



脈衝晶圓電阻
Power Range: 1/8W~3W

MELF - MAS Series
MELF Anti-Surge Resistor

FEATURES

- ◆ SMD enabled structure
- ◆ Excellent Solderability Termination
- ◆ Lead (Pb)-free and **RoHS** compliant .
- ◆ Pure Sn termination on Ni barrier layer.
- ◆ Compatible with lead (Pb)-free and lead containing soldering processes.
- ◆ Metal glaze resistor elements provide high stable performance against environmental conditions and overload.

Figure



INTRODUCTION

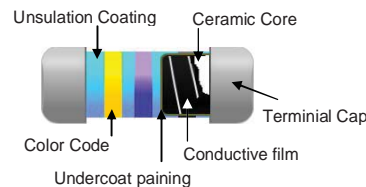
Special conductive film enhances capability of withstanding Coating insulating paint is approved by UL94V-0. It serves as an absorber of harmful surge energy, so to prevent hazard of fire and circuit damage caused by surge energy.

(脈衝晶圓電阻,採用特殊導電膜, 增強塗料絕緣漆承受UL94V - 0 條件的能力, 它作為有害浪湧能量吸收器, 因此可以防止因電路開關產生的火花所引起的危險和浪湧能量造成的電路損壞。)

APPLICATIONS

- ◆ Military
- ◆ Automotive
- ◆ Telecommunication
- ◆ Medical equipment.
- ◆ Avionics
- ◆ Space

STRUCTURE DIAGRAM



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ORDERING INFORMATION

Example: V-MAS02101JTR (1/4W 100R Tol. ±5% Tape Reel)

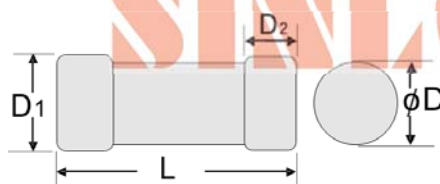
Power 功率	Size 型號	Type 型號	Resistance * E24	Tolerance 誤差值	Package 包裝	Package Quantity	
						Bulk/Plastic	Tape Reel
1/8W	0102	W-MAS02	10R=100	J= ±5%	TR=Reel	2000 pcs	2000 pcs
1/4W	0204	V-MAS04	100R=101	K= ±10%	B = Bulk		2000 pcs
1/2W	0207	U-MAS07	100R=102	M= ±20%			2500 pcs
1W	0309	S-MAS09	10K = 103				2500 pcs
2W	0411	Q-MAS11	100K=104				1000 pcs
3W	0515	N-MAS15	1M=105				500 pcs

*E24 See page 4.

DIMENSION

Unit: mm

Power	Size	Type	L	ΦD	D ₁	D ₂
1/8W	0102	W-MAS02	2.0±0.2	1.3±0.1	1.4±0.05	0.55±0.2
1/4W	0204	V-MAS04	3.5±0.2	1.45±0.1	1.6±0.2	0.70±0.2
1/2W	0207	U-MAS07	5.7±0.2	2.2±0.3	2.4±0.3	0.8±0.2
1W	0309	S-MAS09	8.5±0.3	3.0±0.3	3.3±0.3	1.70±0.2
2W	0411	Q-MAS11	10.5±0.3	4.0±0.3	4.3±0.2	2.30±0.2
3W	0515	N-MAS15	14.5±0.3	4.5±0.3	4.8±0.2	2.30±0.2



SINLOON®

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RATED SPECIFICATION

Type 型號	Size 尺寸	Power 功率	Max. Surge Voltage	Resistance Range (Ω)	Tolerance (%)
W-MAS02	0102	1/8W	100V	* 10R~ 1G	±5% ±10% ±20%
V-MAS04	0204	1/4W	150V		
U-MAS07	0207	1/2W	200V		
S-MAS09	0309	1W	280V		
Q-MAS11	0411	2W	400V		
N-MAS15	0515	3W	500V		



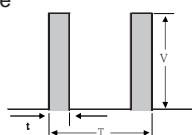
Coating : Light Green Color
Marking: Color Bands
E24 Code: See Page 4

■ Rated continuous Working Voltage (RCWV) = $\sqrt{POWER \cdot RATING \cdot RESISTANCE \cdot VALUE}$

* Contact us with your specific need of resistance.

*(如果要求的電阻值不在範圍內或指標未能達到應用要求請聯絡我們)

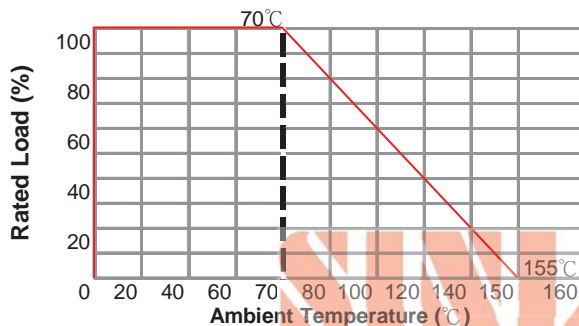
CHARACTERISTICS

Items	Test Method	Characteristics
Operate Temp. Range	As Spec.	-55°C ~ +155°C
Temperature Coefficient	JIS-C-5202-5.2	±100ppm/°C ; ±200ppm/°C ; ±500ppm/°C 1000ppm/°C
Load Life Humidity	40°C ±2°C , 90%~95% RH. 1000h, 1.5h [ON] 0.5h [OFF] cycle.	±5%
Load Life	70°C ±2°C , 1000h, 1.5h [ON] 0.5h [OFF] cycle.	±5%
Resistance to Soldering Heat	260°C ±5°C , 5sec ±1sec.	±2%
Solderability	235°C ±5°C , 2sec ±0.5sec.	90% Coverage / Min.
Bending test	Holding point width 90mm, Bending 5mm 1 time	±1%
Anti-Surge Characteristic	Voltage of $\sqrt{2 \times P \times R \times T / t}$ at room temperature Number of cycles: 10000 Note: T ≤ 10sec. T/t ≤ 100  $V = \sqrt{2 \times P \times R \times T / t}$	±5%
Non-Combustibility	The resistor shall withstand overload test in accordance with article UL-94, V-0 without producing a fire hazard.	
Operating Temperature Range:	-55°C ~ +155°C	

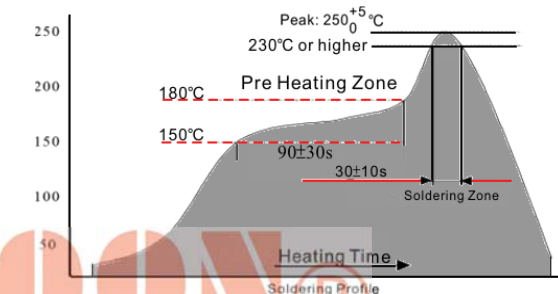
* Rated power is maximum power which can continuously loaded at specified ambient temperature 70°C, however when the ambient temperature exceeds 70°C, rated power should be determined from the derating curve of below.

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POWER DERATING CURVE



IR Reflow



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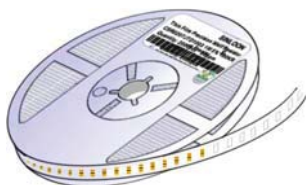
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□ PACKAGE SPECIFICATION

Part Number Type	Size	Rated Power	Quantity (ea)			SINLOON®	
			Tape Reel	Inner Box	Carton		
W-MAS02	0102	1/8W	178mm	3000 pcs	30K Pcs	180K pcs	
V-MAS04	0204	1/4W	178mm	3000 pcs	30K Pcs	180K pcs	
U-MAS07	0207	1/2W	178mm	2500 pcs	25K pcs	150K pcs	
S-MAS09	0309	1W	330mm	2500 pcs	5K Pcs	25K pcs	
Q-MAS11	0411	2W	330mm	2000 pcs	4K Pcs	20K Pcs	
N-MAS15	0515	3W	330mm	1500 pcs	3K pcs	15K Pcs	

Φ178mm Tape Reel

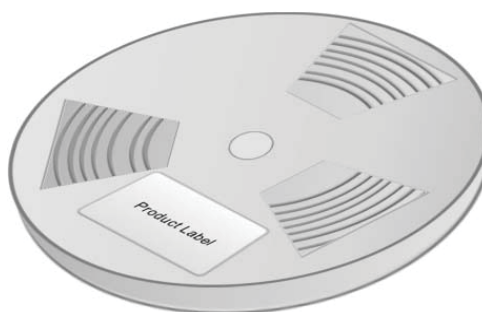


Inner Box

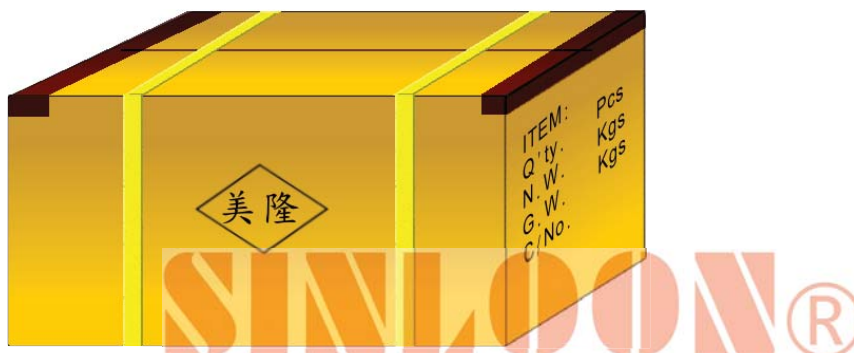


Φ330mm Tape Reel

Figure



Carton Package





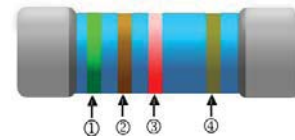
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□ **Standard Resistor Color Code E24 Series (4 band code)**

Color	1st digit	2nd digit	3rd Multiplier	4 Tolerance
Black	0	0	$\times 10^0$	
Brown	1	1	$\times 10^1$	$\pm 1\%$ (F)
Red	2	2	$\times 10^2$	$\pm 2\%$ (G)
Orange	3	3	$\times 10^3$	
Yellow	4	4	$\times 10^4$	
Green	5	5	$\times 10^5$	$\pm 0.5\%$ (D)
Blue	6	6	$\times 10^6$	$\pm 0.25\%$ (C)
Violet	7	7	$\times 10^7$	$\pm 0.1\%$ (B)
Gray	8	8	$\times 10^8$	$\pm 0.05\%$ (A)
White	9	9	$\times 10^9$	
Gold			$\times 0.1$	$\pm 5\%$ (J)
Silver			$\times 0.01$	$\pm 10\%$ (K)
None				$\pm 20\%$ (M)

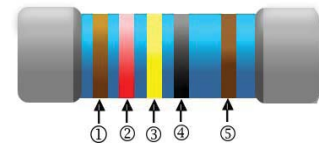
Example : Value : 5.1K Ω $\pm 5\%$



□ **Standard Resistor Color Code E96 Series (5 band code)**

Color	1st digit	2nd digit	3rd digit	4 Multiplier	5 Tolerance
Black	0	0	0	$\times 10^0$	
Brown	1	1	1	$\times 10^1$	$\pm 1\%$ (F)
Red	2	2	2	$\times 10^2$	$\pm 2\%$ (G)
Orange	3	3	3	$\times 10^3$	
Yellow	4	4	4	$\times 10^4$	
Green	5	5	5	$\times 10^5$	$\pm 0.5\%$ (D)
Blue	6	6	6	$\times 10^6$	$\pm 0.25\%$ (C)
Violet	7	7	7	$\times 10^7$	$\pm 0.1\%$ (B)
Gray	8	8	8	$\times 10^8$	$\pm 0.05\%$ (A)
White	9	9	9	$\times 10^9$	
Gold				$\times 0.1$	$\pm 5\%$ (J)
Silver				$\times 0.01$	$\pm 10\%$ (K)
None					$\pm 20\%$ (M)

Example : Value : 12.4 Ω $\pm 1\%$



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□ **STANDARD RESISTANCE VALUE IN A DECADE**
For Resistance According to IEC Publication 63

E24	E96				Example :
10	100	178	316	562	
11	102	182	324	576	
12	105	187	332	590	E26 Series: 102 Resistance: 0.102R; 1.02R; 10.2R; 102R; 1K02; 10K2; 102K; 1M02; 10M2; 102M.
13	107	191	340	604	
15	110	196	348	619	□ ORDERING RESISTANCE CODE
16	113	200	357	634	
18	115	205	365	649	E96 ($\pm 1\%$)
20	118	210	374	665	
22	121	215	383	681	E24 ($\pm 5\%$)
24	124	221	392	698	
27	127	226	402	715	m5=R0005 Ω 1K = 1001
30	130	232	412	732	
33	133	237	422	750	50m=R05 Ω 100K=1003
36	137	243	432	768	
39	140	249	442	787	1000m=1 Ω 10M=1005
43	143	255	453	806	
47	147	261	464	825	10R=10R0 1G = 1007
51	150	267	475	845	
56	154	274	487	866	1R = 1R0
62	158	280	499	887	10R = 100
68	162	287	511	909	100R = 101
75	165	294	523	931	10G = 109
82	169	301	536	953	
91	174	309	549	976	

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※Mayloon characteristic parameters of electronic product specification changes or updates without notice to improve。

