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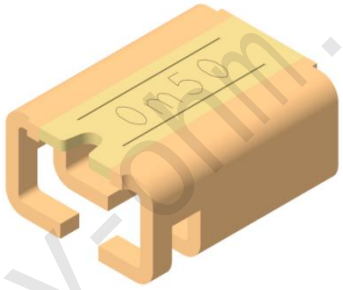
Kelvin detect precision alloy resistor

E-beam Welding Alloy Resistor

4-terminal SMD，current sensing，excellent stability，AEC-Q200 compliant



Features:

- E-beam welding craft，square hole structure with 4-terminal，pure copper electrode，ideal solution for current detection applications
- high reliability and stability ,superb pulse load capability ,±0.5% tolerance
- full metal structure,pickling and passivating on the surface of metal ,vulcanization resistance, strong weather resistance
- Ultra-low thermal EMF
- Ultra-low parasitic inductance，fast response，suitable for high frequency AC current detection
- RoHS compliant
- customization

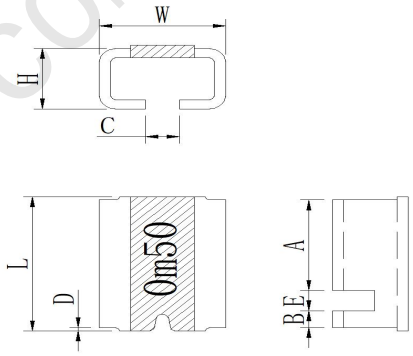
parameter:	
resistance value	0.3mΩ～2.5mΩ
tolerance	±0.5%(D)，±1%(F)，±5%(J)
TCR	±75ppm/℃
temperature range	-55℃～+170℃
inductance	<3nH
thermal EMF (0-100°C)	<1 μV/℃
power ($P_{70℃}$)	MAX 10W

Type Designation:WSKN1216ML500FT0 WSKN1216 manganese copper 0.5mohm1%package with tape and reel

W	S	K	N	1	2	1	6	M	L	5	0	0	F	T	0

WSKN	Size	material	resistance value	tolerance	code
E-beam alloy resistor with 4-terminal	1216	M:manganese copper K:Karma	L500 = 0.5mΩ R002=2mΩ 2L50=2.5mΩ	D=±0.5% F=±1% J=±5%	T0: package with tape and reel B0: without tape and reel Tx: special code(x: 0~9)

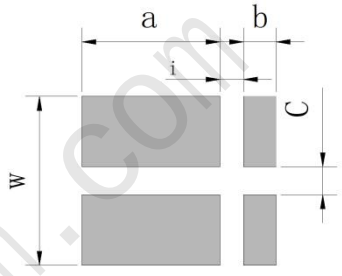
Dimensions(mm):



series	power	material	resistance value	L (mm)	W (mm)	H (mm)	A (mm)	B(mm)	C(mm)	D(mm)	E(mm)
WSKN1216	10W	M	0.3mΩ	$4.1_{-0.3}$	$3.1_{-0.35}$	$1.9_{-0.35}$	2.7±0.1	0.5±0.1	$0.8^{+0.3}$	0.1	$0.6^{+0.15}$
	9W		0.5mΩ								
	7W		1mΩ								
	5W	K	2mΩ								
	5W		2.5mΩ								

notice：word code marking as laser engraving,the "L" is used in the naming to indicate the mΩ and also show the decimal point position, which corresponds to the mark "m".For example： 0m30=0.3mΩ ,the "R" is used in the naming to indicate the Ω and also show the decimal point position, which corresponds to the mark "R".For example：R001=1mΩ

Recommended pad and size(mm):



series	resistance value	a (mm)	b (mm)	c (mm)	i (mm)	w (mm)
WSKN1216	0.3~2.5mΩ	2.95	0.7	0.6	0.5	3.6

construction:

Derating Curve:

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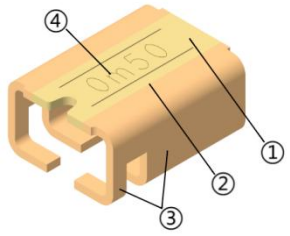
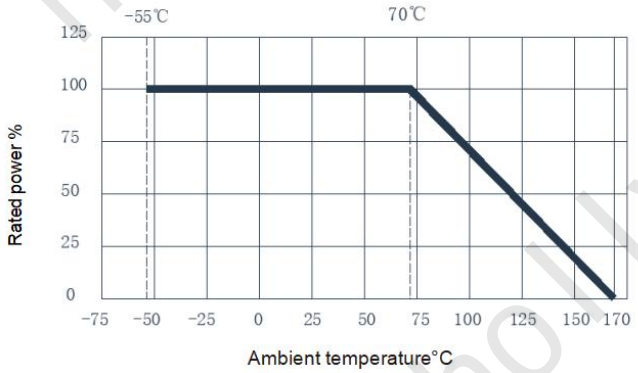
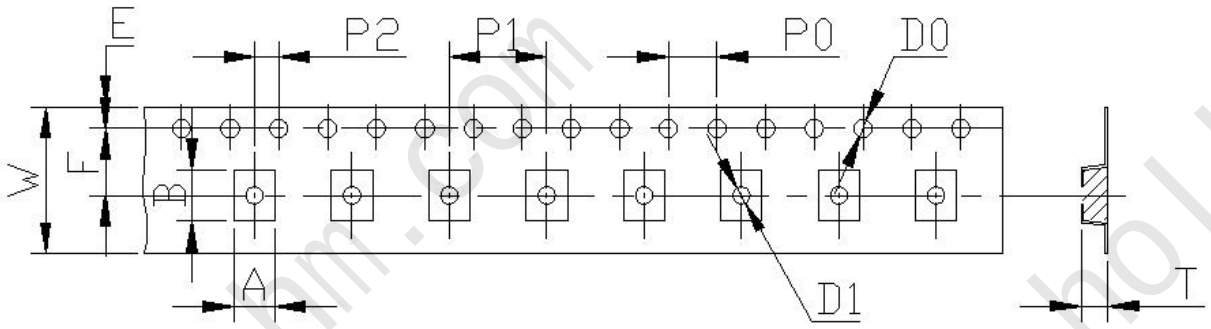


1. resistor body：low TCR
2. E-beam welding
3. pur copper sampling with 4 terminal
4. laser marking

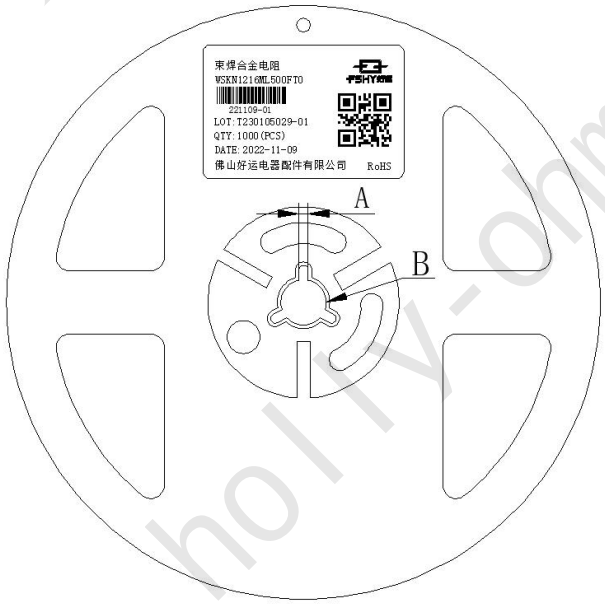


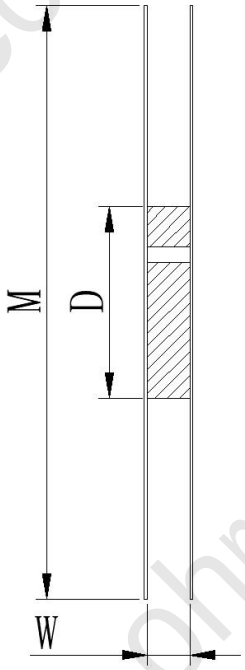
performance indicators:		
Test Item	**standard**	**Test method**
TCR	Within specified TCR	IEC60115-1 4.8，measured point 20°C～+130°C，reference point +20°C
Solderability	No visible damage 95%covered Minimum	IEC60115-1 4.17，245°C tin bath，3s
Short-time overload	No visible damage ▵R±1% Maximum	IEC60115-1 4.13，five times rated power，5s
Resistance to soldering heat	No visible damage ▵R±0.5% Maximum	IEC60115-1 4.18，260°C tin bath，maintaining10s
High temp. & high humidity	No visible damage▵R±1% Maximum	Applying 10% of the rated power (current) or the maximum current of the component (whichever is lower) for a duration of 1000 hours in a temperature of 85°C and a humidity of 85% according to MIL-STD-202 method 103
High temperature storage	No visible damage ▵R±0.5%Maximum	IEC60115-1 4.25.3，1000hours@170°C，without loading current and voltage
Low temperature load	No visible damage ▵R±0.5%Maximum	IEC60115-1 4.36，cooled from room temperature to -55°C ,no load for 1.5 hours,applying rated power,continuously flowing for 45 minutes,cool for 15 minutes，then recover to room temperature for testing again.
temperature cycle	No visible damage ▵R±1% Maximum	IEC60115-1 4.19，-55°C@30mins～+155°C@30mins；1000 cycles
load life	No visible damage ▵R±1.0% Maximum	IEC 60115-1 4.25.1，1000hrs.，70 ℃ ± 2 ℃，rated current, or the maximum current rating of the component (whichever is lower) is applied for 1.5 hours/0.5 hour interruption

Packing specifications and size (mm):



Type	A	B	W	E	F	P0	P1	P2	ΦD0	T	quantity
1216	3.4	4.2	12	1.75	5.5	4	8	2	1.5	2.3	1000





Reel Type	W	M	A	B	D
7"reel for12mm tape	12.3±1.0	178±2.0	2.0±0.5	13.5±0.5	60.0±1.0

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version update record

Version NO.	update record	person in charge	Issue date
A0	Updated specification version	Sheguang Zhu	12May2022
A1	Add resistance value of 2.5mΩ	Sheguang Zhu	01Feb2023
A2	Updated performance metrics，TCR up to 75ppm	Qingke Zeng	24Oct2023