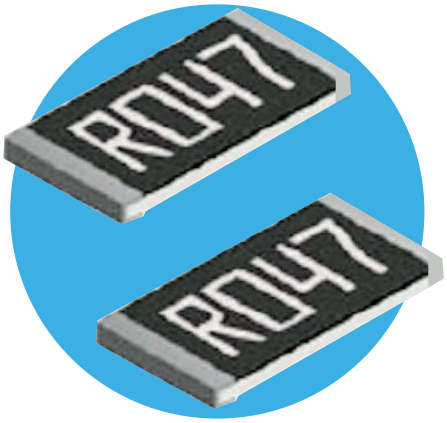
Low Value Current Sense Surface Mount Chip Resistors

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



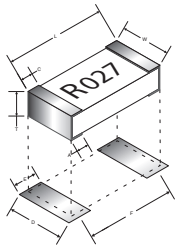
All parts are Pb-free and comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

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

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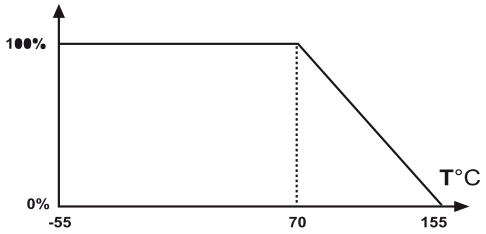
Marking

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

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

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Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

TT Electronics:

LVC0402LF-R150F LVC0805LF-R100F LVC0805LF-R050F LVC0805LF-R250F LVC0603LF-R050F LVC0402LF-R250F LVC0603LF-R030F LVC0402LF-R200F LVC0603LF-R250F LVC0603LF-1R00F LVC0805LF-R500F LVC0805LF-1R00F LVC0603LF-R200F LVC0402LF-R750F LVC0603LF-R060F LVC0603LF-R750F LVC0805LF-R750F LVC0805LF-R030F LVC0805LF-R060F LVC0603LF-R500F LVC0603LF-R100F LVC0603LF-R150F LVC0805LF-R150F LVC0402LF-R100F LVC0402LF-R500F LVC0805LF-R200F LRCS0603-R047FT5 LRCS0603-R33FT5 LRCS0603-R20FT5 LRCS0805-R33FT5 LRCS0805-1R0FT5 LRCS0603-R10FT5 LRCS0402-R20FT10 LRCS0603-R075FT5 LRCS0603-1R0FT5 LRCS0402-1R0FT10 LRCS0603-R50FT5 LRCS0805-R05FT5 LRCS0805-R50FT5 LRCS0603-R025FT5 LRCS0402-R05FT10 LRCS0603-R05FT5 LRCS0805-R10FT5 LRCS0402-R10FT10 LRCS0402-R39FT10 LRCS0402-R24JT10 LRCS0402-R33JT10 LRCS0402-R27FT10 LRCS0805-R39JT5 LRCS0805-R051FT5 LRCS0805-1R0JT5 LRCS0805-R16FT5 LRCS0805-R82FT5 LRCS0402-R051FT10 LRCS0603-R12FT5 LRCS0603-R13FT5 LRCS0603-R12JT5 LRCS0603-R30JT5 LRCS0805-R02FT5 LRCS0805-R33JT5 LRCS0805-R47JT5 LRCS0402-R062FT10 LRCS0603-R091JT5 LRCS0805-R022FT5 LRCS0805-R075FT5 LRCS0805-R12FT5 LRCS0402-R075FT10 LRCS0603-R051FT5 LRCS0603-R27JT5 LRCS0603-R56JT5 LRCS0603-R82JT5 LRCS0603-R91JT5 LRCS0805-R47FT5 LRCS0805-R51FT5 LRCS0805-R27JT5 LRCS0805-R047FT5 LRCS0805-R091FT5 LRCS0805-R051JT5 LRCS0603-R15FT5 LRCS0805-R03FT5 LRCS0805-R082FT5 LRCS0805-R036JT5 LRCS0603-R43JT5 LRCS0805-R20FT5 LRCS0402-R056FT10 LRCS0402-R068FT10 LRCS0805-R15JT5 LRCS0805-R18FT5 LRCS0805-R10JT5 LRCS0603-R11FT5 LRCS0805-R039JT5 LRCS0805-R30JT5 LRCS0805-R56FT5 LRCS0805-R027JT5 LRCS0805-R91JT5 LRCS0805-R16JT5 LRCS0603-R82FT5 LRCS0402-R68FT10 LRCS0402-R068JT10 LRCS0603-R027JT5