

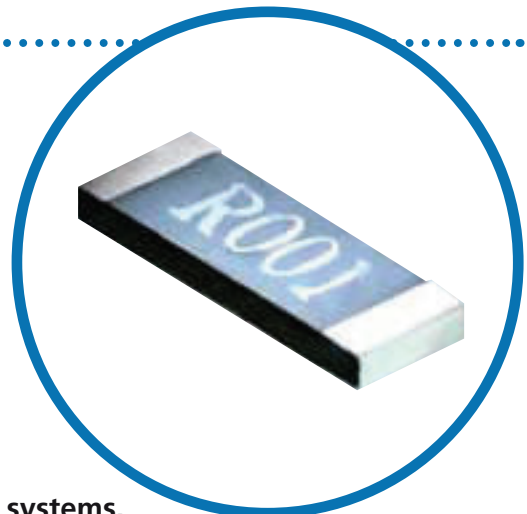
# 8W Current Sense Chip Resistors **OBSOLETE**

## BCS 8 Series

- Non inductive design.
- Low TCR, typically less than 100ppm/°C.
- Low profile surface mount package.
- Excellent pulse/surge performance.
- 8W power rating.

## Applications

- Current sense applications
- Over current protection in Battery chargers.
- Servo motor control circuits.
- DC-DC, DC-AC and intelligent power modules.
- Industrial PC modules (IPM) and precision measurement systems.
- Current detection circuits in high-speed CPU peripherals.



## Dimensions

Type	BCS8 (mm)
A	12.8+/-0.5
B	7.8max
C	2.5max
D	1.4max

## Marking

Marking is done by 3 digits resistance value notation and tolerance code F (1%).



## Electrical

	BCS8	Remarks
Resistance values	0.5m, 1m, 2m, 3m, 4m, 5m, 7m, 10mΩ	
TCR	0 to +100 ppm/°C (A)	-55 to +125 °C
Tolerance	+/-1.0% (F), +/-5.0% (J)	
Power Rating	8W	Attached to 70 micron PCB
Current Rating	90A	At 1m Ω
Maximum Current	126A	2.5 seconds one time
Series Inductance	5nH	
Operating Temp.	-55 C to 175 °C	
Storage Temp.	-55 C to 175 °C	

## Environmental

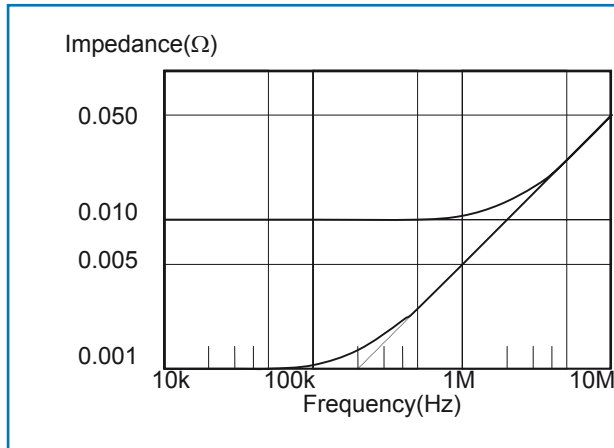
	Specifications	Conditions
Short Time Overload	$\Delta R \pm (0.5\% + 0.5m\Omega)$	maximum current, 2.5seconds.
Low Temperature Storage	$\Delta R \pm (0.5\% + 0.5m\Omega)$	-55C, 24hours
High Temperature Storage	$\Delta R \pm (1.0\% + 0.5m\Omega)$	+175C, 1000hours
Heat Shock	$\Delta R \pm (0.5\% + 0.5m\Omega)$	-55C to +125C, 20min. interval, 5min. 5cycles
Vibration	$\Delta R \pm (0.5\% + 0.5m\Omega)$	10-2000Hz, 1.5mm/20gr, 2hours
Soldering Heat	$\Delta R \pm (0.25\% + 0.5m\Omega)$	260°C +/- 5°C, 10 +/- 1 seconds.
Solderability	90%/terminal surface	
Humidity	$\Delta R \pm (0.5\% + 0.1m\Omega)$	85°C, 85%RH, dc 0.1W, 1000 hours
Load Life	$\Delta R \pm (0.5\% + 0.1m\Omega)$	25°C, dc rated power, 90min ON, 30min OFF, 1000hours

Specifications subject to change without notice.

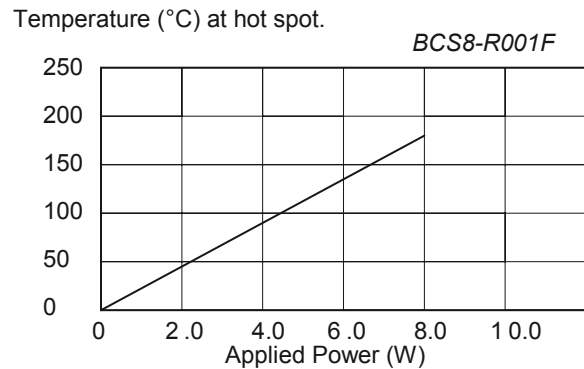
## General Note

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.

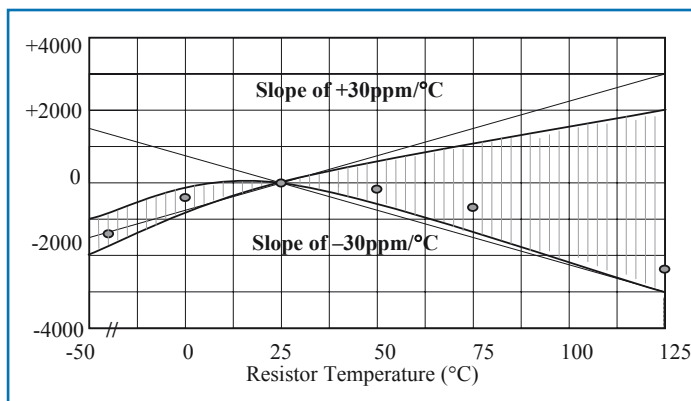
## Frequency Characteristics



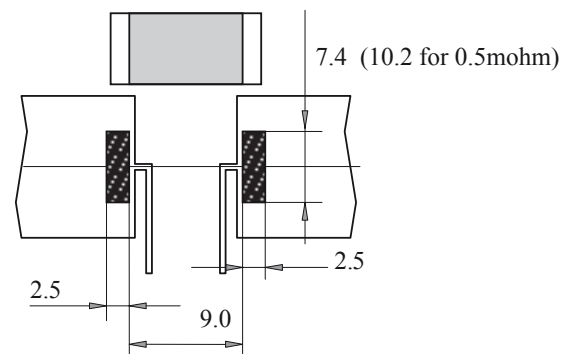
## Temperature Rise



## TCR Curves (Dotted line: typical measurement)

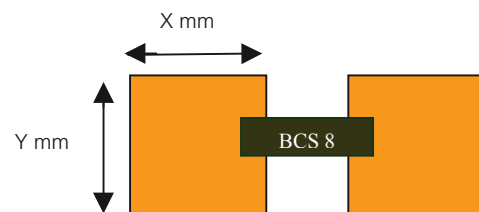


## Recommended Foot Print (mm)



## FR4 Thermal PCB Characterisation

Pad Dimensions (x,y mm)	P <sub>90 °C, 70µm</sub> (W)	P <sub>90 °C, 35µm</sub> (W)
60, 45	5.8	4.6
50, 45	5.4	4.3
40, 40	4.2	4.1
30, 30	3.5	2.8
20, 20	2.9	2.7
10, 10	2.4	2.5



Notes: Characterisation carried out using 70µm and 35µm PCB copper pad weights, with the temperature of 90°C used as a maximum reference on the PCB.

## Soldering Recommendation

Due to the enhanced heat dissipation properties of the BCS8, the temperature profile during reflow soldering will need to be increased by: 10 to 20°C.

## Custom designs

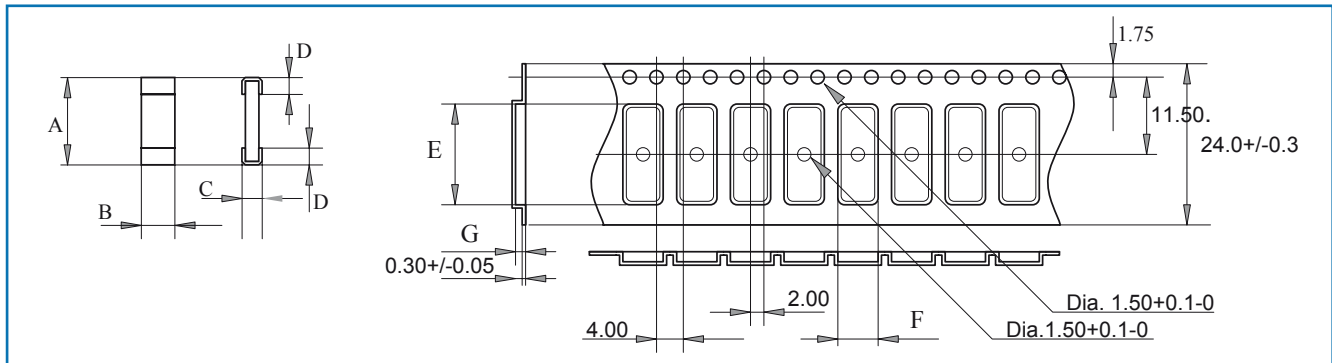
Alternative widths and lengths are available, please contact factory for details.

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## Dimensions and Taping specification



P/N	A	B	C	D	E	F	G	Reel Diameter	Quantity per Reel
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		
WSL8A0.5milliohmJ(5%)/F(1%)	12.8+/-0.5	7.8+/-0.5	2.5 max	1.3	13.9	8.7	3.75	254	1000
WSL8A 1milliohmJ(5%)/F(1%)	12.8+/-0.5	4.5+/-0.5	1.5 max	1.4	13.5	5.0	1.70	254	2000
WSL8A 2milliohmJ(5%)/F(1%)	12.8+/-0.5	4.5+/-0.5	1.5 max	1.4	13.5	5.0	1.70	254	2000
WSL8A 3milliohmJ(5%)/F(1%)	12.8+/-0.5	4.5+/-0.5	1.5 max	1.4	13.5	5.0	1.70	254	2000
WSL8A 4milliohmJ(5%)/F(1%)	12.8+/-0.5	5.5+/-0.5	1.5 max	1.4	13.9	8.7	3.75	254	1000
WSL8A 5milliohmJ(5%)/F(1%)	12.8+/-0.5	4.5+/-0.5	1.5 max	1.4	13.5	5.0	1.70	254	2000
WSL8A 7milliohmJ(5%)/F(1%)	12.8+/-0.5	5.2+/-0.5	0.6 max	1.3	13.9	8.7	3.75	254	1000
WSL8A 10milliohmJ(5%)/F(1%)	12.8+/-0.5	4.2+/-0.5	0.6 max	1.3	13.5	5.0	1.70	254	2000

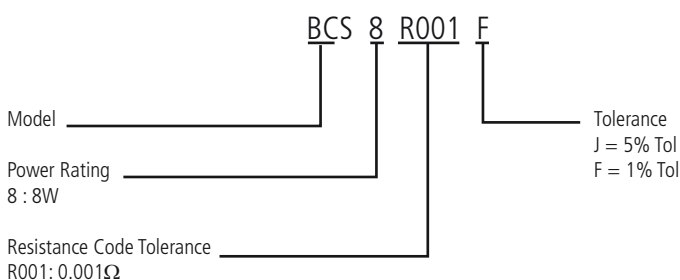
Note : Above dimensions are approximate.

Resistance testing the BCS resistors is done at the side positions of resistor terminals (see figure) using a 4 - port measuring system.

For a stated resistance tolerance of +/-1.0%, the measured values should be within the +/-0.8% factory tested values.

When surface mount resistor is attached on circuit board, small resistance changes will occur. Custom designs are available, please call the factory.

## Ordering Information



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