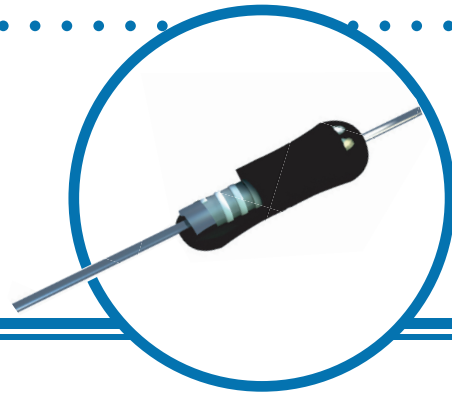


# Ultra Precision Metal Film Resistor

## CAR Series

- RoHS Compliant
- Low noise, high reliability
- Non standard values available
- Superior moisture performance
- Ultra low temperature coefficient
- Highest stability metal film available
- Matched sets and networks available



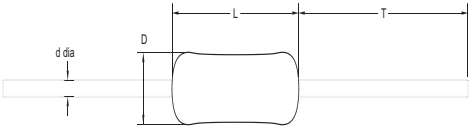
## Electrical Data

Commercial	CAR5	CAR6	CAR7
Power Rating @ 70°C (W)	0.25	0.33	0.50
Power Rating @ 85°C (W)	0.125	0.25	0.25
Resistance Range (Ω)	10R0-3M00	10R0-5M00	10R0-10M0
Rated Operating Voltage (not to exceed $\sqrt{PxR}$ (V)	250	350	500
TCR (ppm/°C)	V = ±5, T = ±10, Y = ±15, D = ±25, C = ±50		
Resistance Tolerance (%)	L = ±0.01, P = ±0.02, W = ±0.05, B = ±0.10, C = ±0.25, D = ±0.50, F = ±1.0		
Thermal Impedance (°C/W)	110	70	55
Operating Temperature Range	-20°C to +85°C		

## Manufacture Capabilities Data

TCR (±ppm/°C)	CAR5			CAR6			CAR7		
	0.01-0.02%	0.05%	0.10-0.1%	0.01-0.02%	0.05%	0.10-0.1%	0.01-0.2%	0.5%	0.10-1.0%
5	50R-250K	10R-250K	10R-300K	50R-500K	10R-500K	10R-500K	50R-1M0	10R-1M0	10R-1M0
10	50R-250K	10R-250K	10R-350K	50R-500K	10R-500K	10R-700K	50R-1M0	10R-1M0	10R-1M5
15	50R-250K	10R-250K	10R-500K	50R-500K	10R-500K	10R-1M0	50R-1M0	10R-1M0	10R-3M5
25	50R-250K	10R-250K	10R-1M5	50R-500K	10R-500K	10R-3M0	50R-1M0	10R-1M0	10R-5M0
50	50R-250K	10R-250K	10R-3M0	50R-500K	10R-500K	10R-5M0	50R-1M0	10R-1M0	10R-10M

## Physical Data

Dimensions (mm) and Weight (g)								
Type	L max	D max	T Min	D Nom	PCB Mounting Centers	Min Bend Radius	Wt Nom	
CAR5	7.2	2.5	30	0.6	10.2	0.6	0.24	
CAR6	10.0	3.7	30	0.6	12.7	0.6	0.40	
CAR7	15.5	5.5	30	0.8	18.4	1.2	1.15	

### General Note

IRC reserves the right to make changes in product specification without notice or liability. All information is subject to IRC's own data and is considered accurate at time of going to print.

# Ultra Precision Metal Film Resistor

## Performance Data

	CAR 5 and 6 < 500KΩ		CAR 5 and 6 > 500KΩ	
	CAR 7 < 1MΩ		CAR 7 > 1MΩ	
	Maximum Typical		Maximum Typical	
<b>1000 Hour Load Life</b> 0.125 W at 85°C 0.250 W at 70°C	±0.05%	±0.02%	±0.25%	±0.05%
	±0.05%	±0.02%	±0.25%	±0.05%
<b>Short-time Over Load</b> <b>Resistance To Solder</b> <b>High Temp Exposes</b>	±0.01%	±0.001%	±0.08%	±0.01%
	±0.02%	±0.003%	±0.05%	±0.005%
		±0.08%		0.2%
<b>Thermal Shock</b> <b>Noise</b> <b>Voltage Coefficient</b>	±0.04%	±0.02%	±0.25%	±0.05%
		0.03uV/V <0.05 ppm/V		0.01uV/V <0.1 ppm/V
<b>Moisture</b> <b>Vibration</b>	±0.04%	±0.02%	±0.20%	±0.05%
	±0.02%	±0.002%	±0.06%	±0.02%
<b>Climatic Category</b>	55/155/56		55/155/56	
<b>Shelf Life (12 Month)</b>	±0.003%		±0.02%	
<b>Power Derating</b>	100% rated power from 0°C to 70°C derated linearly to 0% rated power from 70°C to 155°C			

## Manufacturing Notes

Resistors can be supplied matched for tolerance to ±0.005% and TCR down to ±1ppm/°C, either as separate resistors or preassembled and encapsulated within a plastic box.

The individual resistors within a set or module can be manufactured with a tolerance of ±0.01% and a TCR of ±5ppm/°C.

## Packaging Data

The standard packaging is loose in boxes. Taped resistors (on reel or in ammo pack) can also be supplied by special request. A detail taping specification is available on request.

## Standard Quantities

Type	CAR 5	CAR 6	CAR 7
Bulk	250	125	50
Ammo	1000	1000	N/A
Reel	1000	2500	N/A

## Ordering Data

Specify type reference etc. as indicated in this example of CAR5LF 6.8KΩ 0.1% 50ppm/°C

