

[*Patents approval]

Taiwan patent number: M530462

Japan patent number: 3208923

China patent number: ZL201490001291.X

Korean patent number: 20-0486309

United States patent number: US9978483B2

Specifications Per

• IEC 60115-1, 60115-4

Features

- Flameproof multi-layer coating equivalent to UL 94 V-0
- Flameproof feature equivalent to overload test UL 1412
- Enhanced weld spot is reliable against surge
- Special tin-plated electrolytic copper lead wire
- Halogen free and RoHS/ REACH compliant

Applications

- Applied in high surge applications
- High rush current protection for power capacitor
- Motor start-up protection to absorb harmful surge, so to prevent hazard of circuit damage caused by surge

DIMENSIONS

Type	Body Length (L, mm)	Body Diameter (D, mm)	Lead Wire Length (H, mm)	Lead Wire Diameter (d, mm)
SWA01	11.0 ± 1.0	4.0 ± 0.5	28 ± 3.0	0.7 ± 0.03
SWA02	13.5 ± 1.0	5.0 ± 0.5	30 ± 3.0	0.8 ± 0.03
SWA03	15.5 ± 1.0	5.5 ± 0.5	30 ± 3.0	0.8 ± 0.03
SWA05	19.0 ± 1.0	6.0 ± 0.5	30 ± 3.0	0.8 ± 0.03
SWA06	24.0 ± 1.0	8.0 ± 0.5	35 ± 3.0	0.8 ± 0.03

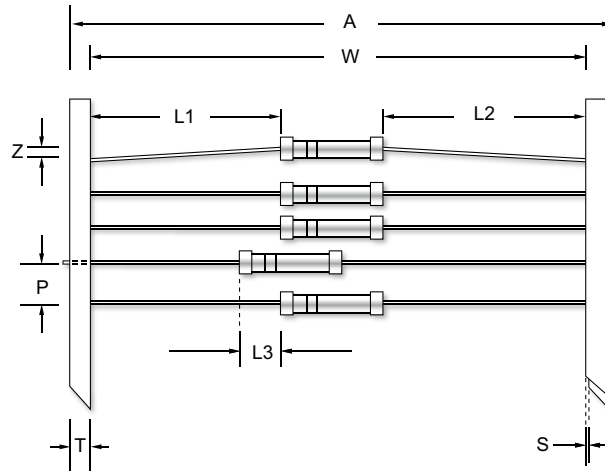
GENERAL SPECIFICATIONS

Type	Power Rating (at 70°C)	Maximum Working Voltage*	Maximum Overload Voltage**	Maximum Permissible Surge Voltage	Minimum Resistance	Maximum Resistance	Resistance Tolerance	Available Resistance Values
SWA01	1W	$\sqrt{P \times R}$	$2.5 \times \sqrt{P \times R}$	9KV	0.1 Ω	10Ω	± 5%	E-24
					11 Ω	1.2KΩ	± 1% ~ ± 5%	E-96/E-24
SWA02	2W	$\sqrt{P \times R}$	$2.5 \times \sqrt{P \times R}$	10KV	0.1 Ω	10Ω	± 5%	E-24
					11 Ω	1.2KΩ	± 1% ~ ± 5%	E-96/E-24
SWA03	3W	$\sqrt{P \times R}$	$2.5 \times \sqrt{P \times R}$	12KV	0.1 Ω	10Ω	± 5%	E-24
					11 Ω	1.2KΩ	± 1% ~ ± 5%	E-96/E-24
SWA05	5W	$\sqrt{P \times R}$	$2.5 \times \sqrt{P \times R}$	13KV	0.1 Ω	10Ω	± 5%	E-24
					11 Ω	1.2KΩ	± 1% ~ ± 5%	E-96/E-24
SWA06	6W	$\sqrt{P \times R}$	$2.5 \times \sqrt{P \times R}$	14KV	0.1 Ω	10Ω	± 5%	E-24
					11 Ω	1.2KΩ	± 1% ~ ± 5%	E-96/E-24

* Rated Continuous Maximum Working Voltage (RCVV) should be determined from $RCVV = \sqrt{\text{Power Rating} \times \text{Resistance Values}}$

** Short-time Overload (STOL) test should be determined from $STOL = 2.5 \times RCVV$

TAPING/PACKING SPECIFICATIONS



Unit (mm)

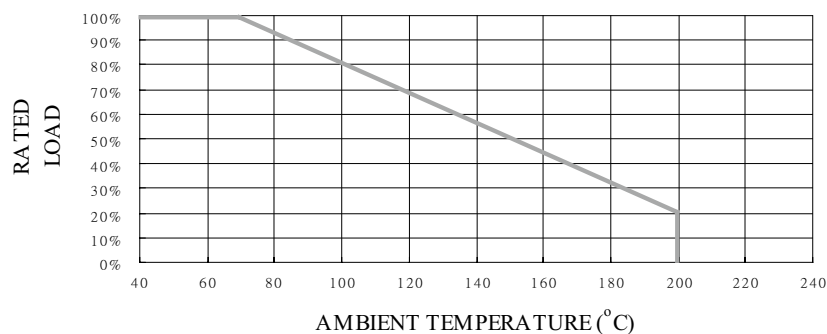
Type	A (Max.)	L1-L2 (Max.)	L3 (Max.)	P ±0.5	S (Max.)	T ±0.5	W ±1.5	Z (Max.)
SWA01	65	±1.0	0.5	5.0	0.8	6.0	52.5	1.2
SWA02	76	±1.5	1.0	10.0	0.8	6.0	63.5	1.2
SWA03	76	±1.5	1.0	10.0	0.8	6.0	63.5	1.2
SWA05	76	±1.5	1.0	10.0	0.8	6.0	63.5	1.2
SWA06	97	±1.5	1.0	10.0	0.8	6.0	83.0	1.2

TECHNICAL SPECIFICATIONS

Characteristics	Limits
Temperature Coefficient, PPM / °C	±100, ±200
Operating Temperature Range, °C	-55 ~ 200
Insulation Resistance, MΩ	10 ⁴

* Please contact us for special request on fusing characteristics.

POWER DERATING CURVE



■ PART NUMBER

Example: SWA01J100RTKZTB1K0

SWA01	J	100R	TKZ	TB1K0
Type	Tolerance	Resistance	TCR	Packaging
	J (5%)	100Ω 4-character code containing - 3 significant digits 1 letter multiplier <u>MULTIPLIER</u> R = 1 K = 10 ³ M = 10 ⁶ G = 10 ⁹	3-character code TKZ = Default Product Temperature Coefficient. Information of typical product temperature coefficient can be found in the Technical Summary section of the datasheet.*	5-character code TB = Tape Box (pieces per box) SWA01 1K0 = 1,000pcs SWA02 / SWA03 SWA05 500 = 500pcs SWA06 350 = 350pcs

* For the availabilities of non-default temperature coefficient, please check with us.

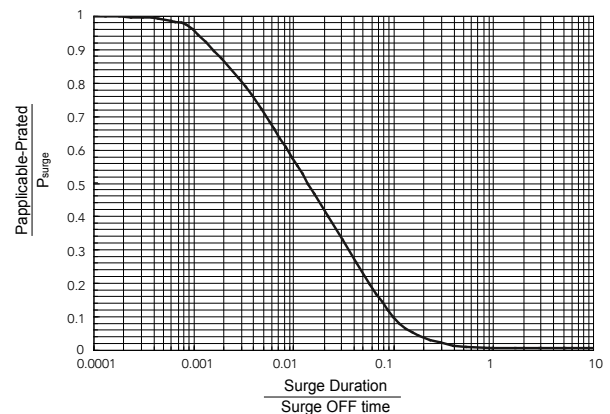
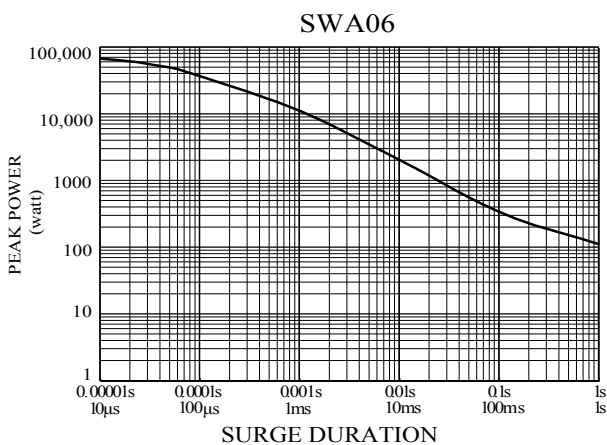
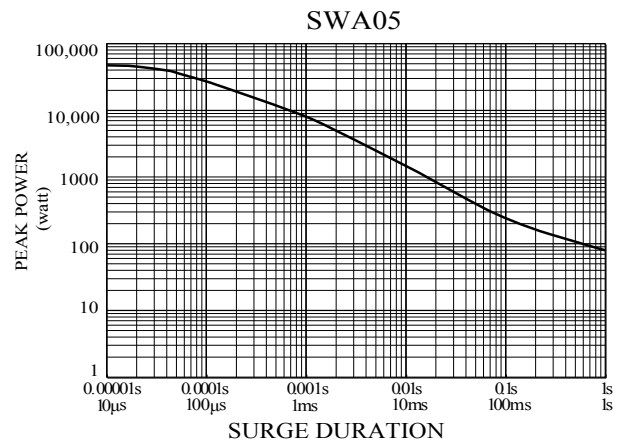
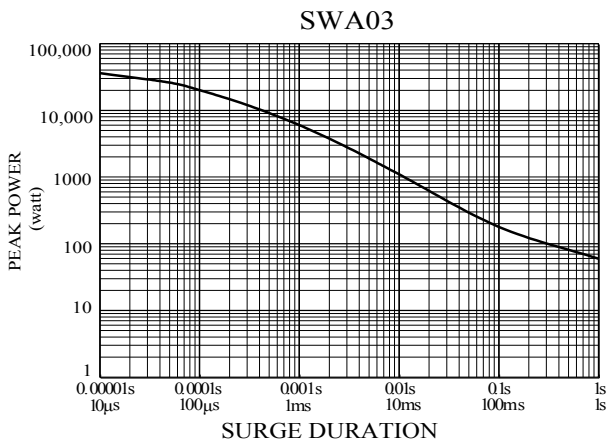
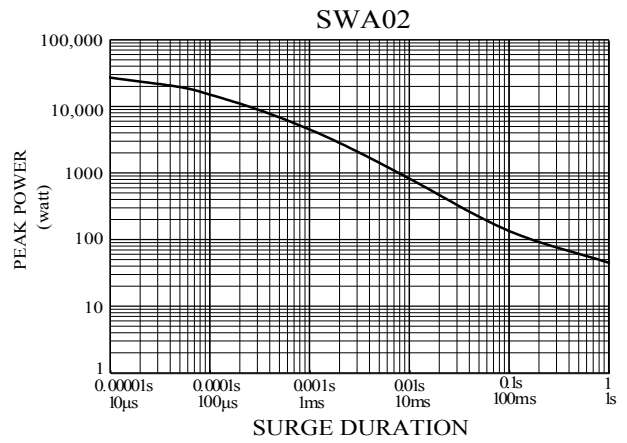
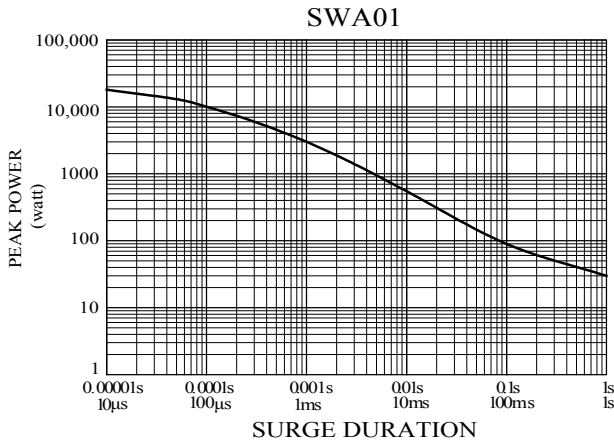
■ PERFORMANCE SPECIFICATIONS

Characteristics	Test Conditions	Limits
Short Time Over Load	IEC 60115-1 4.13 5 seconds 2.5x rated voltage	±2%
Load Life In Humidity	IEC 60115-1 4.24 56 days rated load at (40±2)°C and (93±3)% relative humidity	±5%
Load Life	IEC 60115-1 4.25.1 Rated load 1,000 hours with 1.5 hours ON, 0.5 hours OFF, at (70±2)°C	±5%
Resistance To Soldering Heat	IEC 60115-1 4.18.2 Leads immersed till 3mm from the body in (260±5)°C solder for 10±1 seconds	±1%
Solderability	IEC 60115-1 4.17.2 Solder area covered after (235±3)°C/(2±0.2) seconds with flux applied	95% min. coverage
Vibration	IEC 60115 4.22 Six hours in each parallel and axial direction with a simple harmonic motion having an amplitude of 0.75mm and 10 to 500 Hz.	±0.5%
Thermal Endurance	IEC 60115-1 4.25.3 1000 hours at 200°C without load	±5%
Thermal Shock	IEC 60115-1 4.19 -55°C 30minutes, +155°C 30minutes, 5 cycles	±3%
Surge Test	Proprietary test specification FRC-TR-010113 = √(12,000 PR) DC P is power rating, R is resistance value. Surge spec = 1.2/50µs Period = 60 sec Number of surges = 50	±5%

Quality • Reliability
Cost-Down via Innovation

SWA

■ SINGLE SURGE PERFORMANCE



Notes:

- SINGLE SURGE PERFORMANCE graph is good for NON REPETITIVE applications operating in an ambient temperature of 70°C or less. For temperatures above 70°C, the graph power must be derated further linearly down to zero at 150 °C.
- To determine applicable surge power in continuous-surge applications:
 1. Identify allowable duration and peak power P_{surge} of single surge;
 2. Determine ratio of surge duration/surge OFF time in application;
 3. Calculate $P_{applicable}$ backwardly according to Y-axis of SURGE POWER DERATING CURVE.