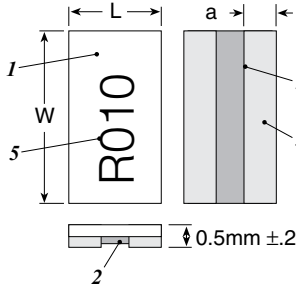


# FCSL Series

## Metal Foil Current Sense



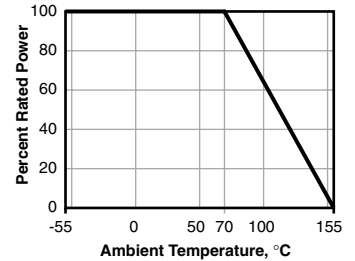
1. Alumina substrate
2. Resistive element (Ni-Cu Alloy)
3. Electrode (Ni, Sn)
4. Protective coating (Epoxy resin)
5. Marking (Epoxy resin)

Ohmite continues to add to its complement of Current Sense offerings with the FCSL Series. 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 (Temperature Coefficient of Resistance) available in a wide selection of very low ohmic values. Power ratings up to 4 Watts makes FCSL the ideal choice for your current sensing applications.

### FEATURES

- Foil Construction ensures a very stable TCR (Temperature Coefficient of Resistance)
- Designed for automatic insertion
- Industry standard sizes
- High heat resistant use
- Low heat electromotive use
- Color: white (top) and green (bottom)

### DERATING



Series	Power Rating	Resistance Range	Tol.	TCR (ppm/°C)	Dim. (in. ±.008/mm ±0.20)		
					L	W	a
FCSL64	2.0W	1mΩ	±5%	±150	0.122/3.1	0.248/6.3	0.047/1.2
		2mΩ	±2%	±100			0.020/0.5
		3mΩ ~ 50mΩ	±1%	±50			0.020/0.5
FCSL76	3.0W	1mΩ	±5%	±150	0.15/3.8	0.3/7.6	0.053/1.35
		2mΩ	±2%	±100			0.024/0.6
		3mΩ ~ 50mΩ	±1%	±50			0.024/0.6
FCSL90	4.0W	1mΩ	±5%	±150	0.177/4.5	0.35/8.9	0.063/1.6
		2mΩ	±2%	±100			0.028/0.7
		3mΩ ~ 50mΩ	±1%	±50			0.028/0.7

### ORDERING INFORMATION

RoHS Compliant

**FCSL64R005JE R**

Series	Package Size	Ohms	Tolerance	Taping Code
64=6432=2W	R005 = 0.005Ω	J = 5%	R = 1,000 pc/reel	
76=7638=3W	R050 = 0.050Ω	G = 2%		
90=9045=4W		F = 1%		

Check product availability at [www.ohmite.com](http://www.ohmite.com)

### PERFORMANCE CHARACTERISTICS

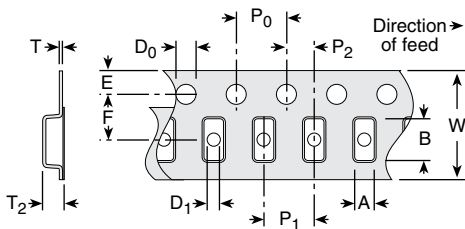
Test	Condition	Maximum ΔR
Max. temperature for rated power	70°C	
Operating temperature range	-55°C ~ +155°C	
Rated voltage	$\sqrt{(\text{Rated power} \times \text{Resistance value})}$ V	
Rush current	Rated current 10 msec ON, 60 sec OFF, 10 cycles*	±(1.0% + 0.0005Ω)
Rapid change of temperature	-55°C (30min.)/+155°C (30min.), 100 cycles	±(1.0% + 0.0005Ω)
Solderability	245°C ±5°C for 3 ±0.5 sec.	Min. 90% coverage
Endurance at 70°C	70°C ±3°C, Rated voltage 1.5h ON, 0.5h OFF, 1000h	±(1.0% + 0.0005Ω)
Resistance to soldering heat	260°C ±5°C for 10 ±1 sec.	±(0.5% + 0.0005Ω)
Moisture resistance	60°C ±2°C, 90-95% RH, Rated voltage 1.5h ON, 0.5h OFF, 1000h	±(2.0% + 0.0005Ω)

### STANDARD VALUES

Ohms	2 Watts	3 Watts	4 Watts	Tolerance	TCR
0.0010	FCSL64R001JE	FCSL76R001JE	FCSL90R001JE	±5%	±150ppm/°C
0.0020	FCSL64R002GE	FCSL76R002GE	FCSL90R002GE	±2%	±100ppm/°C
0.0050	FCSL64R005FE	FCSL76R005FE	FCSL90R005FE	±1%	±50ppm/°C
0.0100	FCSL64R010FE	FCSL76R010FE	FCSL90R010FE	±1%	±50ppm/°C
0.0250	FCSL64R025FE	FCSL76R025FE	FCSL90R025FE	±1%	±50ppm/°C
0.0500	FCSL64R050FE	FCSL76R050FE	FCSL90R050FE	±1%	±50ppm/°C

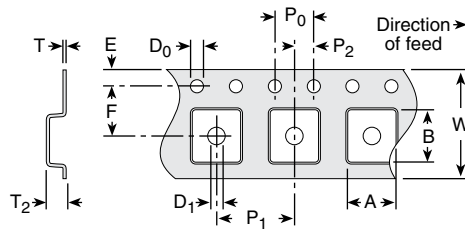
### PACKAGING SPECIFICATIONS

#### TAPE inches (mm)



FCSL64

A	0.135 (3.43 ±0.2)
B	0.261 (6.63 ±0.2)
W	0.472 (12.0 ±0.3)
E	0.069 (1.75 ±0.1)
F	0.217 (5.5 ±0.05)
P <sub>0</sub>	0.157 (4.0 ±0.1)
P <sub>1</sub>	0.157 (4.0 ±0.1)
P <sub>2</sub>	0.079 (2.0 ±0.05)
D <sub>0</sub>	0.059 (1.5 +0.1/-0)
D <sub>1</sub>	0.059 (1.5 +0.25/-0)
T	0.008 (0.2 ±0.05)
T <sub>2</sub>	0.059 (1.5 max.)

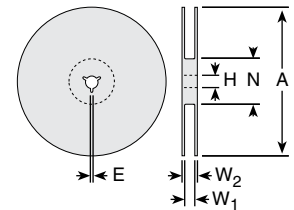


FCSL76

FCSL90

A	0.196 (4.98 ±0.1)	0.187 (4.75 ±0.1)
B	0.310 (7.88 ±0.1)	0.372 (9.45 ±0.1)
W	0.630 (16.0 +0.3/-0.1)	0.630 (16.0 +0.3/-0.1)
E	0.069 (1.75 ±0.1)	0.069 (1.75 ±0.1)
F	0.295 (7.5 ±0.1)	0.295 (7.5 ±0.1)
P <sub>0</sub>	0.157 (4.0 ±0.1)	0.157 (4.0 ±0.1)
P <sub>1</sub>	0.315 (8.0 ±0.1)	0.315 (8.0 ±0.1)
P <sub>2</sub>	0.185 (2.0 ±0.1)	0.185 (2.0 ±0.1)
D <sub>0</sub>	0.059 (1.5 +0.1/-0)	0.059 (1.5 +0.1/-0)
D <sub>1</sub>	0.059 (1.5 +0.25/-0)	0.059 (1.5 +0.1/-0)
T	0.012 (0.305 ±0.2)	0.008 (0.2 ±0.05)
T <sub>2</sub>	0.037 (0.93 ±0.1)	0.074 (1.89 ±0.1)

#### REEL inches (mm)



FCSL64

FCSL76/90

A	7.087 (180 +0/-3)	7.087 (180 +0/-3)
H	0.512 (13 ±0.2)	0.512 (13 ±0.2)
E	0.079 (2.0 ±0.5)	0.079 (2.0 ±0.5)
N	0.236 (60 +1/-0)	0.236 (60 +1/-0)
W <sub>1</sub>	0.518 (13.0 ±0.3)	0.518 (17.0 ±0.3)
W <sub>2</sub>	0.669 (17.0 ±1.4)	0.669 (19.4 ±1.0)