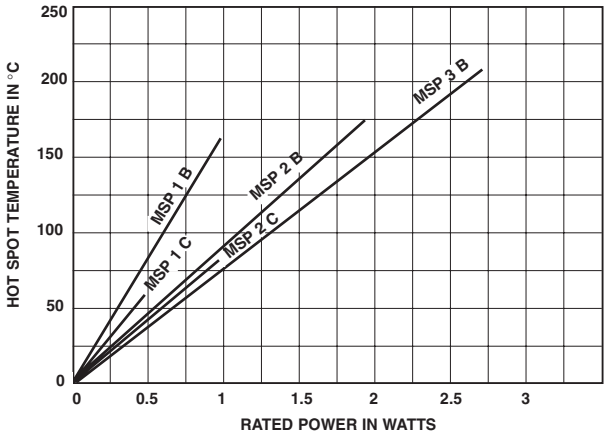
NON INDUCTIVE WINDING

Non inductive (Ayrton Perry) winding available.
Please consult VISHAY SFERNICE.

POWER RATING CHART



TEMPERATURE RISE



PACKAGING

In bulk (plastic bag of 10 units or multiples).
In tube : MSP1 70 units per tube
MSP2 50 units per tube
MSP3 40 units per tube
In reel of 500 units for MSP1 and MSP2.

MARKING

SFERNICE trademark, ohmic value (in), tolerance (in %), series and style, technology , manufacturing date.

ORDERING INFORMATION

MSP	1	B	NI	1.6K	± 1%	
SERIES	STYLE	TECHNOLOGY	NON INDUCTIVE	OHMIC VALUE	TOLERANCE	PACKAGING
		B: Wirewound C: Metal Film	WINDING Optional			Optional

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