

ATTN: A g i l e n t T e c h n o l o g i e s

S P E C I F I C A T I O N

DATE 2008.6.13

STYLE : Ultra-Precision Resistor
(Transfer Molded)

TYPE : MCK



Alpha Electronics Corporation

Engineer Technical Division

Drawn by : _____

Confirmed by : _____

Approved by : _____

1. SCOPE

This Specification is ALPHA ultra precision metal foil resistors Which has metal foil structure.

2.EXAMPLE

Type	Lead Forming	TCR	Nominal Resistance	Resistance Tolerance
MC	K	X	1 0 K 0 0 0	A

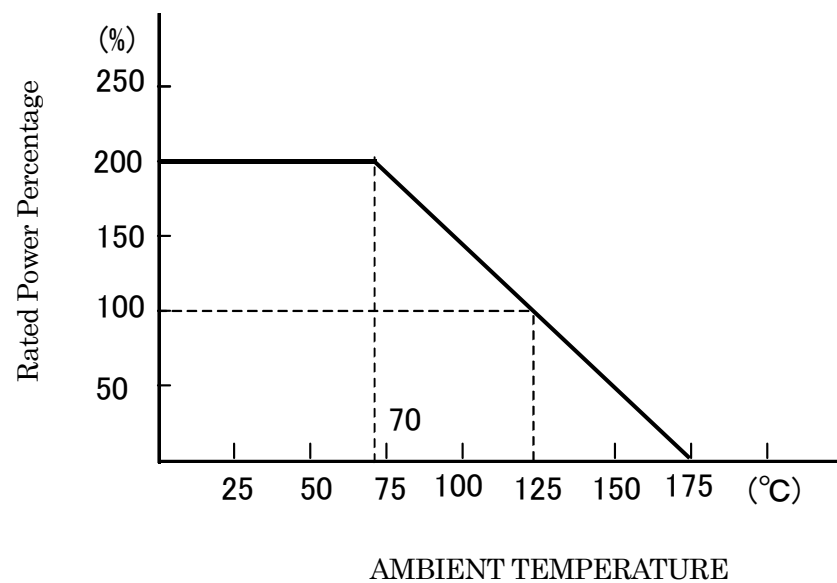
3. ELECTRICAL SPECIFICATIONS

Shall conform to requirements shown in Table-1

Table-1

TYPE	TCR(ppm/°C) −55°C to + 125°C	Resistance Range(Ω)	Resistance Tolerance(%)	Rated Power (W) at 125°C
MCK	0±15(W)	1 to 5	±0.5(D) ±1.0(F)	0.3 0.2 at 150kΩ or above
	0±5(X)	5 to 30	±0.1(B) ±0.5(D) ±1.0(F)	
	0±5(X)	30 to 210k	±0.005(V) ±0.01(T)	
	0±2.5(Y) 0±1(Z)		±0.02(Q) ±0.05(A) ±0.1(B) ±0.5(D) ±1.0(F)	

Power Derating Curve

**Fig-1**

4. MECHANICAL

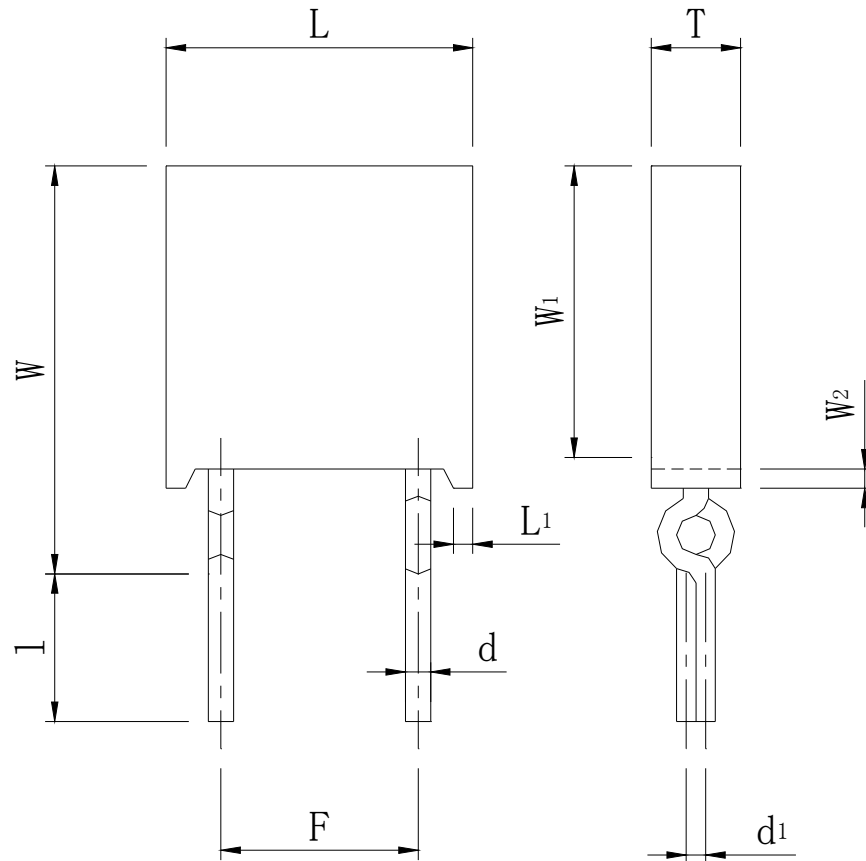
4.1 Dimension Fig-2

4.2 Materials

Element Metal Foil

Substrate Ceramic

Leads Sn 2.5Cu Plating → Sn 3.5Ag0.5Cu Dipping



TYPE	MCK
L	7.9 ± 0.2
L_1	1.0 max
W	11.5max
W_1	8.0 ± 0.2
W_2	0.3 max
T	2.3 ± 0.2
F	5.08 ± 0.25
l	3.8 ± 1.0
d	$\phi 0.65 \pm 0.05$
d_1	0.5 ± 0.5

Dimensions:mm

Fig-2

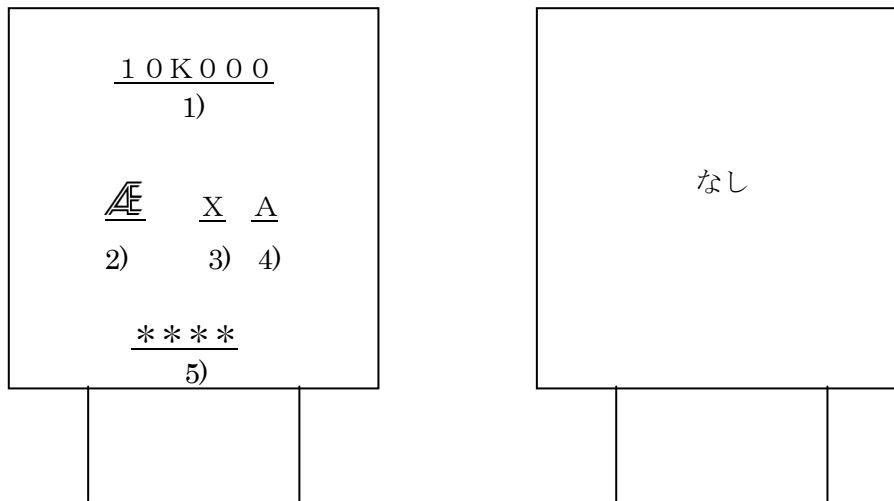
5. TYPICAL PERFORMANCE AND TEST CAPABILITIES

Shall conform to requirements shown in Table-2

Table-2

Parameters	Test condition	ALPHA Spec value
Max.Rated Operating Temperature		125°C
Working Temperature Range		-65°C~+175°C
Max.Working Voltage		MC=300V
Power Conditioning	125°C,Rated Power,100hrs	$\pm(0.20\%+0.01\Omega)$
Thermal Shock	-65°C/30min. $\leftrightarrow$ +150°C/30min.,5cycles	$\pm 0.05\%$
Overload	Rated Power $\times$ 6.25,5sec	$\pm 0.05\%$
Solderability	Steam Aging 8hrs,245°C,5sec.	over 95% coverage
Resistance to Solvents	①Isopropyl Alcohol+Mineral Spirits ②Water+Butyl Cellosolve+Monoethanolamine	no damage
Low Temperature Storage	-65°C,24hrs	$\pm 0.05\%$
Low Temperature Operation	-65°C, Rated Voltage,45min.	$\pm 0.05\%$
Terminal Strength	0.908kg(2pounds),10sec	$\pm 0.02\%$
Dielectric Withstanding Voltage	Atmospheric:AC 300V rms. Barometric:200V rms.	$\pm 0.02\%$
Insulation Resistance	DC 100V,2min.	over 10,000M Ω
Resistance to Soldering Heat	+260°C,10sec	$\pm 0.02\%$
Moisture Resistance	+65°C to -10°C,90%RH to 98%RH, Rated Voltage,10cycle(240hrs)	$\pm 0.05\%$
Shocks(Specified pulse)	100G,6ms,Sawtooth wave , X,Y, each 10 shocks	$\pm 0.01\%$
Vibration,High Frequency	20G,10Hz to 2000Hz to 10Hz,20min X,Y, each 4hrs	$\pm 0.02\%$
Life	125°C,Rated Voltage, 1.5hr.-ON,0.5hr.-OFF,2000hrs	$\pm 0.05\%$
Life 70 °C Power Rating	70°C, Rated Voltage $\times$ 2, 1.5hr.-ON,0.5hr.-OFF.2000hrs	$\pm 0.05\%$
Storage Life	15°C to 35°C,15%RH to 75%RH,No Load 10,000hrs	$\pm 0.005\%$
High Temperature Exposure	175°C,No Load,2,000hrs	$\pm 0.5\%$

6. Indication

**Fig-3**

- 1) Nominal Resistance
- 2) Logo
- 3) TCR
- 4) Resistance Tolerance
- 5) Date Code

7. Packing / shipment

Will provide this resistor and store without any impairment during transfer.

8. Others This is a RoHS treatment article.