

## K SERIES NON-FLAMMABLE WIRE WOUND FIXED RESISTORS



### GENERAL SPECIFICATIONS

Model	Power Rating[W]	Resistance Range [OHM]	
		Standard	S type
KH KHIS KZG	15	1.0-15K	3K
	20	1.0-20K	4K
	30	1.5-30K	4K
	40	2.0-40K	6K
	50	2.0-50K	8K
	60	1.5-60K	12K
	80	2.0-80K	15K
	100	2.5-100K	20K
	120	3.0-120K	25K
	150	4.0-150K	30K
	200	5.0-200K	40K
	300	8.0-200K	60K
	400	10.0-300K	80K
	500	10.0-400K	90K
	600	10.0-500K	100K
	700	10.0-600K	110K
	1000	10.0-900K	120K
1200	10.0-1000K	130K	
1500	10.0-1100K	140K	
2000	10.0-1200K	150K	

Tolerance:  
 1ohm less than or equal to R: +-5%[J]  
 1ohm greater than R: +-10%[K]

### ORDERING PROCEDURE EXAMPLE

KZG 200   
 100   
 J  
 Model#      Resistance      Tolerance

## CHARACTERISTICS

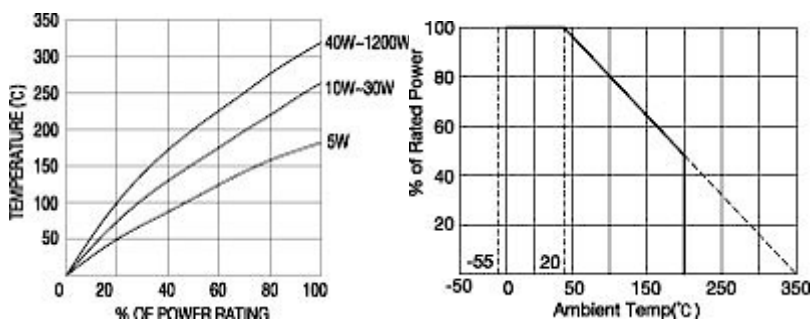
Values in [ ] mean change in ohmic value after test

Temp. Coefficient	+-200ppm/C max.	
Power Rating Load	Change in R/R $\leq$ +-[1%+0.05OHM]	350C max.
Short Time Overload	Change in R/R $\leq$ +-[2%+0.05OHM]	1000% rated power 5 secs
Insulation Resistance	100MOHM min. DC 500V	
Dielectric Withstanding V.	KG, KH : AC 1500V 1 min., KHZ, KZG : AC 3000V 1 min.	
Terminal Strength	5-20W : 4.5kgf, H20-40W : 6kgf, 60-200W : 8kgf, 300-400W : 10kgf-30secs	
Resistors Strength	5W-40W: 20kgf, 60W-400W : 30kgf-30secs	
Vibration	Mount : KG type, 1.5mm 10-55Hz/1min.X,Y,Z 2 hours.	
Solderability	75% coverage min. 270C 5 secs.	
Heat Resistance	350C 2 hrs	
Thermal Shock	Change in R/R $\leq$ +-[2%+0.05OHM]	Power rating load-30min. -55C-15min.
Humidity (Steady state)	Change in R/R $\leq$ +-[2%+0.05OHM, 10MOHM min.]	40C, 95%RH, 500 hrs.
Load Life in Humidity	Change in R/R $\leq$ +-[2%+0.05OHM]	See Note1
Load Life	Change in R/R $\leq$ +-[5%+0.05OHM]	Power rating, 90 min. ON, 30min OFF, 500hrs.
Flame Retardancy	100-600% rated power load	

**Note1:** 0.1XP rating, 90min. ON, 30min. OFF, 40C, 95%RH, 500hrs.

**Note2:** Applied voltage - AC RMS voltage

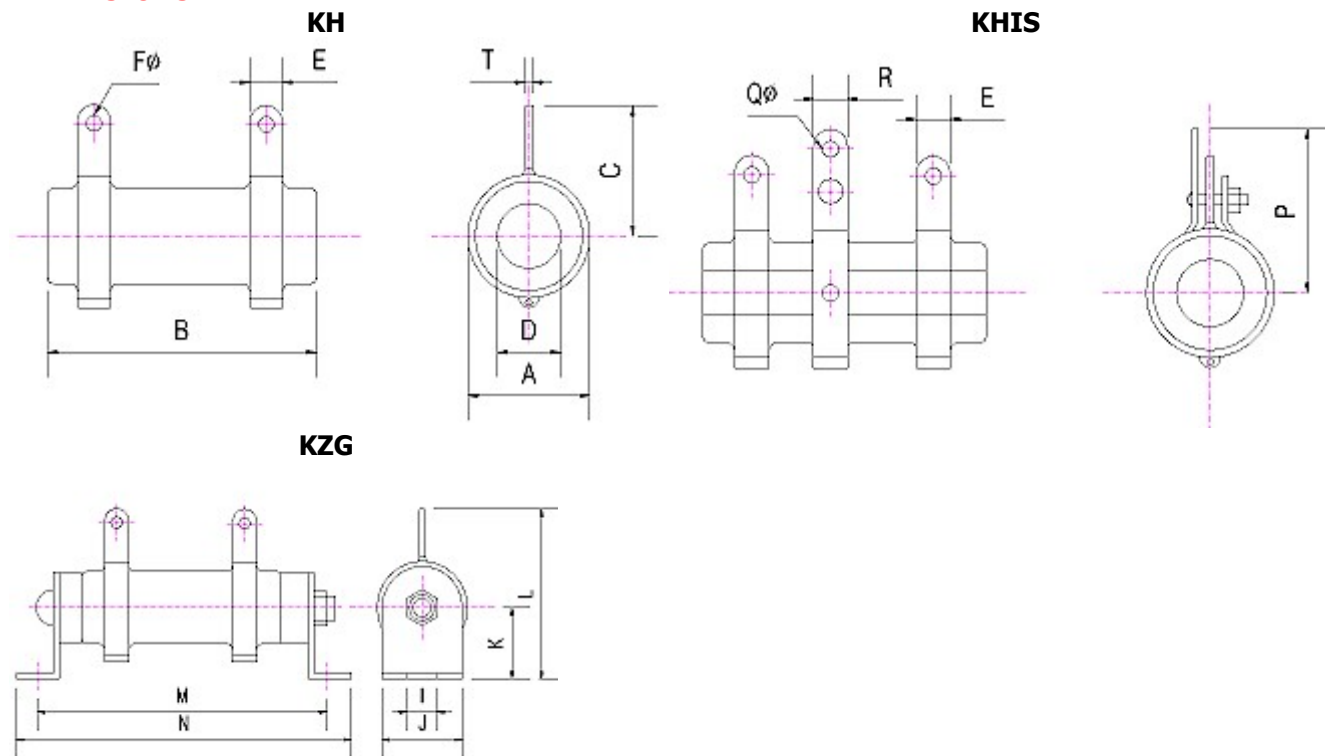
## SURFACE TEMPERATURE INCREASE VERSUS POWER LOAD & DERATING



## PERCENTAGE POWER DECREASE IN GROUPED APPLICATIONS

Interval	State	2EA	3EA	4EA	5EA	6EA	7EA	8EA	9EA	10EA	11EA	12EA
40mm	Open	63	56	51	47	45	43	40	38	36	34	32
	Close	54	47	43	41	38	36	34	32	31	29	27
45mm	Open	70	64	60	56	53	50	48	46	44	42	40
	Close	60	54	51	47	45	42	41	39	37	36	34
50mm	Open	73	68	64	60	58	56	55	54	52	50	49
	Close	62	58	54	51	49	47	46	45	44	43	42
55mm	Open	77	70	67	64	63	60	59	58	57	56	56
	Close	65	59	57	54	53	51	50	49	48	47	47
75mm	Open	82	76	72	68	66	65	64	63	62	61	60
	Close	70	64	61	58	56	55	54	53	52	51	50

## DIMENSIONS



Model	Power Rating [w]	Dimensions [mm]															
		A	B	C	D	E	F	I	J	K	L	M	N	P	Q	O	T
KH KHIS KZG	15	17	50	20	8.5	5.0	2.8	4.2	18	22	41	71	86	26	3.5	6.0	0.5
	20	17	50	20	8.5	5.0	2.8	4.2	18	22	41	71	86	26	3.5	6.0	0.5
	30	17	75	20	8.5	5.0	2.8	4.2	18	22	41	99	110	26	3.5	6.0	0.5
	40	17	90	20	8.5	5.0	2.8	4.2	18	22	41	115	124	26	3.5	6.0	0.5
	50	28	75	33	14.0	8.0	4.0	6.0	26	30	62	110	133	35	4.2	8.5	1.4
	60	28	90	33	14.0	8.0	4.0	6.0	26	30	62	128	148	35	4.2	8.5	1.4
	80	28	115	33	14.0	8.0	4.0	6.0	26	30	62	150	173	35	4.2	8.5	1.4
	100	28	140	33	14.0	8.0	4.0	6.0	26	30	62	175	198	35	4.2	8.5	1.4
	120	28	165	33	14.0	8.0	4.0	6.0	26	30	62	200	221	35	4.2	8.5	1.4
	150	28	195	33	14.0	8.0	4.0	6.0	26	30	62	230	253	35	4.2	8.5	1.4
	200	28	254	33	14.0	8.0	4.0	6.0	26	30	62	290	313	35	4.2	8.5	1.4
	300	42	254	45	24.0	12.0	5.5	6.5	40	40	86	300	330	52	5.0	12.0	1.6
	400	42	330	45	24.0	12.0	5.5	6.5	40	40	86	380	407	52	5.0	12.0	1.6
	500	52	300	57	29.0	15.0	9.0	6.5	54	41	99	345	362	53	5.0	12.0	2.2
	600	52	330	57	29.0	15.0	9.0	6.5	54	41	99	375	392	53	5.0	12.0	2.2
	700	65	330	65	46.0	20.0	10.0	10.0	65	59	126	385	404	75	10.0	20.0	2.2
	1000	77	330	71	47.0	20.0	10.0	10.0	75	63	130	388	408	80	10.0	20.0	2.2
	1200	77	330	71	47.0	20.0	10.0	10.0	75	63	130	388	408	80	10.0	20.0	2.2
1500	77	400	71	47	20	10	10	75	63	130	458	478	80	10	20	2.2	
2000	77	500	71	47	20	10	10	75	63	130	558	578	80	10	20	2.2	

## SHORT TIME OVER LOAD RATING

Load time(sec)	1	2	3	4	5	10	30	60	180	300	600	900
Max Rated Load(%)	2600	2000	1600	1400	1300	1000	600	450	200	150	120	110