

## Low Value Current Sense Surface Mount Chip Resistors

### LRCS / LVC Series

- 0402, 0603 and 0805 sizes  
(larger sizes refer to our LRF Series)
- Resistance R020 (20mΩ) to 1R0 (1000mΩ)
- Designed for current sensing in power electronic systems
- RoHS compliant



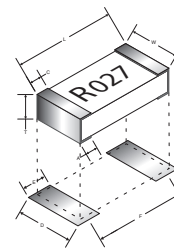
All parts are Pb-free and comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

### Electrical Data

		LRCS/LVC0402	LRCS/LVC0603	LRCS/LVC0805
Power rating @70°C	watts	0.063	0.1	0.125: R02 to <R10 0.25: R10 to 1R0
Resistance Range	ohms	R05 to 1R0	R02 to 1R0	R02 to 1R0
Isolation voltage	volts	50V	100V	200V
TCR	ppm/°C	±400: R05- R10 ±300: R101- R50 ±200: R501- 1R0	±600: R02- R05 ±400: R051- R10 ±300: R101- R50 ±200: R501- 1R0	±600: R02- R05 ±400: R051- R10 ±300: R101- R50 ±200: R501- 1R0
Resistance tolerance	%	1(F), 5(J)		
Standard values		E24 preferred		
Ambient temperature range	°C	-55 to +155		

### Physical Data

	Dimensions (mm) & weight (mg)									
	L	W	T	C	A	Weight	D	E	F	
LRCS/LVC 0402	1 ±0.05	0.5 ±0.05	0.32 ±0.10	0.25 ±0.10	0.2 ±0.10	0.7	0.65	0.65	0.9	
LRCS/LVC 0603	1.6 ±0.10	0.8 ±0.10	0.45 ±0.10	0.3 ±0.20	0.3 ±0.20	2.0	1	0.9	1.6	
LRCS/LVC 0805	2 ±0.15	1.25 ±0.15	0.55 ±0.10	0.3 ±0.20	0.4 ±0.25	5.3	1.4	0.95	2	



### Construction

A resistor element is applied to an alumina substrate. The product is adjusted to the value and protected. Marking is applied to 0603 and 0805 sizes. A wraparound conductor is applied to join the top and bottom sides. The terminations are electroplated with a Ni barrier layer prior to plating with a Sn finish.

### Solvent Resistance

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

### Flammability

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

### Solderability

95% min coverage (MIL-STD 202F / 208H, 235C 2 secs)

### General Note

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L RCS / LVC Series

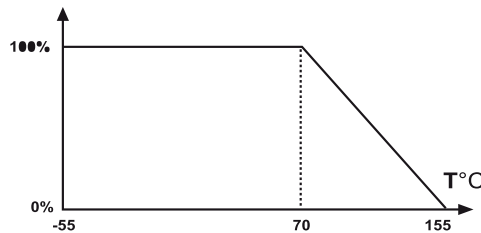
**Marking**

The LRCS0402 is not marked, the LRCS0603 is marked with 3 digits and LRCS0805 with 4 digits.  
e.g. 100mΩ is marked as R10 (3digit) and R100 (4digit) and 35mΩ is marked as 035 (3digit) or R035 (4digit)

**Performance Data**

	ΔR%	Maximum
Load at rated power (1000hrs cyclic load at 70°C)	ΔR%	±1% + 0.05Ω
De-rating from rated power at 70°C		See Graph
Short term overload (6.25 x rated power for 5s)	ΔR%	±0.5% + 0.05Ω ±1% + 0.05Ω(0.25W LRCS0805 rating)
Dry heat (96Hrs, no load, +155°C)	ΔR%	±0.5% + 0.05Ω
Temperature rapid change (-55 / +150°C, 100 cycles)	ΔR%	±0.5% + 0.05Ω
Damp heat steady state	ΔR%	±0.5% + 0.05Ω
Resistance to solder heat (260°C for 10s)	ΔR%	±0.5% + 0.05Ω
Low Temperature Operation	ΔR%	±0.5% + 0.05Ω
Insulation Resistance (100V, 60s)		>1000MΩ

**Power de-rating graph**



**Packaging**

The standard packing for LRCS parts is on 8mm wide paper tape wound on 178mm diameter reels.

**Ordering Procedure**

This product has two valid part numbers:

**European (Welwyn) Part Number: LRCS0603-R027FT5** (0603, 27 milliohms ±1%, Pb-free)

L	R	C	S	0	6	0	3	-	R	0	2	7	F	T	5
1		2		3			4	5							

1	2	3	4	5		
Type	Size	Value	Tolerance	Packing		
LRCS	0402	E24 = 3/4 characters	F = ±1%	Tape & reel		
	0603	R = ohms	J = ±5%	T10	0402	10,000/reel
	0805			T5	0603, 0805	5000/reel

**USA (IRC) Part Number: LVC-LVC0603LF-R027-F** (0603, 27 milliohms ±1%, Pb-free)

L	V	C	-	L	V	C	0	6	0	3	L	F	-	R	0	2	7	-	F
1		2		3			4		5			6							

1	2	3	4	5	6	Packing	
Family	Model	Size	Termination	Value	Tolerance		
LVC	LVC	0402	LF = Pb-free	E24 = 3/4 characters	F = ±1%	Tape & reel	
		0603		R = ohms	J = ±5%	0402	10,000/reel
		0805				0603, 0805	5000/reel

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