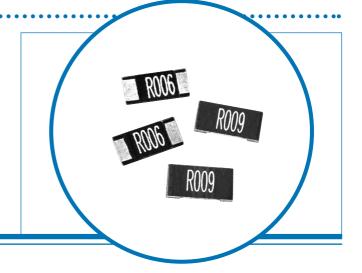
Metal Strip Current Sense Resistors Surface Mount



ULR Series

- 1 watt to 3 watts, all 2512 size
- Resistance R0005 (0.5mΩ) to R01 (10mΩ)
- Low TCR, Low inductance
- Designed for current sensing in power electronic systems
- RoHS compliant



Electrical Data

		ULR1	ULR2	ULR25	ULR3
Power rating at 80°C	watts	1.0	2.0	2.5	3.0
Resistance range 1	ohms	R0005 to R007	R0005 to R01	R0035 to R006	R0005 to R003
Isolation voltage	volts	200V	200V	200V	200V
TCR	ppm/°C	50, 75, 100, 150 See table below	50	50	50, 75, 100 See table below
Resistance Tolerance	%		1(F), 5(J)	
Protective coating ²		Black	Green/ Black	Green	Green
Standard Values			See table below	for available values	
Ambient temperature range	°C		-55 t	o +170	

Note 1: For values above ORO1 refer to our LR / LRF Series

Note 2: Colour of coating relates to solder process suitability, see Construction

Standard Values Available (non-standard values may be available to order - consult factory)

Value	UL	ULR1		ULR2		ULR25		ULR3	
	Colour	TCR	Colour	TCR	Colour	TCR	Colour	TCR	
R0005	Black	50	Black	50			Green	100	
R00075	Black	50	Black	50			Green	100	
R001	Black	50	Black	50			Green	50	
R0015	Black	50	Black	50			Green	50	
R002	Black	50	Black	50			Green	50	
R0025	Black	150					Green	75	
R003	Black	150					Green	75	
R0035	Black	150			Green	50			
R004	Black	100			Green	50			
R0045	Black	100			Green	50			
R005	Black	100			Green	50			
R0055	Black	100			Green	50			
R006	Black	75			Green	50			
R007	Black	75	Green	50					
R008			Green	50					
R009			Green	50					
R01			Green	50					

General Note

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



Metal Strip Current Sense Resistors Surface Mount

ULR Series



Construction

Black type

A low TCR resistance alloy plate, with plated connection bands is protectively coated and numerically marked with the resistance value. This part has standard plated end connections and is suitable for wave or IR reflow soldering.

Green type

A low TCR resistance alloy plate is grooved to set the final resistance, the lower faces are solder plated for connections, and it is protectively coated and numerically marked with the resistance value. This part is ONLY suitable for IR reflow soldering.

Marking

For values which are integer numbers of milliohms, the marking is 4-character IEC62 code; e.g. "R002" for $2m\Omega$, "R010" for $10m\Omega$. For values including fractions of a milliohm the marking is 3 or 4-character code using "M" to indicate the decimal point, e.g. "M75" for $0.75m\Omega$, "1M50" for $1.5m\Omega$.

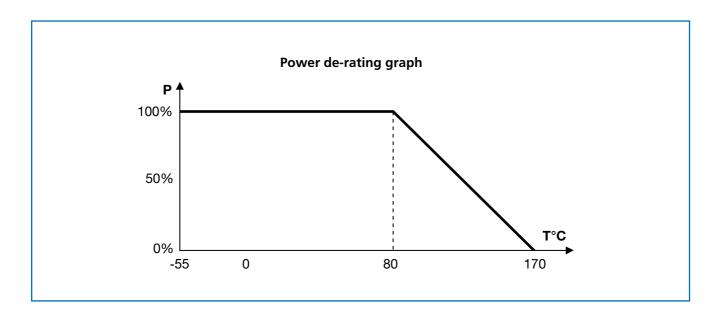
Termination Details:

MaterialMatt tin plated finish over a barrier layerSolderability95% min coverage (MIL-STD 202F / 208H, 235°C 2 secs)

Performance Data

Sn Plated Finish Cn Plating Protective Coating Cn Plate
Black Type
Black type
Protective Coating Metal Strip Sn Plated Finish Green Type

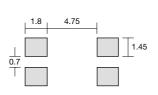
		Maximum
Load at rated power (1000hrs cyclic load at 70°C)	∆R%	$\pm 1\% + 0.5 m\Omega$ (Black): $\pm 1\%$ (Green)
De-rating from rated power at 80°C		See Graph
Short term overload (5 x rated power for 5s)	∆R%	$\pm 0.5\% + 0.5m\Omega$ (Black): $\pm 1\%$ (Green)
Dry heat (96Hrs, no load, +155°C)	∆R%	$\pm 1\% + 0.5 m\Omega$ (Black): $\pm 1\%$ (Green)
Temperature rapid change (-55 / +150°C, 100 cycles)	∆R%	$\pm 0.5\% + 0.5m\Omega$ (Black): $\pm 1\%$ (Green)
Resistance to solder heat (260°C for 10s)	∆R%	$\pm 0.5\% + 0.5m\Omega$ (Black): $\pm 1\%$ (Green)

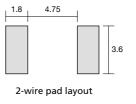


© Welwyn Components Limited Bedlington, Northumberland NE22 7AA, UK Telephone: +44 (0) 1670 822181 · Facsimile: +44 (0) 1670 829465 · Email: info@welwyn-tt.com · Website: www.welwyn-tt.com ULR Series



Recommended Solder Pad Layout





4-wire pad layout (recommended for precision current sensing)

Dimensions (mm)

Туре	Values (mΩ)	L	w	т	D	Nom. Wt. (g)
Green	$0.5 \mathrm{m}\Omega$, $0.75 \mathrm{m}\Omega$	6.35	3.18	1.00	1.93	0.09
Green	1mΩ to 10mΩ	6.35	3.18	0.60	1.93	0.08
Black	$0.5 \text{m}\Omega$	6.35	3.18	1.40	1.30	0.06
Black	$0.75 \mathrm{m}\Omega$	6.35	3.18	1.00	1.30	0.06
Black	1mΩ	6.35	3.18	0.80	1.30	0.06
Black	1.5m Ω	6.35	3.18	0.65	1.30	0.06
Black	2mΩ	6.35	3.18	0.50	1.30	0.06
Black	$2.5 \text{m}\Omega$	6.35	3.18	1.00	1.30	0.06
Black	3mΩ	6.35	3.18	0.70	1.30	0.06
Black	$3.5 \text{m}\Omega$	6.35	3.18	0.71	1.30	0.06
Black	4mΩ	6.35	3.18	0.60	1.30	0.06
Black	$4.5 \text{m}\Omega$	6.35	3.18	0.58	1.30	0.06
Black	$5 m \Omega$	6.35	3.18	0.50	1.30	0.06
Black	$5.5 \text{m}\Omega$	6.35	3.18	0.47	1.30	0.06
Black	$6 m \Omega$	6.35	3.18	0.50	1.30	0.06
Black	$7 \text{m}\Omega$	6.35	3.18	0.45	1.30	0.06

Flammability

The resistor will not burn or emit incandescent particles under any condition of applied temperature or overload.

Solvent resistance

The body protection and marking are resistant to all normal industrial solvents suitable for printed circuits.

Packaging

The standard packing for ULR parts is on a 2000 piece reel of size 12mm tape

Ordering Procedure

Example: ULR2 at 2.5 milliohms and 1% tolerance on reel of 2000 pieces:

