



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

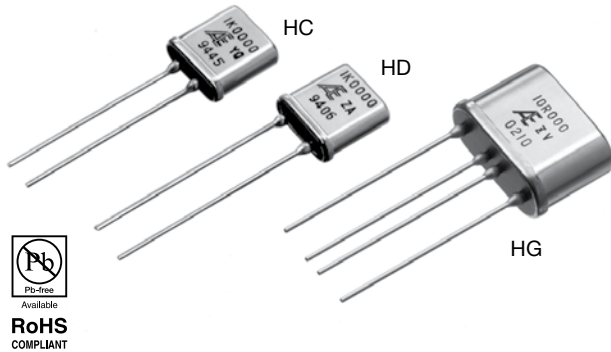
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## Ultra Precision Resistor (Hermetically Sealed)

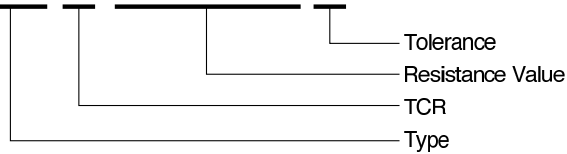


RoHS  
COMPLIANT

### COMPOSITION OF TYPE NUMBER

Example:

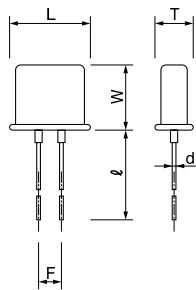
# HC Y 30K000 T



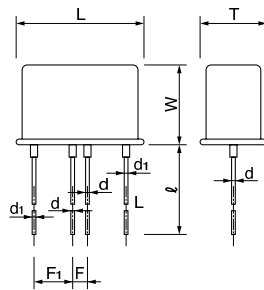
Resistance value, in ohm, is expressed by a series of six characters, five of which represent significant digits. The sixth R or K is a dual-purpose letter that designates both the value range (R for ohmic; K for kilo-ohm) and the location of decimal point.

### CONFIGURATION (DIMENSIONS IN mm)

HC, HD Type



HG Type



Type	HC	HD	HG
L	10.7±0.3		19.0±0.3
W	10.7±0.3		12.8±0.3
T	4.3±0.3		8.8±0.3
F	3.81±0.25	5.08±0.25	2.54±0.25
F1	-		5.08±0.25
l	30±10		
d	Dia. 0.65±0.05		
d1	Dia. 0.8±0.05		

### TCR, RESISTANCE RANGE, TOLERANCE, RATED POWER

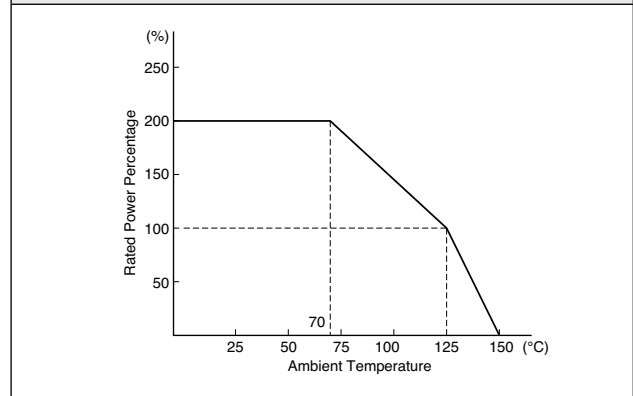
Type	TCR (ppm/°C) -55°C to +125°C*	Resistance Range (Ω)	Resistance Tolerance (%)†‡	Rated Power (W) at 125°C
HC HD	0±15 (W)	1 to 5	±0.5 (D) ±1 (F)	0.3
	0±5 (X)	5 to 30	±0.1 (B) ±0.5 (D) ±1 (F)	
	0±5 (X) 0±2.5 (Y) 0±1 (Z)**	30 to 120k	±0.005 (V) ±0.01 (T) ±0.02 (Q) ±0.05 (A) ±0.1 (B) ±0.5 (D) ±1 (F)	
HG	0±2.5 (Y) 0±1 (Z)**	1 to 10	±0.01 (T) ±0.02 (Q) ±0.05 (A) ±0.1 (B) ±0.5 (D) ±1 (F)	
		10 to 10k	±0.005 (V) ±0.01 (T) ±0.02 (Q) ±0.05 (A) ±0.1 (B) ±0.5 (D) ±1 (F)	

\* Symbols in parentheses are for type number composition.

† Resistance figures are obtained by measuring the leads at point 12.7±3.2 mm away from the base for type HC and HD, but, in case of resistance below 10 ohm, the value at 1.6±0.6 mm away from the base for all types.

\*\*Temperature characteristic Z is applicable for temperature range between 0°C and 60°C.

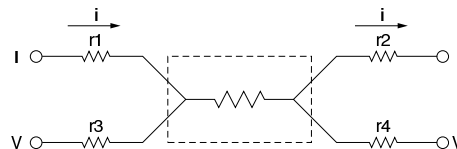
### POWER DERATING CURVE



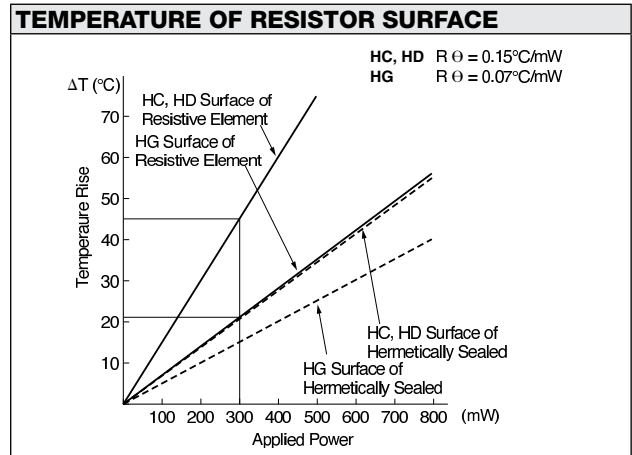
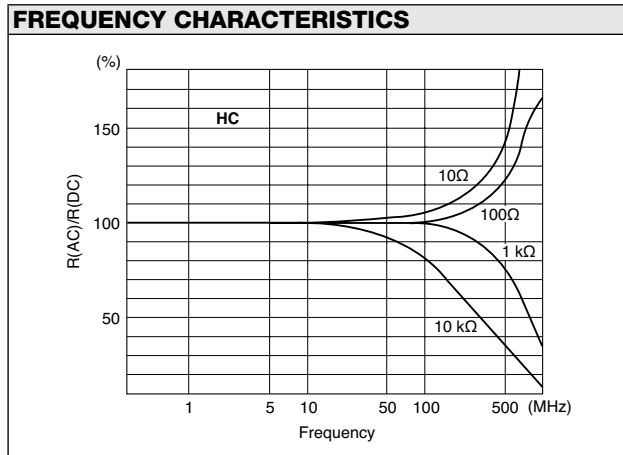
### FOUR-TERMINAL (KELVIN) CONNECTION

For low ohmic resistor (less than 10 ohm), the resistance value and TCR of the copper lead increases overall resistance value. Four-terminal (Kelvin) connection is recommended per the following figure. Loading current at voltage and current terminals (V, I) causes measurement error.

Four-Terminal Resistor



<b>PERFORMANCE</b>			
Parameters	Test Condition	MIL-PRF-55182/9 Specification	ALPHA Typical Test Data
Maximum Rated Operating Temperature Working Temperature Range Maximum Working Voltage			125°C -65°C to +150°C 300V
Power Conditioning Thermal Shock Overload	125°C, Rated Power, 100 hrs. -65°C/30 min. ↔ +150°C/30 min., 5 cycles Rated Voltage x 6.25, 5 sec.	±(0.20% +0.01%) ±0.05% ±0.05%	±0.0025% ±0.0025% ±0.0025%
Solderability	Steam Aging 8 hrs., 245°C, 5 sec.	over 95% coverage	
Resistance to Solvents	① Isopropyl Alcohol + Mineral Spirits ② Water + Butyl Cellosolve + Monoethanolamine	no damage	
Low Temperature Storage Low Temperature Operation Terminal Strength	-65°C, 24 hrs. -65°C Rated Voltage, 45 min. 0.908 kg (2 pounds), 10 sec.	±0.05% ±0.05% ±0.02%	±0.0025% ±0.0025% ±0.001%
Dielectric Withstanding Voltage Insulation Resistance Resistance to Soldering Heat Moisture Resistance	Atom. Pres.: 300V rms. Baro. Pres. 8 mHg: 200V rms. DC 100V, 2 min. 260°C, 10 sec. ±2 sec. +65°C to -10°C, 90% RH to 98% RH, Rated Voltage, 10 cycles (240 hrs.)	±0.02% over 10,000 MΩ ±0.02% ±0.05%	±0.0025% over 10,000 MΩ ±0.0025% ±0.0025%
Shock (Specified Pulse) Vibration, High Frequency	100G, 6 ms, Sawtooth Wave, X, Y, Z, each 10 shocks 20G, 10 Hz to 2,000 Hz to 10 Hz, 20 min., X, Y, each 4 hrs.	±0.01% ±0.02%	±0.0025% ±0.0025%
Life	125°C, Rated Power, 1.5 hr. – ON, 0.5 hr. – OFF, 2,000 hrs.	±0.05%	±0.01%
70°C Power Rating	70°C, Rated Voltage x 2, 1.5 hrs. – ON, 0.5 hr. – OFF, 2,000 hrs.	±0.05%	±0.01%
Storage Life	15°C to 35°C, 15% RH to 75% RH, No Load, 10,000 hrs.	±0.005%	±0.0005%
High Temperature Exposure	175°C, No Load, 2,000 hrs.	±0.5%	±0.01%
Current Noise		-32 dB	-42 dB
Voltage Coefficient		0.0001%/V	0.00003%/V
Thermal EMF		1.0 μV/°C	0.1 μV/°C



**PRECAUTION IN USING HC, HD OR HG RESISTORS**

When soldering to mount HC, HD or HG on a board, keep the resistor over 10 mm away from the board surface by using an insulating tube.