# BCS 8



# **8W CURRENT DETECT CHIP RESISTORS**

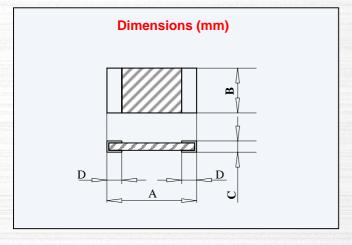
### Features

- Non inductive design.
- Low TCR, typically less than 30ppm/°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.







Туре	BCS8 (mm)
A	12.8+/-0.5
В	6.4max
С	2.5max
D	1.3

#### Marking

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

R001F

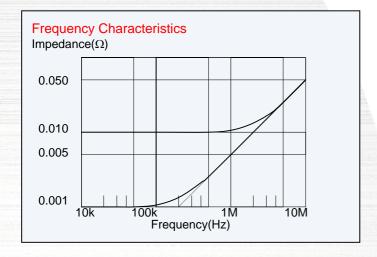
## **Specification**

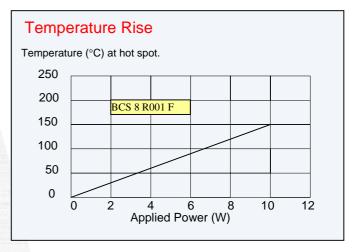
	BCS8	Remarks
Resistance values	$0.5\text{m}$ , $1\text{m}$ , $2\text{m}$ , $3\text{m}$ , $4\text{m}$ , $5\text{m}$ , $10\text{m}\Omega$	
TCR	+/-50ppm/°C	Measured +/- 30ppm/ °C
Tolerance	+/-1.0% (F), +/-5.0% (J)	
Power Rating	8W	Attached to 70 micron PCB
Current Rating	90A	At 1m Ω
Maximum Current	126A	2.5 seconds one time
Series Inductance	5nH	
Operating Temp.	-55 C to 175 °C	
Storage Temp.	-55 C to 175 ° C	

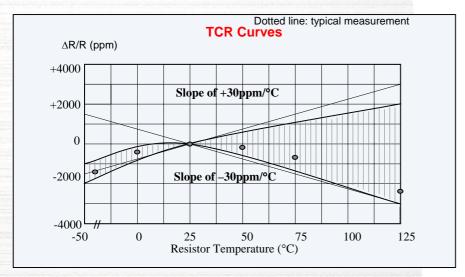
	Specifications	Conditions	
Short Time Overload	$\Delta R + /-(0.5\% + 0.5m\Omega)$	maximum current, 2.5seconds.	
Low Temperature Storage	$\Delta R + -(0.5\% + 0.5 \text{m}\Omega)$	-55C, 24hours	
High Temperature Storage	$\Delta R + /-(1.0\% + 0.5 \text{m}\Omega)$	+175C, 1000hours	
Heat Shock	$\Delta R + -(0.5\% + 0.5 \text{m}\Omega)$	-55C to +125C, 20min. interval, 5min. 5cycles	
Vibration	$\Delta R + -(0.5\% + 0.5 \text{m}\Omega)$	10-2000Hz, 1.5mm/20gr, 2hours	
Soldering Heat	$\Delta R + (0.25\% + 0.5 \text{m}\Omega)$	260°C+/-5°C, 10+/-1 seconds.	
Solderability	90%/terminal surface		
Humidity	$\Delta R + -(0.5\% + 0.1 \text{m}\Omega)$	85°C, 85%RH, dc0.1W, 1000 hours	
Load Life	$\Delta R + -(0.5\% + 0.1 \text{m}\Omega)$	25°C, dc rated power, 90min ON, 30min OFF, 1000hours	

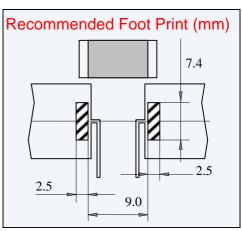
 $\label{thm:continuous} \mbox{Specifications subject to change without notice.}$ 











# **Soldering Recommendation**

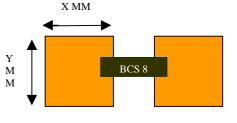
Due to the enhanced heat dissipation properties of the BCS8, the temperature profile during reflow soldering will need to be increased by: 10 to 20°C.

#### **Custom designs**

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

## **FR4 Thermal PCB Characterisation**

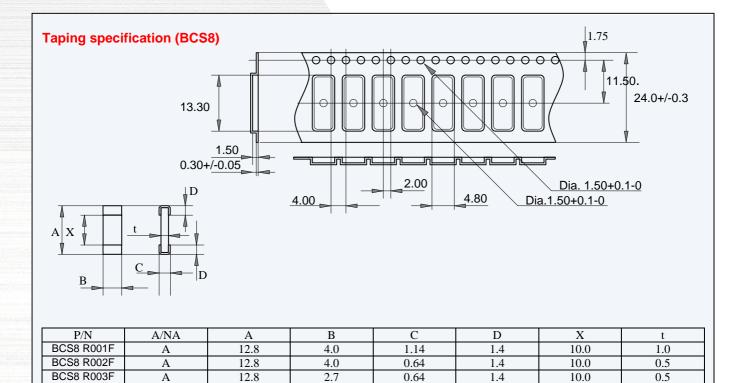
Pad Dimensions (x,y mm)	P <sub>90 °C, 70um</sub> (W)	P <sub>90 °C, 35um</sub> (W)
60, 45	5.8	4.6
50, 45	5.4	4.3
40, 40	4.2	4.1
30, 30	3.5	2.8
20, 20	2.9	2.7
10, 10	2.4	2.5



Notes: Characterisation carried out using  $70\mu m$  and  $35\mu m$  PCB copper pad weights, with the temperature of  $90^{\circ}C$  used as a maximum reference on the PCB.

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0.44

0.34

0.34

1.4

1.4

1.4

4.5

5.3

4.4

Note: Above dimensions are approximate.

Α

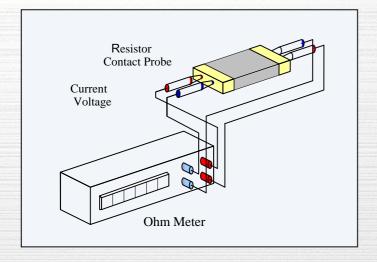
NA

A

BCS8 R003F

BCS8 R004F

BCS8 R005F



12.8

12.8

12.8

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.

10.0

10.0

10.0

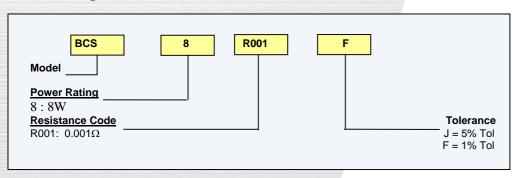
0.3

0.2

0.2

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

## **Ordering Information**



BCS 8

