

**RoHS  
Compliant**



### Specifications:

DC Current Rating	: 1A
DC Resistance Max	: 0.07Ω
Inductance	: 6.8μH
Inductance Tolerance	: ± 20%
Inductor Construction	: Shielded
Lead Spacing	: 7.62mm
Packaging	: Cut Tape
Power Inductor Case	: 12.95mm × 9.5mm × 5.2mm
RMS Current (I <sub>rms</sub> )	: 3.39A

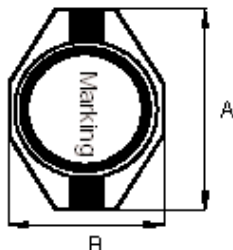
### Electrical Characteristics (at 25°C)

Test Condition		
100kHz 0.1V	L	68μH ±20%
at 25°C	DCR	0.73Ω (Max.)
100kHz 0.1V I <sub>rms</sub> = 0.42A	L at I <sub>rms</sub>	ΔT40°C (Max.)

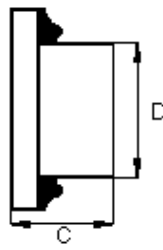
Operating temperature: -55°C to +130°C

Note : I<sub>rms</sub>: Temperature Rise 40°C

### Configurations and Dimensions

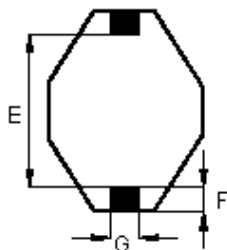


Top View

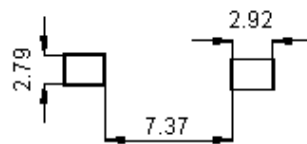


Side View

A	12.95mm	(Max.)
B	9.5mm	
C	5.2mm	
D	8.4 ±0.3mm	-
E	7.62mm	(Ref.)
F	2.54mm	
G		

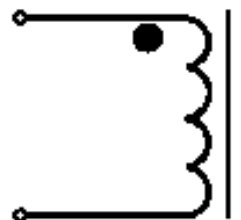


Bottom View



Suggest PCB Layout

### Schematic Diagram



#### Note:

1. Wire Ø0.15mm × 1P 2UEWF 155°C.
2. 51.5TS (Reference)

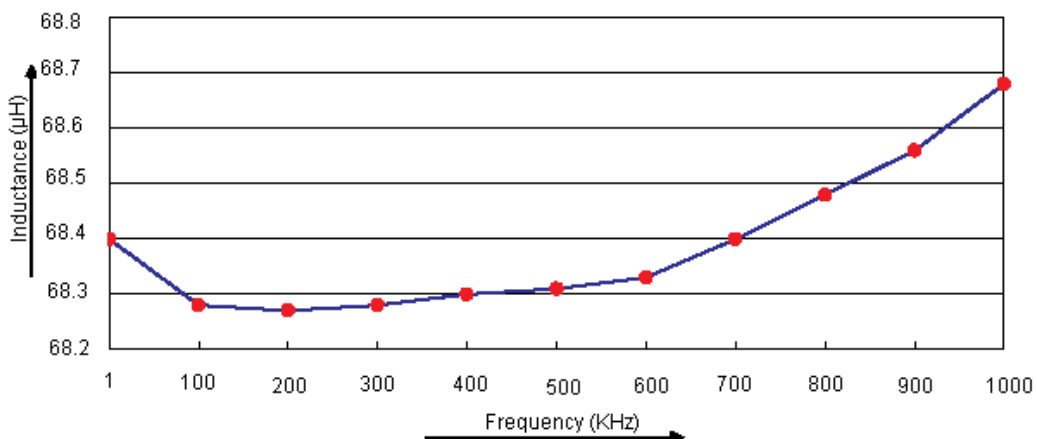
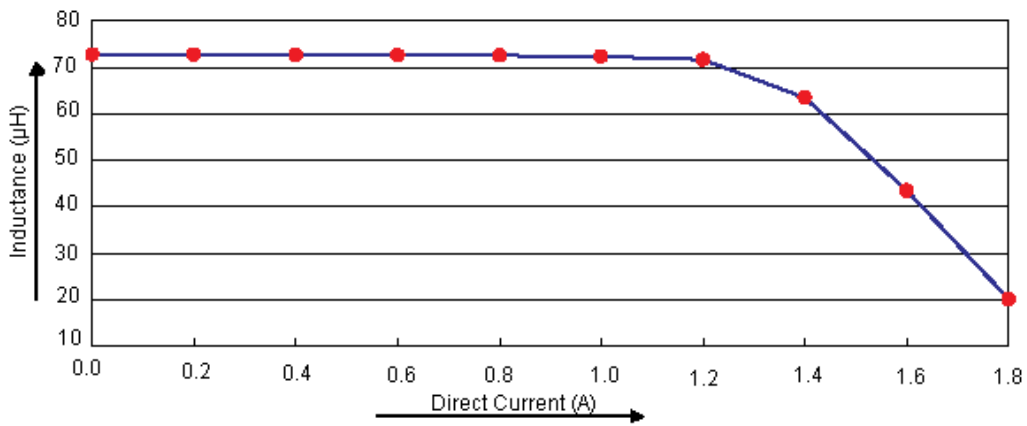
Dimensions : Millimetres

Marking : 680

## Test Data for Mechanical

Test Item	A mm	B mm	C mm	D mm	E mm	F mm	G mm
Specification	12.95 (Max.)	9.5 (Max.)	5.2 (Max.)	8.4 ±0.3	7.62 (Ref.)	2.54 (Ref.)	2.54 (Ref.)
1	12.78	9.2	4.81	8.5	7.62	2.52	2.53
2	12.75	9.22	4.8	8.48	7.6	2.51	2.52
3	12.78	9.23	4.81	8.51	7.61	2.53	2.53
4	12.8	9.18	4.78	8.52	7.62	2.5	2.51
5	12.76	9.2	4.79	8.49	7.59	2.52	2.52
Average	12.77	9.21	4.8	8.5	7.61	2.52	2.52

## Electric Characteristics



## Test Data for Electrical

Test Item	L $\mu$ H	DCR $\Omega$	L at I <sub>rms</sub> $\mu$ H
Condition	100kHz 0.1V	at 25°C	100kHz 0.1V I <sub>rms</sub> = 1.07A
Specification	68 $\pm$ 20%	0.73 (Max.)	$\Delta$ T40°C (Max.)
1	70.68	0.58	OK
2	72.45	0.59	
3	70.46		
4	70.59	0.57	
5	71.25	0.59	
Average	71.09	0.58	OK

## Reliability Test

Test Item	Specifications	Test Method and Remarks
Solderability	The electrodes shall be at least 90% covered with new solder coating.	According to IEC68-2-20 Soldering temperature : 245 $\pm$ 5°C Solder : Sn99.3% / Cu0.7% Flux : Rosin Immersion time : 5 $\pm$ 1s
Soldering heat resistance	Appearance : No damage Inductance change : Within $\pm$ 10% of initial value	Preheat temperature 150°C; Preheat time : 1 min Solder temperature : 260 $\pm$ 5°C Dipping time : 10 $\pm$ 1 s Measured at room temperature after placing for 24 hours.
Vibration (Out LAB)	Appearance : No damage All electrical and mechanical parameters within tolerance.	According to MIL-STD202 Method 204 Frequency : 10 to 55 Hz Amplitude : 1.52 mm Direction and time X Y and Z direction for 2 hours each.
Humidity resistance test	Appearance : No damage All electrical and mechanical parameters within tolerance.	According to IEC68-2-1 Method Ca Temperature : 40 $\pm$ 2°C Humidity : 90%-95% RH Test time : 500 $\pm$ 2 hrs The component should be stabilized at normal condition for 24 hours before test.
High temperature resistance test	Appearance : No damage All electrical and mechanical parameters within tolerance.	According to IEC68-2-2 Temperature : 85 $\pm$ 3°C Test time : 500 +24 hrs The component should be stabilized at normal condition for 24 hours before test.

Test Item	Specifications	Test Method and Remarks
Low temperature resistance test	Appearance : No damage All electrical and mechanical parameters within tolerance.	According to IEC68-2-1 Method A (Ad) Temperature : -40 ±3°C Test time : 500 +24 hrs The component should be stabilized at normal condition for 24 hours before test.
Temperature cycles test	Appearance : No damage All electrical and mechanical parameters within tolerance.	According to IEC68-2-14 Method N (Nb) High-temperature : 85 ±3°C duration 30 mins Room-temperature : 25 ±2°C duration 3 hrs Low-temperature : -40 ±3°C duration 30 mins Room-temperature : 25 ±2°C duration 3 hrs Number of cycle : 10 cycles The component should be stabilized at normal condition for 24 hours before test.

## Material List

No.	Item	Material Description
1	Core	R5A DR4.8 × 4 R5A RI 8.4 × 4.1 × 6.85
2	Wire	Ø0.15 mm × 1P 2UEWF (155°C)
3	Solder (Lead-free)	Sn99.3% / Cu0.7%
4	Glue	TH320D / TH320-3
5	Base	SN-BS019.01 LCP

## Part Number Table

Description	Part Number
Inductor, 68µH, 20%, 1A	MCBFS5220-680MU

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