

## Type SMV Series

### Key Features

Flameproof  
UL94V0  
molded  
package,  
resistant to  
sulfuration,  
heat and  
humidity.

Metal-glaze  
elements  
provide high  
stable  
performance  
against  
environmental  
conditions and  
overload.

High surge  
withstanding  
& pulse  
withstanding  
performance.

Excellent  
mechanical  
strength &  
electrical  
stability.



TE Connectivity is pleased to introduce our Metal Glaze high voltage power resistor, the sister to our SM series power resistor, giving UL94V0 flame resistance and resistance to sulfur along with high surge and pulse withstand capabilities

### Characteristics – Electrical

Characteristics	Standards	Test Methods
Resistance Tolerance	±5% (J) ±1% (F)	
Resistance Temp. Coeff	±200ppm / °C	-65°C ~ 200°C
Power Rating Load	Surface Temp. 275°C Max. $\Delta R/R \leq \pm 1\%$	Rated voltage for 30 minutes
Short Time Overload	$\Delta R \pm 1\%$	2.5 times of rated voltage for 5 sec.
Dielectric Withstanding Voltage	No evidence of mechanical damage or insulation breakdown	AC 1000V for 1min.
Insulation Resistance	10,000 MΩ	DC 500V megger
Pulse Loading Capability	$\Delta R/R \leq \pm 2\%$	IEC 60065 14.1
Solderability	Minimum 95% coverage	235°C±5°C for 2 seconds
Resistance to Soldering Heat	No evidence of mechanical damage. $\Delta R/R \leq \pm 1\%$	270 ±5°C for 10±1 seconds

### Environmental Characteristics

Characteristics	Standards	Test Methods
Temp. cycle	$\Delta R/R \leq \pm 2\%$	-65°C(30mins) → Room Temp.(3mins) → +275°C(30mins) → Room Temp.(3mins) / (5 cycles)
Load life	$\Delta R/R \leq \pm 5\%$	Rated power load 90 minutes ON 30 minutes OFF 70°C 1000 hours
Moisture-proof Load Life	$\Delta R/R \leq \pm 5\%$	Rated power load 90 minutes ON 30 minutes OFF 40°C 95% RH 1000 hours

Reference Standards: JIS C 5201

### Dimensions and Resistance Range:



Rated Power @20°C	A	B	C	D	E	F	Resistance Range(Ω)	Max. Working Voltage	
	±0.3 (mm)	±0.3 (mm)	±0.3 (mm)	±0.3 (mm)	max. (mm)	±0.3 (mm)		DC	RMS
1W	4.0	6.7	1.4	3.55	7.9	1.5	100K~10M	1600V	1150V
2W	5.5	10.5	1.7	5.0	12	2.3	100K~10M	3500V	2500V
3W	7.3	13.5	1.7	6.8	17	2.5	100K~10M	5000V	3500V

Rated Continuous Working Voltage (RCWV) shall be determined from

$RCWV = \sqrt{\text{Rated Power} \times \text{Resistance Value}}$  or Max. Permissible Voltage listed above

Whichever is lowest

### Derating Curve

For resistors operated in ambient temperatures above 20°C, power rating must be derated in accordance with the curve below



### Surface Temperature rise



### Lightning Surge

The resistors are designed to withstand 1.2/50  $\mu$ s pulse & 10/700  $\mu$ s according to IEC61000-4-5, 30 pulse per voltage, 30 seconds between each pulse. The resistance value change rate between pre- and post-test shall be within  $\pm 5\%$

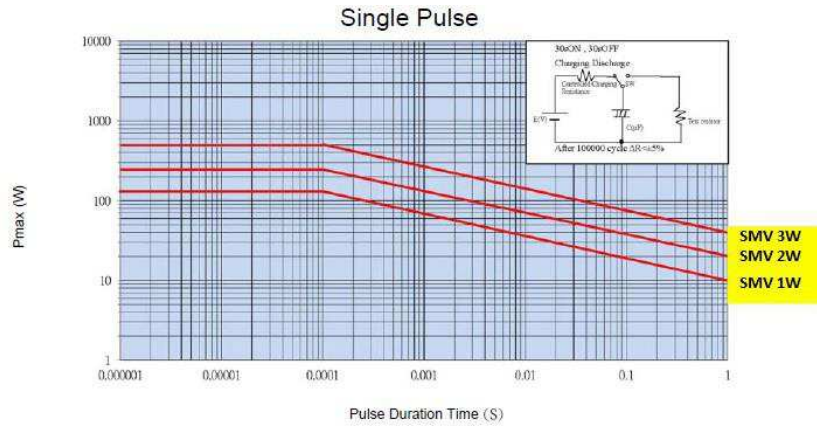
1.2/50  $\mu$ s Lightning Surge



10/700  $\mu$ s Lightning Surge

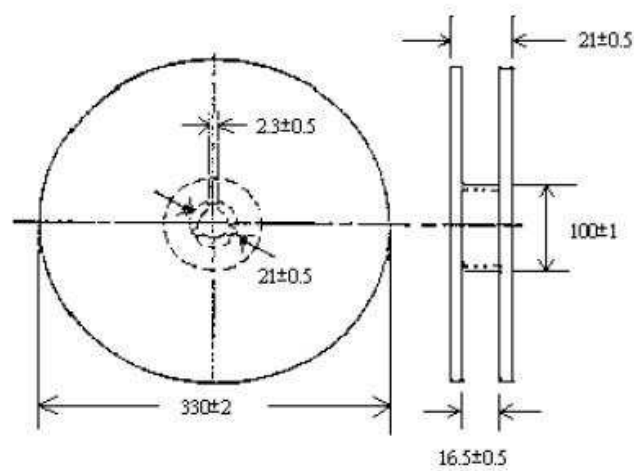


### Pulse Characteristics

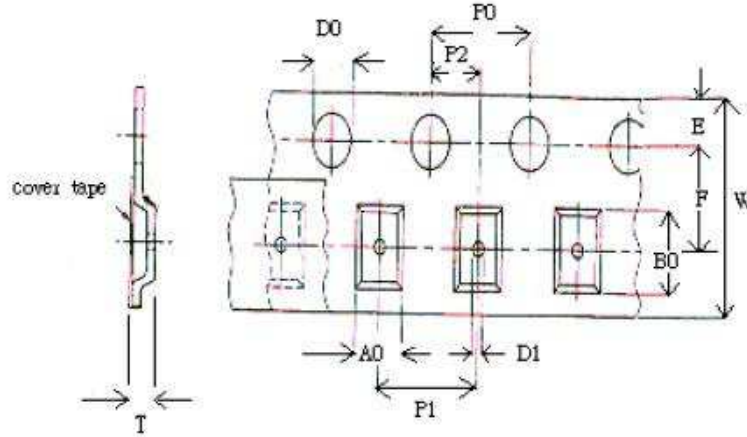


### Packaging

Reel Dimensions (mm)



Tape dimensions (mm)



PWR	B0 ±0.2	A0 ±0.2	P1 ±0.1	P2 ±0.1	P0 ±0.1	D0 ±0.1	E ±0.1	F ±0.1	W ±0.3	D1 ±0.1	T ±0.1	RL QTY
1W	8	4.3	8	2	4	1.5	1.75	7.5	16	1.5	4.15	2000
2W	11.8	5.8	12	2	4	1.5	1.75	11.5	24	1.5	5.8	1000
3W	17.5	7.8	16	2	4	1.5	1.75	14.2	32	1.5	7.5	500

How To Order

Common Part	Power rating	Resistance Value	Tolerance	Pack Style
SMV	1W 2W 3W	100 K ohms 100,000 ohm s100K  1 M ohm 1,000,000 ohms 1M0  10 M ohms 10,000,000 ohms 10M	F – 1% J – 5%	T – Tape & Reel