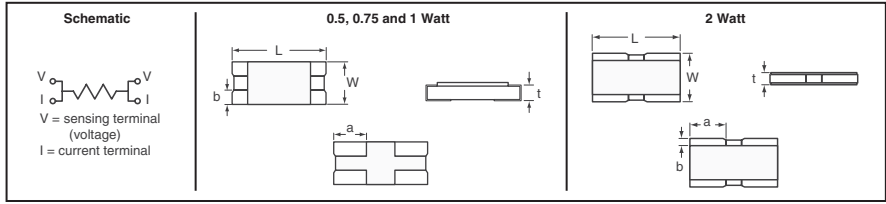


# OHMITE® Four Terminal High Precision Current Sense Resistors



Current Sense Resistors enable the measurement of current flow in a circuit by monitoring a voltage drop across a precisely calibrated resistance. The LVK chip features four terminals, also known as a "Kelvin" configuration. This configuration enables current to be applied through two opposite terminals and a sensing voltage to be measured across the other two terminals, eliminating the resistance and temperature coefficient of the terminals for a more accurate current measurement. Isolating the voltage and current terminals (see schematic) facilitates a very accurate current measurement. Ohmite's proprietary technology offers an excellent Temperature Coefficient of Resistance (TCR) even for very low resistance values. The resistive element consists of a durable, anti-corrosive reliable performance with the ability to withstand harsh environments.



**FEATURES:** • Working Temperature Range: -55°C - 200°C  
**SPECIFICATIONS:** • Operating Temperature Range: -40°C - 125°C

Series	Package Size	Power Rating (@70°C)	Resistance Range (Ω)	Temperature Coefficient (ppm/°C)	Dimensions - mm				
					L	W	t	a	b
LVK12	1206	0.5W	.01 - .05	50	3.2 ±0.2	1.6 ±0.2	0.5 ±0.15	1.0 ±0.2	0.55 ±0.2
LVK20	2010	0.75W	.01 - .05	50	5.0 ±0.2	2.5 ±0.2	0.5 ±0.15	1.7 ±0.2	0.9 ±0.2
LVK24	2412	1.0W	.01 - .05	50	6.4 ±0.2	3.2 ±0.2	0.5 ±0.15	2.1 ±0.2	1.2 ±0.2
LVK25	1224	2.0W	.001	300	3.2 ±0.2	6.4 ±0.2	0.5 ±0.2	0.4 ±0.2	2.7 ±0.2
	1224	2.0W	.002 - .004	200	3.2 ±0.2	6.4 ±0.2	0.5 ±0.2	0.4 ±0.2	2.7 ±0.2
	1224	2.0W	.005 - .01	100	3.2 ±0.2	6.4 ±0.2	0.5 ±0.2	0.4 ±0.2	2.7 ±0.2

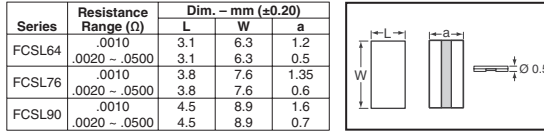
LVK12()DER .5% Resistance Value Chart		LVK12()FER 1% Resistance Value Chart		LVK20()DER .5% Resistance Value Chart		LVK20()FER 1% Resistance Value Chart		LVK24()DER .5% Resistance Value Chart		LVK24()FER 1% Resistance Value Chart		LVK25()FER 1% Resistance Value Chart
Value (Code)	Value (Code)	Value (Code)	Value (Code)	Value (Code)	Value (Code)	Value (Code)	Value (Code)	Value (Code)	Value (Code)	Value (Code)	Value (Code)	Value (Code)
.01 (R010)	.01 (R010)	.03 (R030)	.01 (R010)	.01 (R010)	.03 (R030)	.01 (R010)	.01 (R010)	.03 (R030)	.01 (R010)	.03 (R030)	.01 (R010)	.001 (R001)
.02 (R020)	.02 (R020)	.04 (R047)	.02 (R020)	.02 (R020)	.04 (R047)	.02 (R020)	.02 (R020)	.04 (R047)	.02 (R020)	.04 (R047)	.02 (R020)	.002 (R002)
.03 (R030)	.03 (R030)	.05 (R050)	.03 (R030)	.03 (R030)	.05 (R050)	.03 (R030)	.03 (R030)	.05 (R050)	.03 (R030)	.05 (R050)	.03 (R030)	.003 (R003)
.05 (R050)	.05 (R050)		.05 (R050)	.05 (R050)		.05 (R050)	.05 (R050)		.05 (R050)		.05 (R050)	.005 (R005)
												.01 (R010)

Series	Tolerance	Resistance Range (Ω)	Digi-Key Part No.†	Cut Tape Price Each			Digi-Key Part No.†	Tape and Reel Pricing 1,000	Ohmite Part No.†
				1	50	100			
LVK12	5%	.01 - .05	LVK12(Code)DERCT-ND	.60	.54	.48	LVK12(Code)DERTR-ND	358.49	LVK12(Code)DER
				.54	.49	.44			
LVK20	5%	.01 - .05	LVK20(Code)FERCT-ND	.99	.89	.79	LVK20(Code)DERTR-ND	597.48	LVK20(Code)DER
				.87	.78	.70			
LVK24	5%	.01 - .05	LVK24(Code)DERCT-ND	1.47	1.32	1.18	LVK24(Code)DERTR-ND	908.17	LVK24(Code)DER
				1.23	1.11	.98			
LVK25	1%	.001 - .01	LVK25(Code)FERCT-ND	1.77	1.59	1.42	LVK25(Code)FERTR-ND	1063.51	LVK25(Code)FER

† For complete part number, substitute the code from Resistance Value Charts for (Code).

## FCSL Series – Metal Foil Current Sense

FCSL incorporates proven metal foil technology to produce the ultimate in a current sense resistor. FCSL features the effective combination of very low and stable TCRs (Temp. Coefficient of Resistance) available in a wide selection of very low ohmic values. Power ratings up to 4W make FCSL the ideal choice for current sensing applications. **Features:** • Foil Construction ensures stable TCR • Designed for automatic insertion • Industry standard sizes • High heat resistant use • Low heat electromotive use • Max. Temp. for Rated Power: 70°C • Operating Temp. Range: -55°C - 155°C • Rated Voltage: √(Rated power x Resistance value) V • Rush Current: Rated current 10 msec. ON, 60 sec OFF, 10 cycles, Max. ΔR: ±(1.0%+0.0005Ω)



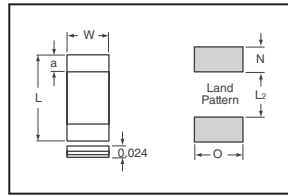
FCSL64, FCSL76 and FCSL90 Series Resistance Value Chart	
Value (Code)	Value (Code)
.0010 (R001)	.0100 (R010)
.0020 (R002)	.0250 (R025)
.0050 (R005)	.0500 (R050)

Series	Power Rating	Rush Power (10 msec.)	Max. Current (A)	Tolerance (%)	Temperature Coefficient (ppm/°C)	Resistance Range (Ω)	Digi-Key Part No.†	Cut Tape Price Each			Digi-Key Part No.†	Tape and Reel Pricing 1,000	Ohmite Part No.†
								1	50	100			
FCSL64	2W	225W	150	±5	150	.0010	FCSL64R001JERCT-ND	.90	.81	.72	FCSL64R001JERTR-ND	513.83	FCSL64R001JER
								.81	.72	.63			
FCSL76	3W	325W	180	±2	150	.0020	FCSL64R002GERCT-ND	.90	.81	.72	FCSL64R002GERTR-ND	513.83	FCSL64R002GER
								.81	.72	.63			
FCSL90	4W	440W	210	±1	50	.0050 - .0500	FCSL64(Code)FERCT-ND	.90	.81	.72	FCSL64(Code)FERTR-ND	513.83	FCSL64(Code)FER
								.81	.72	.63			

† For complete part number, substitute the corresponding code from Resistance Value Chart for (Code).

## MCS Series – Metal Element Current Sense 1 and 2 Watt

**Features:** • Flame-retardant epoxy protective coat (UL94-V0) • Long side electrode to satisfy the most demanding current-sense applications • Precision resistance alloy (NiCr20AlSi or CuMnNi) • Low inductance, low thermo EMF (<50µV/°C) • 1% Tolerance



MCS1632 and MCS3264 Series Resistance Value Chart	
Value (Code)	Value (Code)
.005 (R005)	.025 (R025)
.010 (R010)	.030 (R030)
.015 (R015)	.050 (R050)
.020 (R020)	

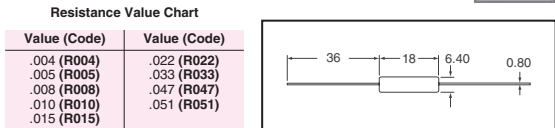
Series	Dimensions - mm (±0.02)				Solder Thickness (µm/w)	
	L	W	a	N		
MCS1632	3.20	1.60	0.50	1.50	1.00	105/1.0
MCS3264	6.40	3.20	1.00	2.00	4.20	105/2.0

Series	Power Rating (@70°C)	Resistance TCR (ppm/°C)			Digi-Key Part No.†	Cut Tape Pricing			Digi-Key Part No.†	Tape and Reel Qty.	Pricing	Ohmite Part No.†
		.005Ω	.010Ω	.015Ω - .050Ω		1	50	100				
MCS1632	1W	<200	<70	<40	MCS1632(Code)FERCT-ND	.39	17.67	31.42	MCS1632(Code)FERTR-ND	5000	224.44/M	MCS1632(Code)FER
MCS3264	2W	<200	<70	<40	MCS3264(Code)FERCT-ND	.45	20.20	35.91	MCS3264(Code)FERTR-ND	4000	295.13/M	MCS3264(Code)FER

† For complete part number, substitute the corresponding code from Resistance Value Chart for (Code).

## 14A Series – Alumina Body Current Sense

14AFR current sense resistors feature a high temperature ceramic body which affords the user higher power densities than similar products which utilize silicone based epoxy molding compounds. The internal construction involves a straight, low inductance, 3-piece welded metal element at 1% tolerance.



Power Rating (@70°C)	Digi-Key Part No.†	Price Each			Ohmite Part No.†
		1	10	100	
4W	14AF(Code)E-ND	2.22	1.49	1.13	14AF(Code)E

† For complete part number, substitute the corresponding code from Resistance Value Chart for (Code).

Digi-Reel® Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

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