

# watts electronics private limited

## LOW OHM METAL ALLOY CHIP RESISTOR

### INTRODUCTION:

The LR series metal alloy low ohm chip resistors are manufactured with tight tolerance, low TCR, high power density and low thermal EMF capability.

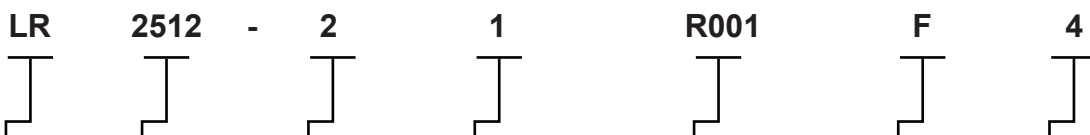
### SPECIFICATIONS:

Type	# of Terminals	Max. Rated Power	Max. Rated Current	Max. Overload Current	T.C.R. (ppm/°C)	Resistance Range (mΩ)		Operating Temperature Range
						D (±0.5%)	F (±1%); G (±2%); J (±5%)	
LR0805	2	0.5W	10A	20A	< ± 75	--	5.0~20.0	-55~+150°C
LR1206	2	0.5W	40.82A	81.64A	0.3m Ω: < ± 450 0.5~0.9m Ω: < ±175 1.0~15.0m Ω: < ±75 15.1~50.0m Ω: < ±50	7.0~50.0	0.3~50.0	-55~+170°C
		1W	57.74A	115.47A	0.3m Ω: < ±450 0.5~0.9m Ω: < ±175 1.0~15.0m Ω: < ±75 15.1~50.0m Ω: < ±50	7.0~50.0	0.3~50.0	
		1.5W	70.71A	141.42A	0.3m Ω: < ±450 0.5~0.9m Ω: < ±175 1.0m Ω: < ±75	--	0.3~1.0	
LR2010	2	1W	44.72A	89.44A	0.5~0.9 m Ω: < ±100 1.0~1.9m Ω: < ±75 2.0~6.9m Ω: < ±50 7.0~100m Ω: < ±25	7.0~49	0.5~100	-55~+170°C
LR2512	2	1W	57.74A	129.10A	0.3m Ω: < ±150 0.5~1.0m Ω: < ±75 1.1~3.0m Ω: < ±50 3.1~100m Ω: < ±25	7.0~50	0.3~100	
		1.5W	70.71A	158.11A	0.3m Ω: < ±150 0.5~1.0m Ω: < ±75 1.1~3.0m Ω: < ±50 3.1~75m Ω: < ±25	7.0~50	0.3~75.0	
		2W	81.65A	182.57A	0.3m Ω: < ±150 0.5~1.0m Ω: < ±75 1.1~3.0m Ω: < ±50 3.1~75m Ω: < ±25	7.0~50	0.3~10.0	
LR2512	2	3W	100.00A	173.21A	0.3m Ω: < ±150 0.5~1.0m Ω: < ±75 1.1~2.5m Ω: < ±50 2.6~10.0m Ω: < ±25	7.0~10.0	0.3~10.0	

## SPECIFICATIONS: Cont.

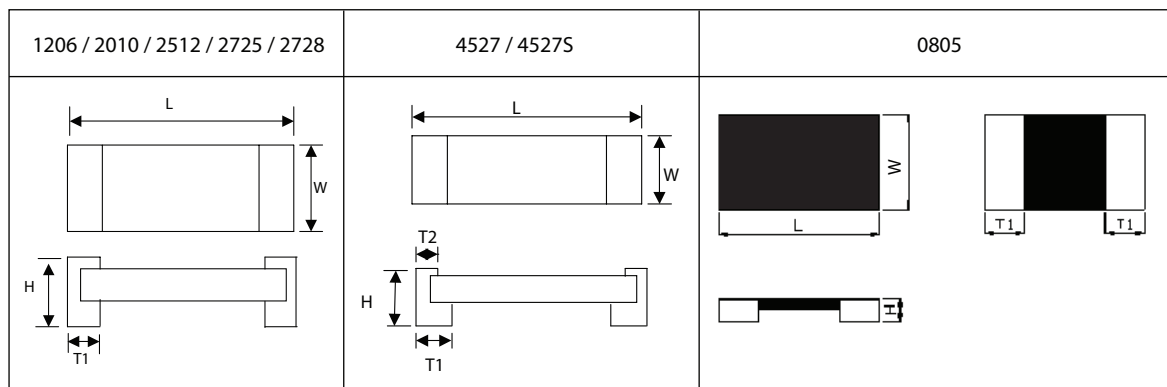
Type	# of Terminals	Max. Rated Power	Max. Rated Current	Max. Overload Current	T.C.R. (ppm/°C)	Resistance Range (mΩ)		Operating Temperature Range
						D (±0.5%)	F (±1%); G (±2%); J (±5%)	
LR2725	2	4W	126.49A	252.95A	0.20m Ω: < ±100 0.25~3.0m Ω: < ±50	--	0.20~3.0	-55~170°C
LR2728		3W	27.39A	47.43A	4.0~100m Ω: < ±25	4.0~19.0	4.0~100	
		3.5W	29.58A	51.23A	4.0~100m Ω: < ±25	4.0~19.0	4.0~100	
		4W	31.62A	63.25A	4.0~ 50.0m Ω: < ±25	4.0~19.0	4.0~50.0	
LR4527S (without heat sink)		3W	77.5A	134A	0.5~1.0m Ω: < ±75 1.1~20m Ω: < ±50	7.0 ~20	0.5~20	
LR4527		5W	100A	173A	0.5~1.0m Ω: < ±75 1.1~200m Ω: < ±50	7.0 ~120	0.5~200	

## EXPLANATION OF ORDERING CODE



Type	Size (inch)	Number of Terminals	Rated Power	Resistance (4~6 Digits)	Tolerance	Packaging
LR: Low Ohm Metal Alloy Chip Resistor	0805 1206 2010 2512 2725 2728 4527 4527S	2: 2 terminals	C=0.5W 1=1.0W A=1.5W 2=2.0W 3=3.0W B=3.5W 4=4.0W 5=5.0W	EX: R001 = 1m Ω R010 = 10m Ω R100 = 100m Ω R00025 = 0.25m Ω	D=± 0.5% F=± 1.0% G=± 2.0% J=± 5.0%	A=500pcs 1=1,000pcs 2=2,000pcs 4=4,000pcs

## DIMENSIONS:



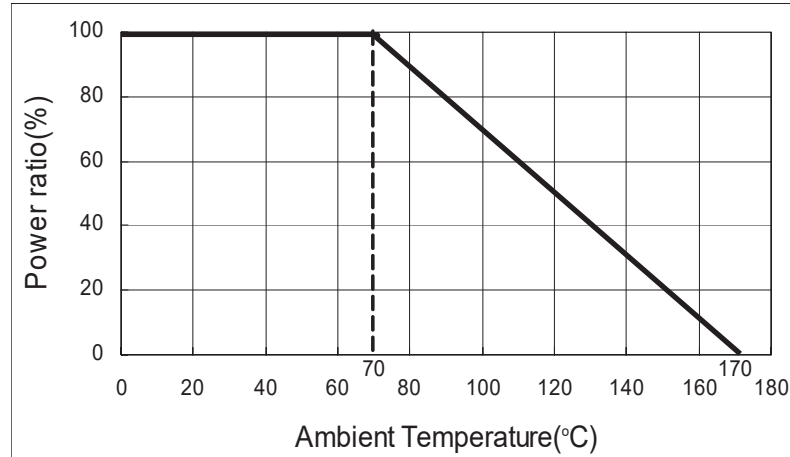
Type	Maximum Power Rating (Watts)	Resistance Range (m Ω)	Dimensions - in inches (millimeters)				
			L	W	H	T1	T2
LR0805	0.5	5 ~ 20	0.08±0.008 (2.032±0.20)	0.05±0.008 (1.270±0.20)	0.012±0.002 (0.30±0.05)	0.020±0.008 (0.50±0.20)	
LR1206	0.5 & 1.0	0.3	0.126±0.010 (3.200±0.254)	0.063±0.010 (1.600±0.254)	0.039±0.010 (1.000±0.254)	0.022±0.010 (0.550±0.254)	
		0.5~0.6			0.029±0.010 (0.725±0.254)		
		1.0			0.025±0.010 (0.645±0.254)	0.020±0.010 (0.508±0.254)	
		2.0 ~ 4.0			0.022±0.010 (0.545±0.254)	0.024±0.010 (0.600±0.254)	
		5.0				0.020±0.010 (0.508±0.254)	
	6.0 ~ 50.0	0.022±0.010 (0.550±0.254)					
	1.5	0.3			0.039±0.010 (1.000±0.254)	0.022±0.010 (0.550±0.254)	
		0.5~0.6			0.029±0.010 (0.725±0.254)		
1.0		0.025±0.010 (0.645±0.254)	0.020±0.010 (0.508±0.254)				
LR2010	1.0	0.5 ~ 0.9	0.200±0.010 (5.080±0.254)	0.100±0.010 (2.540±0.254)	0.031±0.010 (0.787±0.254)	0.057±0.010 (1.440±0.254)	
		1.0 ~ 3.0			0.025±0.010 (0.645±0.254)	0.051±0.010 (1.295±0.254)	
		3.1 ~ 4.0				0.031±0.010 (0.787±0.254)	
		4.1 ~ 100.0					
LR2512	1.0 & 1.5	0.3	0.246±0.010 (6.248±0.254)	0.126±0.010 (3.202±0.254)	0.040±0.010 (1.000±0.254)	0.079±0.010 (2.02±0.254)	
		0.5 ~ 3.0			0.031±0.010 (0.787±0.254)	0.074±0.010 (1.880±0.254)	
		3.1 ~ 4.0			0.025±0.010 (0.645±0.254)	0.044±0.010 (1.118±0.254)	
		4.1 ~ 75.0			0.025±0.010 (0.645±0.254)	0.034±0.010 (0.868±0.254)	
		75.1 ~ 100.0			0.040±0.010 (1.000±0.254)	0.079±0.010 (2.02±0.254)	
	2.0	0.3			0.031±0.010 (0.787±0.254)	0.074±0.010 (1.880±0.254)	
		0.5 ~ 3.0					

## DIMENSIONS: Cont.

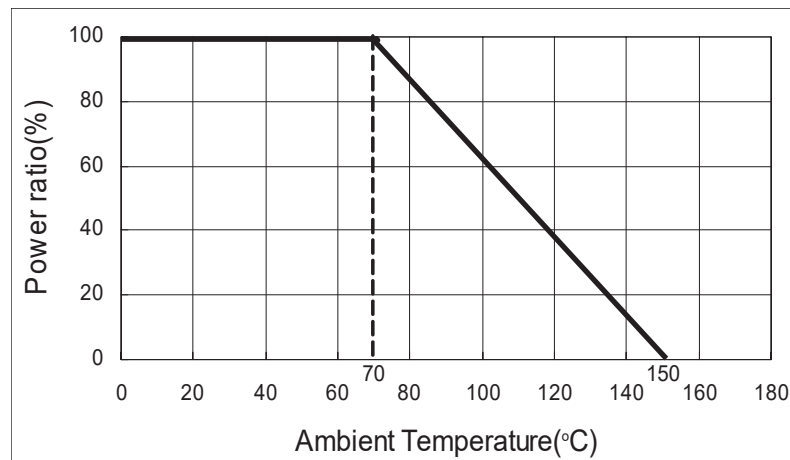
Type	Maximum Power Rating (Watts)	Resistance Range (m Ω)	Dimensions - in inches (millimeters)				
			L	W	H	T1	T2
LR2512	2.0	3.1 ~ 4.0	0.246±0.010 (6.248±0.254)	0.126±0.010 (3.202±0.254)	0.031±0.010 (0.787±0.254)	0.074±0.010 (1.880±0.254)	
		4.1 ~ 75.0			0.0254±0.010 (0.645±0.254)	0.044±0.010 (1.118±0.254)	
	3.0	0.3			0.040±0.010 (1.000±0.254)	0.079±0.010 (2.02±0.254)	
		0.5			0.031±0.010 (0.787±0.254)	0.074±0.010 (1.880±0.254)	
		0.6 ~ 2.9				0.044±0.010 (1.118±0.254)	
		3.0 ~ 4.0			0.066±0.010 (1.676±0.254)		
		4.1 ~ 10.0			0.025±0.010 (0.645±0.254)	0.044±0.010 (1.118±0.254)	
LR2725	4.0	0.20 ~ 0.50	0.268±0.010 (6.807±0.254)	0.254±0.010 (6.452±0.254)	0.039±0.010 (0.991±0.254)	0.085±0.010 (2.159±0.254)	
		0.60			0.043±0.010 (1.092±0.254)	0.071±0.010 (1.803±0.254)	
		1.0				0.085±0.010 (2.159±0.254)	
		1.5			0.039±0.010 (0.991±0.254)	0.071±0.010 (1.803±0.254)	
		2.0			0.035±0.010 (0.889±0.254)		
		2.25~2.5				0.051±0.010 (1.295±0.254)	
		3.0					
LR2728	3.0, 3.5 & 4.0	4.0~100.0	0.264±0.010 (6.706±0.254)	0.283±0.010 (7.188±0.254)	0.039±0.010 (0.991±0.254)	0.045±0.010 (1.143±0.254)	
LR4527S (without heat sink)	3.0	0.5	0.450±0.010 (11.430±0.254)	0.270±0.010 (6.850±0.254)	0.055±0.010 (1.400±0.254)	0.127±0.010 (3.215±0.254)	0.038±0.010 (0.965±0.254)
		0.6 ~ 3.0				0.071±0.010 (1.815±0.254)	
		4.0 ~ 5.0					
		5.1 ~ 20					
LR4527	5.0	0.5	0.450±0.010 (11.430±0.254)	0.270±0.010 (6.850±0.254)	0.059±0.010 (1.500±0.254)	0.127±0.010 (3.215±0.254)	0.038±0.010 (0.965±0.254)
		0.6 ~ 3.0					
		4.0 ~ 5.0					
		5.1 ~ 200				0.071±0.010 (1.815±0.254)	

## POWER DERATING CURVE:

For 1206, 2010, 2512, 2725, 2728, 4527 & 4527S at operating temperature of -55~+170°C.



For 0805 at operating temperature of -55~+150°C.



## MARKING:

All products except 0805 the marking are 4 digits.

For 1206, 2010, 2512, 2725, 2728, 4527 & 4527S resistance is indicated by using two marking notation styles

1. "R" designates the decimal location in Ohms. Example:
  - For 1mΩ product marking is R001
  - For 25mΩ product marking is R025
  - For 100mΩ product marking is R100
2. "m" designates the decimal location in milliohms. Example:
  - For 0.25mΩ product marking is 0m25
  - For 5.5mΩ product marking is 5m50
  - For 25.5mΩ product marking is 25m5

For 0805 no marking is done.