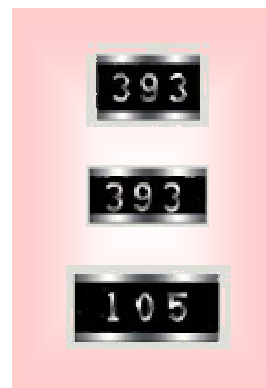




# ***RESISTORS WITH WIDE TERMINATIONS***

## ***WK73***



AI / Sales & Marketing, July 2006



# RESISTORS

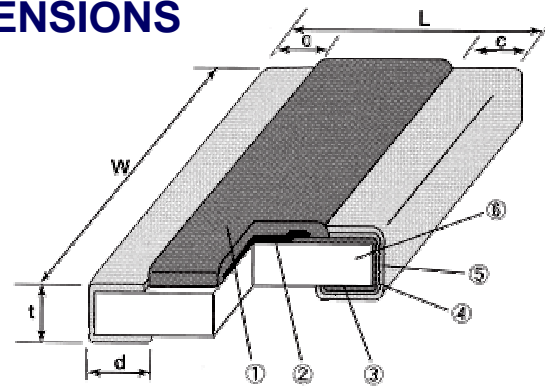
## WK73 SERIES – WIDE TERMINATION CHIP

**New Product**

### FEATURES

- Enhanced terminal strength because of wide electrodes
- Low thermal expansion stress
- High power rating

### CONSTRUCTION & DIMENSIONS



- 1 Protective coating
- 2 Resistive element  
WK73R: RuO<sub>2</sub>  
WK73S: Low range resistive element
- 3 Inner electrode
- 4 Nickel plating (Ni)
- 5 Solder plating (Sn)
- 6 Alumina substrate (Al<sub>2</sub>O<sub>3</sub> 96%)

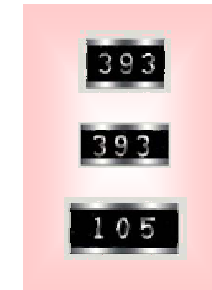
	SIZE	TYPE	L	W	c	d	t
393	1020	WK73 2H	2.5 ± 0.15	5.0 ± 0.15	0.4 ± 0.2	0.75 ± 0.1	0.6 ± 0.1
393	1218	WK73 2J	3.1 ± 0.15	4.6 ± 0.15			
105	1225	WK73 3A		6.4 ± 0.15	0.45 ± 0.15		

# RESISTORS

## WK73 SERIES – WIDE TERMINATION CHIP

### APPLICATIONS

- Power Supplies
- ECU

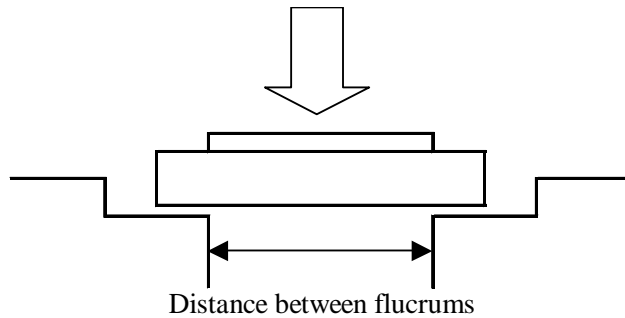


SIZE	TYPE	T.C.R. (ppm/K)	POWER* RATING	RESISTANCE RANGE	
				F (±1%) E24	J (±5%) E24
1020	WK73S 2H	± 800	1.0 W	–	10 mΩ ... 24 mΩ
		± 200		27 mΩ ... 200 mΩ	27 mΩ ... 200 mΩ
		± 100		220 mΩ ... 9.1 Ω	220 mΩ ... 9.1 Ω
	WK73R 2H	± 100		10 Ω ... 430 kΩ	10 Ω ... 430 kΩ
		± 200		470 kΩ ... 1 MΩ	470 kΩ ... 1 MΩ
		–		–	–
1218	WK73S 2J	± 800	1.5 W	–	10 mΩ ... 30 mΩ
		± 200		33 mΩ ... 220 mΩ	33 mΩ ... 220 mΩ
		± 100		240 mΩ ... 9.1 Ω	240 mΩ ... 9.1 Ω
	WK73R 2J	± 100		10 Ω ... 510 kΩ	10 Ω ... 510 kΩ
		± 200		560 kΩ ... 1 MΩ	560 kΩ ... 1 MΩ
		–		–	–
1225	WK73S 3A	± 800	1.5 W	–	10 mΩ ... 20 mΩ
		± 300		22 mΩ ... 30 mΩ	22 mΩ ... 30 mΩ
		± 200		33 mΩ ... 330 mΩ	33 mΩ ... 330 mΩ
	WK73R 3A	± 100		360 mΩ ... 9.1 Ω	360 mΩ ... 9.1 Ω
		± 100		10 Ω ... 330 kΩ	10 Ω ... 330 kΩ
		± 200		360 kΩ ... 1 MΩ	360 kΩ ... 1 MΩ

Max. working voltage 200V, max. overload voltage 400V, a power derating from 70°C to 155°C has to be applied

# RESISTORS

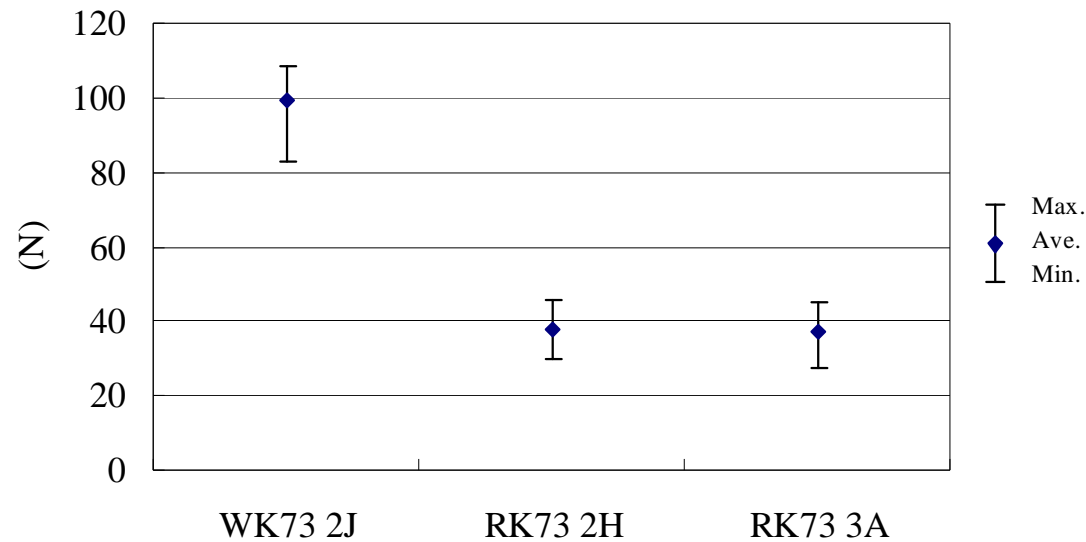
## WK73 SERIES – BODY STRENGTH



Distance between flucrums

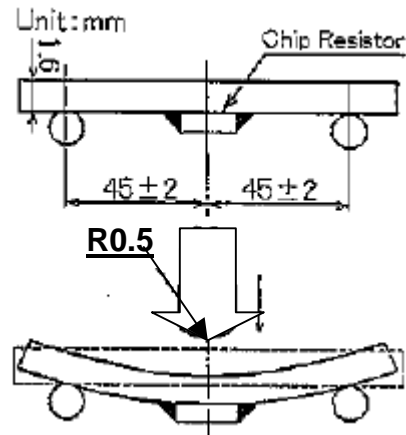
Product		distance (mm)
type	size(inch)	
WK73 2J	0.12×0.18	2.6
RK73 2H	0.20×0.10	4.6
RK73 3A	0.25×0.12	5.7

Body strength n=20



# RESISTORS

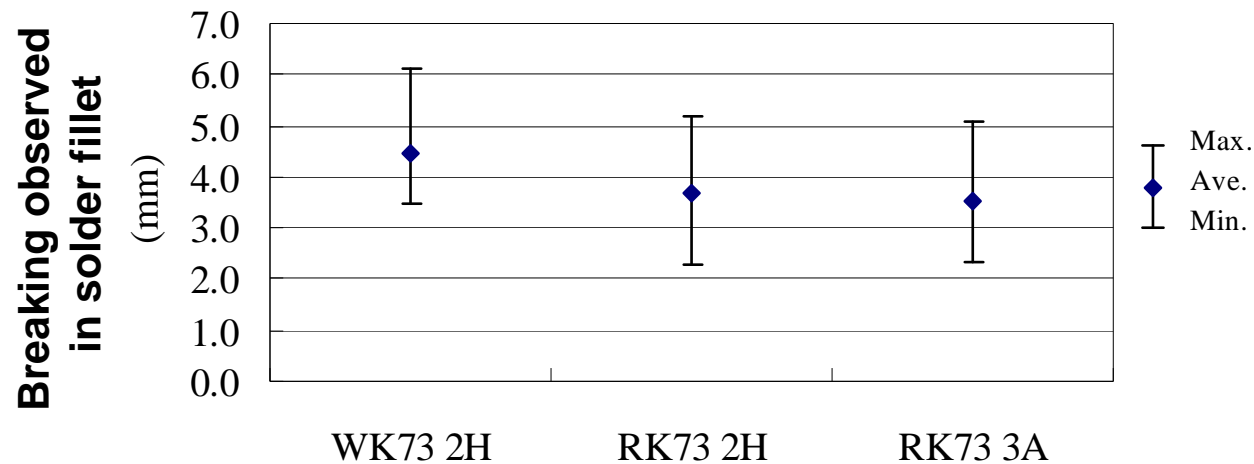
## WK73 SERIES – BENDING TEST



These are much more severe test conditions than those indicated in the product specification.

Especially the tip of the stamp utilized to stress the PCB is more sharp (R0.5 vs. R230).

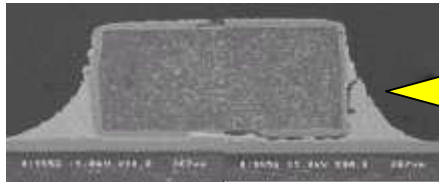
Bending test n=20  
(Pb free solder)



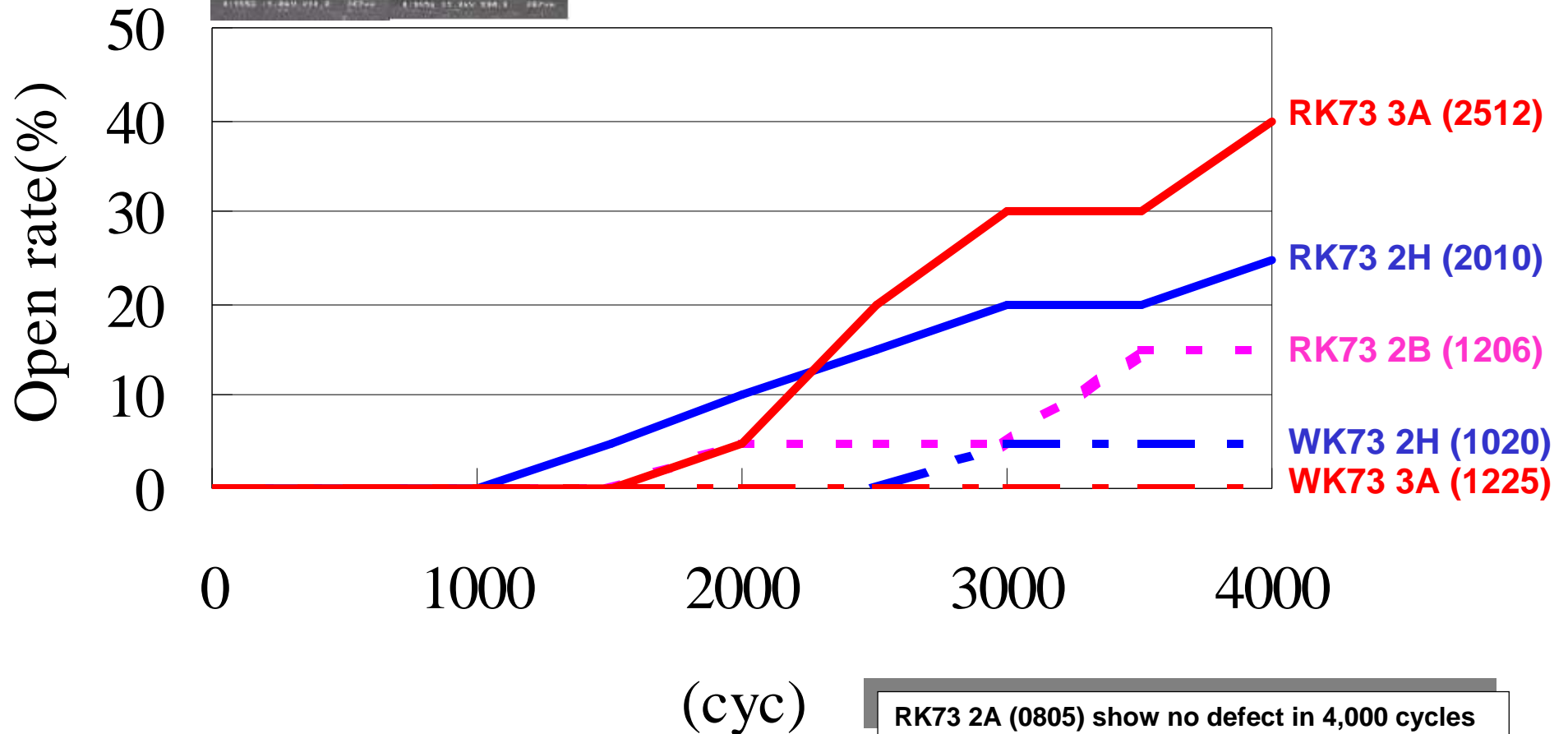
# RESISTORS

## WK73 SERIES – THERMAL SHOCK

Thermal Shock Test (30 min. @ -55°C / 30 min. @ +125°C, 4000 cycles, n = 20, Pb-free solder)



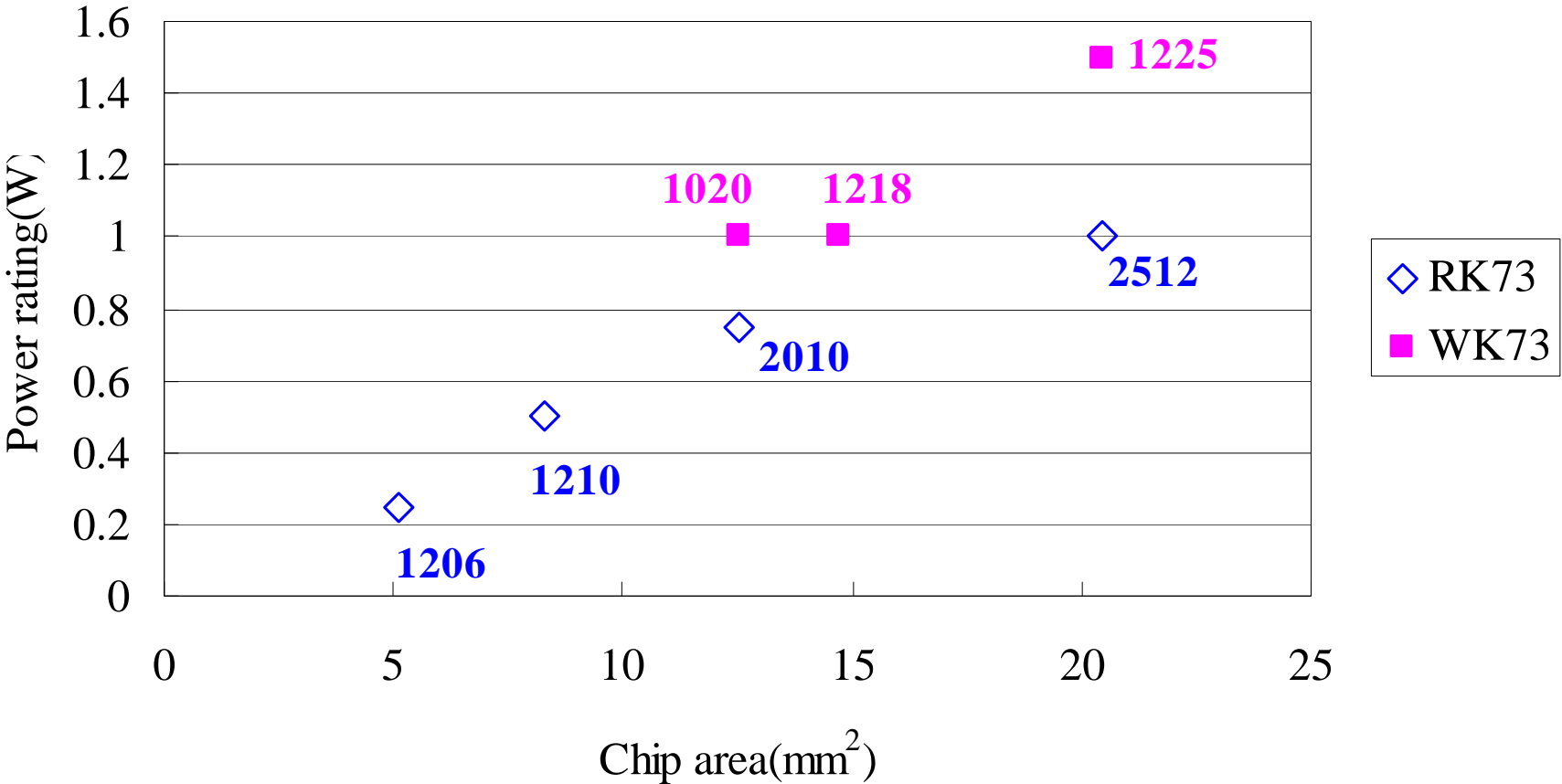
First Crack observed in the cross-section of a RK73 2H (2010) after 1000 cycles



# RESISTORS

## WK73 SERIES – POWER RATING

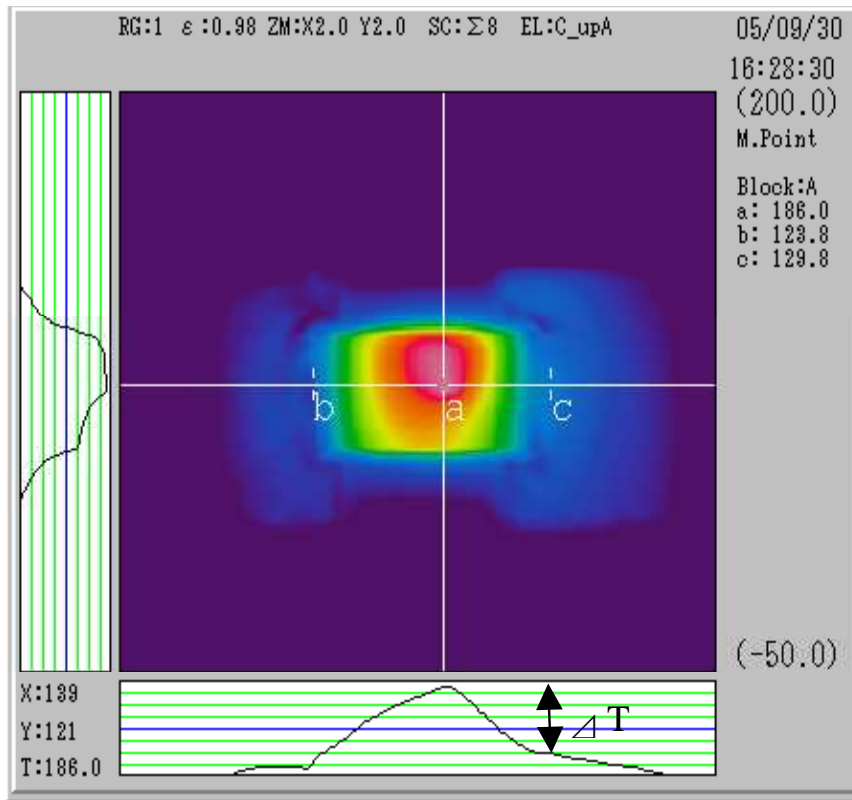
Chip size and power rating



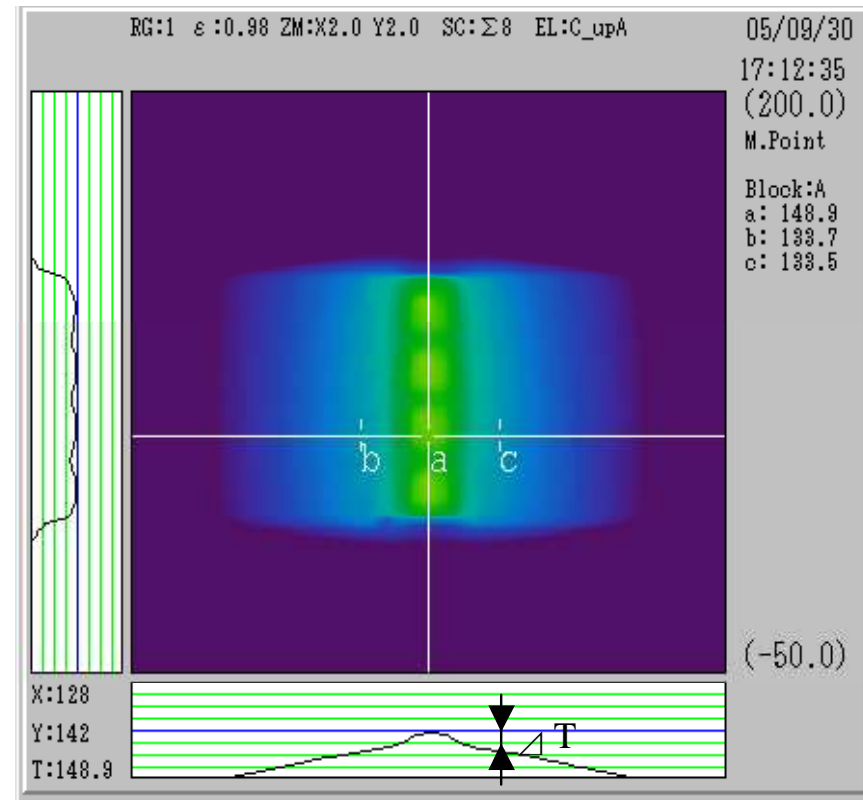
# RESISTORS

## WK73 SERIES – SURFACE TEMPERATURE RISE

### RK73 3A (2512)



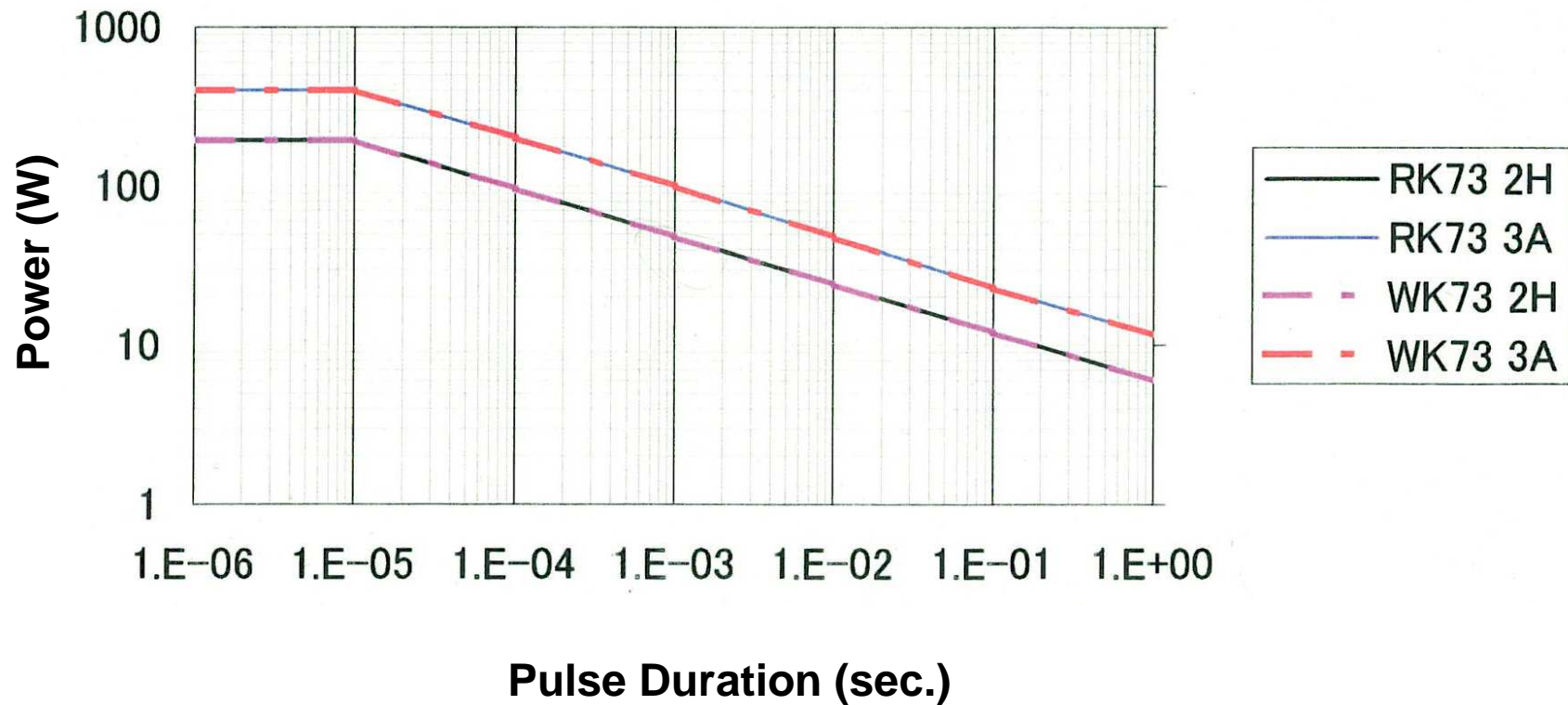
### WK73 3A (1225)



1.5 W Power applied

# RESISTORS

## WK73 SERIES – ONE PULSE LIMITING POWER



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Thank you very much for your attention.



South Japan Alps & Ina Valley

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