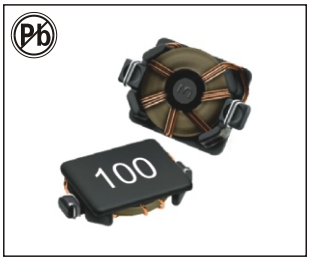
# TOROIDAL SURFACE MOUNT POWER INDUCTORS

## STC0718 SERIES




### FEATURES:

- RoHS compliant
- Up to 3A Idc
- Low Rdc
- Small footprint
- Ultra–low profile

### APPLICATIONS:

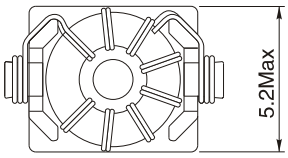
- Power applications with restricted PCB space and height, such as handheld devices, DC–DC converters and notebook computers

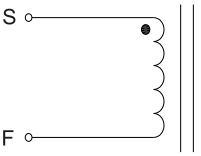
## ELECTRICAL CHARACTERISTICS@25℃

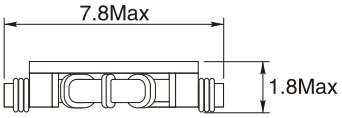
| Part Number | Inductance (uH) ±20% | Irms (A)Max | Isat (A)Typ | DCR (mΩ)Max |
|---|---|---|---|---|
| STC0718–R42M | 0.42 | 3.00 | 5.69 | 24 |
| STC0718–R75M | 0.75 | 2.70 | 4.55 | 30 |
| STC0718–1R2M | 1.2 | 1.70 | 3.36 | 65 |
| STC0718–1R7M | 1.7 | 1.55 | 2.71 | 73 |
| STC0718–2R3M | 2.3 | 1.40 | 2.35 | 86 |
| STC0718–3R3M | 3.3 | 1.35 | 1.79 | 98 |
| STC0718–4R7M | 4.7 | 1.10 | 1.66 | 130 |
| STC0718–6R8M | 6.8 | 0.95 | 1.30 | 150 |
| STC0718–8R5M | 8.5 | 0.85 | 1.15 | 167 |
| STC0718–100M | 10 | 0.75 | 1.04 | 185 |
| STC0718–150M | 15 | 0.60 | 0.85 | 300 |
| STC0718–220M | 22 | 0.50 | 0.74 | 350 |
| STC0718–330M | 33 | 0.42 | 0.59 | 600 |
| STC0718–470M | 47 | 0.35 | 0.48 | 710 |
| STC0718–680M | 68 | 0.30 | 0.41 | 850 |
| STC0718–820M | 82 | 0.27 | 0.37 | 1250 |
| STC0718–101M | 100 | 0.24 | 0.34 | 1320 |

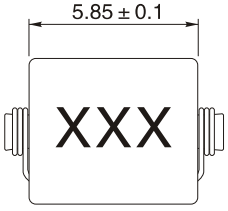
## TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS

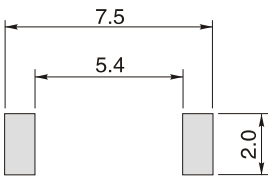
Dimensions(mm)



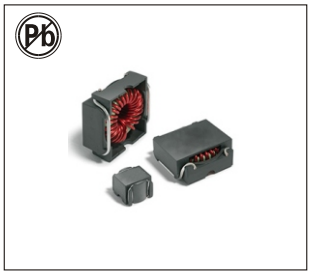




Note:

- Test frequency: 100KHz,0.1V
- Testing Instrument : L:HP4284A, WK3260B, WK3261A
- All test data is referenced to 25℃ ambient
- Idc: DC current (A) that will cause an approximate △T of 40℃
- Isat: DC current (A) that will cause Lo to drop approximately 25%
- Operating temperature range –40℃ to +125℃ (Including temperature rise 40℃ Max)
- Storage temperature range –40℃ to +85℃
- UL 94V–0 packaging materials
- J–STD–020D reflow
- Custom inductance values available

# SMD TOROID POWER INDUCTORS
# STR SERIES



## FEATURES:

- Toroid winding eliminates stray electromagnetic emissions
- Current ratings up to 8 A
- High current, with ratings up to 12.2 A
- Core material: Powered iron
- RoHS compliant
- Operating temperature: –40℃ to +85℃(Including self temperature rise)

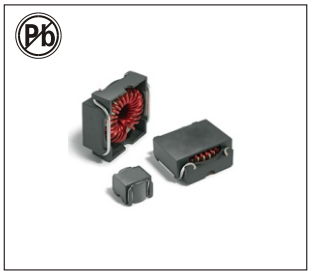
## ELECTRICAL CHARACTERISTICS:@25℃

| Part Number | Inductance (uH) ± 20% 100KHz,0.1V | SRF (MHz)typ. | DCR (mΩ). | Isat(A) | | | Irms(A) | |
|---|---|---|---|---|---|---|---|---|
| | | | | 10%drop | 20%drop | 30%drop | 20 ℃ rise | 40 ℃ rise |
| **Standard series** | | | | | | | | |
| STR20–1R1M | 1.1 | 130 | 16.0 | 3.2 | 4.8 | 6.7 | 4.7 | 6.1 |
| STR38–3R8M | 3.8 | 61 | 9.3 | 4.0 | 6.1 | 8.2 | 6.5 | 8.5 |
| STR30–5R2M | 5.2 | 47 | 24.2 | 2.8 | 4.2 | 5.8 | 4.2 | 5.7 |
| STR20–7R0M | 7.0 | 37 | 95.0 | 1.2 | 1.8 | 2.5 | 1.8 | 2.2 |
| STR38–7R5M | 7.5 | 50 | 22.8 | 2.7 | 4.2 | 5.8 | 4.4 | 6.5 |
| STR44–7R9M | 7.9 | 26 | 16.2 | 3.5 | 5.4 | 7.3 | 5.6 | 7.5 |
| STR30–120M | 12 | 23.9 | 54.7 | 1.9 | 2.8 | 3.7 | 2.5 | 3.3 |
| STR44–140M | 14 | 15.6 | 23.6 | 2.8 | 4.1 | 5.7 | 4.2 | 5.7 |
| STR50–160M | 16 | 14.3 | 19.7 | 2.8 | 4.2 | 5.8 | 5.1 | 7.1 |
| STR38–220M | 22 | 18.1 | 63 | 1.5 | 2.3 | 3.1 | 3.7 | 3.8 |
| STR20–230M | 23 | 13.5 | 320 | 0.6 | 1.0 | 1.3 | 0.71 | 1.0 |
| STR50–260M | 26 | 11.2 | 32 | 2.3 | 3.4 | 4.6 | 4.3 | 6.0 |
| STR30–350M | 35 | 11.0 | 166 | 1.1 | 1.6 | 2.2 | 1.3 | 1.6 |
| STR44–410M | 41 | 8.3 | 85 | 1.6 | 2.3 | 3.1 | 2.3 | 3.1 |
| STR38–730M | 73 | 10.8 | 290 | 0.81 | 1.3 | 1.7 | 1.1 | 1.5 |
| STR50–730M | 73 | 4.56 | 133 | 1.4 | 2.0 | 2.7 | 2.6 | 3.5 |
| STR30–171M | 170 | 3.84 | 640 | 0.44 | 0.68 | 0.95 | 0.7 | 0.88 |
| STR38–291M | 290 | 2.87 | 657 | 0.41 | 0.64 | 0.9 | 0.7 | 1.0 |
| STR50–561M | 560 | 1.54 | 550 | 0.37 | 0.59 | 0.81 | 0.7 | 0.9 |
| STR38–671M | 670 | 1.38 | 1200 | 0.26 | 0.4 | 0.55 | 0.48 | 0.65 |
| STR44–112M | 1100 | 1.35 | 1908 | 0.25 | 0.41 | 0.57 | 0.57 | 0.63 |
| STR50–202M | 2000 | 1.35 | 1932 | 0.18 | 0.29 | 0.41 | 0.56 | 0.7 |
| | | | | | | | | |
| **High current series** | | | | | | | | |
| STR44H–2R8M | 2.8 | 74 | 4.6 | 5.8 | 8.8 | 12.2 | 9.7 | 13.6 |
| STR44H–4R2M | 4.2 | 61 | 6.6 | 5.0 | 7.8 | 10.9 | 8.8 | 11.8 |
| STR50H–6R5M | 6.5 | 27.3 | 7.2 | 4.6 | 6.7 | 9.1 | 8.6 | 11.7 |
| STR50H–8R4M | 8.4 | 22.8 | 8.5 | 4.3 | 6.4 | 8.5 | 7.1 | 9.8 |
| STR68H–110M | 11 | 25.9 | 8.2 | 4.8 | 7.2 | 9.9 | 8.3 | 11.2 |
| STR68H–180M | 18 | 12.0 | 12.5 | 3.9 | 5.7 | 7.7 | 6.8 | 9.2 |

## NOTES:

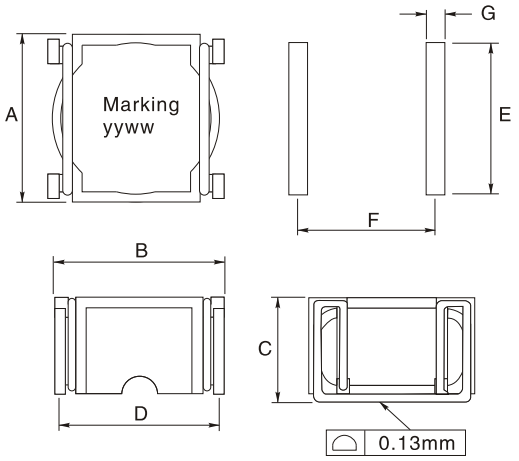
- Electrical specifications at 25℃
- Inductance tested at 100 kHz, 0.1 Vrms on HP 4192A
- SRF measured on HP 8753ES network analyzer
- Isat: DC current that causes the specified inductance drop from its value without current.
- Irms: Current that causes the specified temperature rise from 25℃ ambient
- Ambient temperature –40℃ to +85℃
- Maximum part temperature: The part temperature should not exceed +85℃ (ambient + self–heating)
- Packaging: –40℃ to +80℃

# SMD TOROID POWER INDUCTORS
# STR SERIES

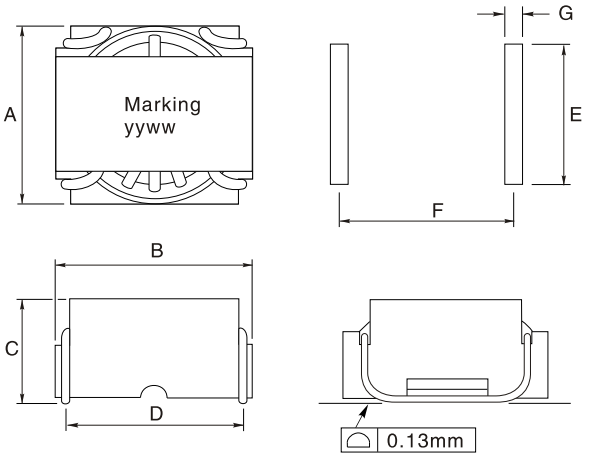


## PHYSICAL CHARACTERISTICS:

**Standard series**



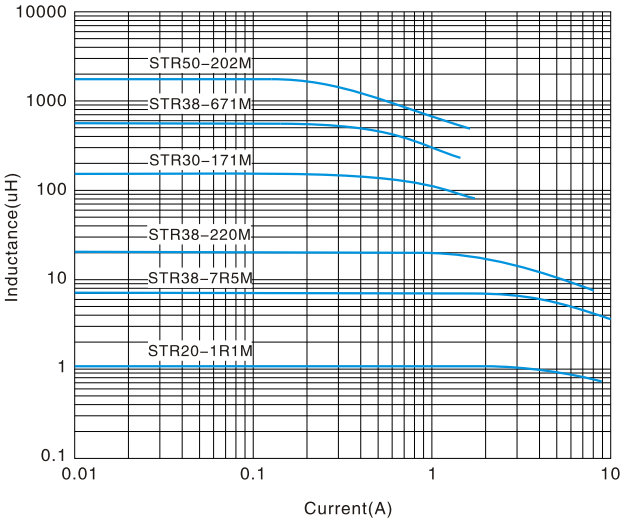

**High current series**



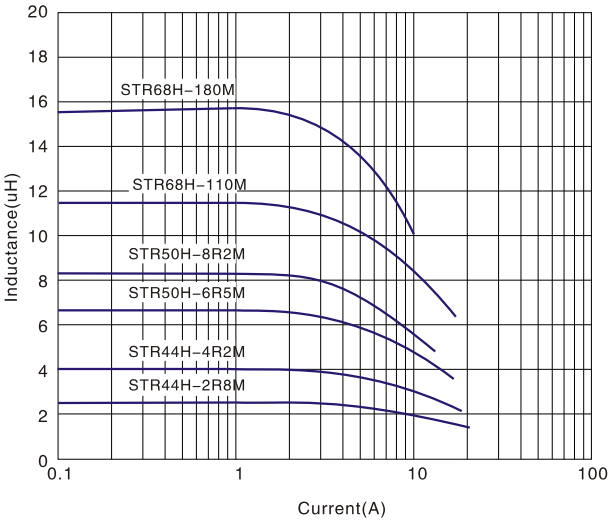

| Part No. | A(Max) | B(Max) | C(Max) | D(±0.76) | E(±0.13) | F(±0.13) | G |
|---|---|---|---|---|---|---|---|
| STR20 | 8.64 | 8.64 | 7.0 | 6.6 | 7.62 | 6.86 | 1.52 |
| STR30 | 11.05 | 11.18 | 9.5 | 8.89 | 10.16 | 9.14 | 1.52 |
| STR38 | 14.22 | 14.35 | 9.5 | 11.43 | 13.21 | 11.68 | 1.52 |
| STR44 | 15.0 | 15.62 | 10.5 | 12.7 | 13.97 | 12.95 | 1.52 |
| STR50 | 17.02 | 17.78 | 10.5 | 14.73 | 15.75 | 14.99 | 1.52 |
| STR44H | 16.9 | 16.9 | 10.5 | 14.22 | 12.45 | 14.5 | 2.03 |
| STR50H | 18.8 | 18.8 | 10.5 | 16.0 | 14.22 | 16.26 | 2.03 |
| STR68H | 23.9 | 23.9 | 10.5 | 20.83 | 17.8 | 21.08 | 2.03 |

## INDUCTANCE VS CURRENT

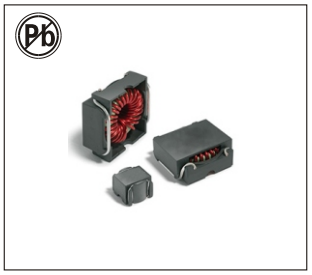
**Standard series**



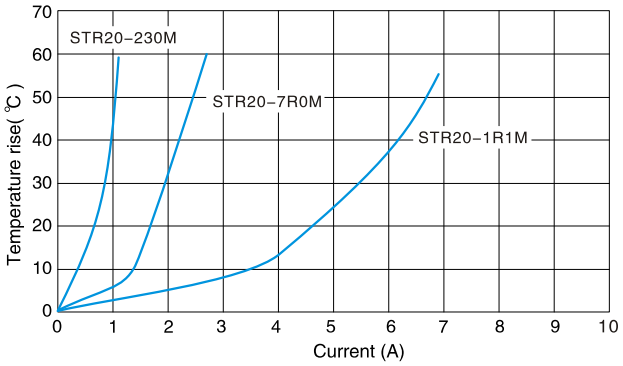

**High current series**

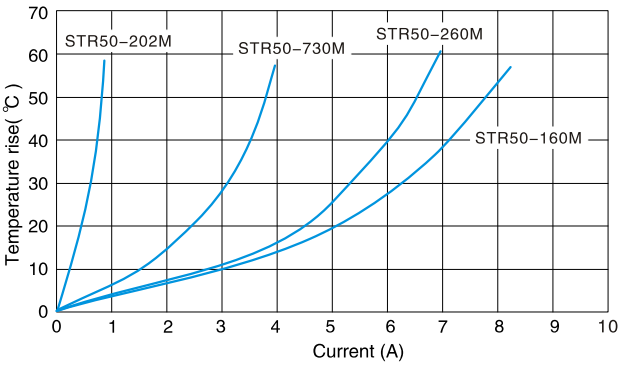


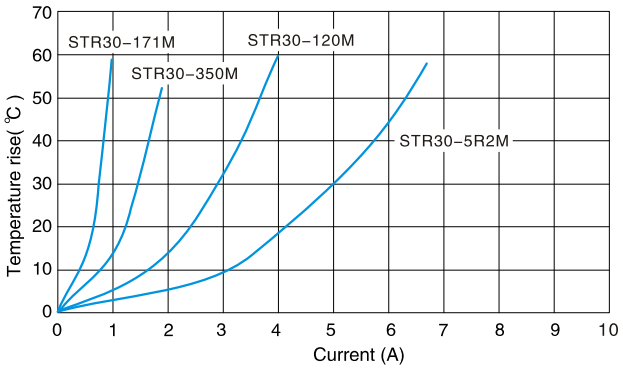
# SMD TOROID POWER INDUCTORS
# STR SERIES

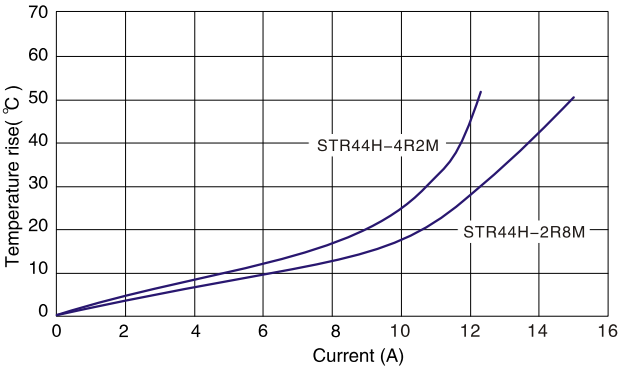


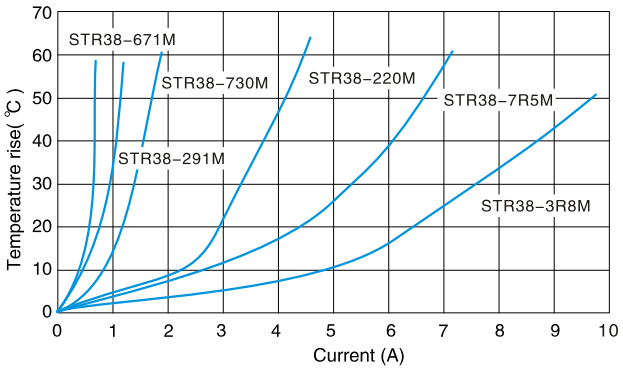
## TEMPERATURE RISE VS CURRENT:

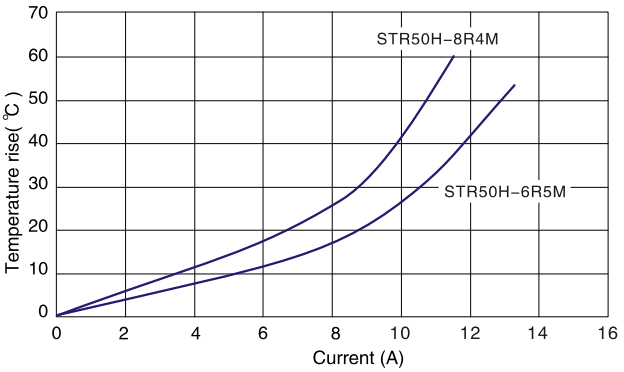


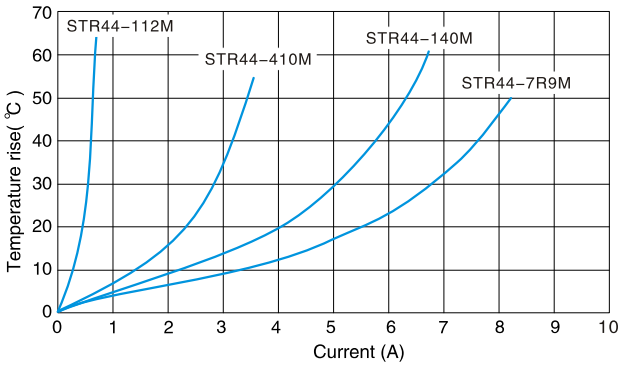



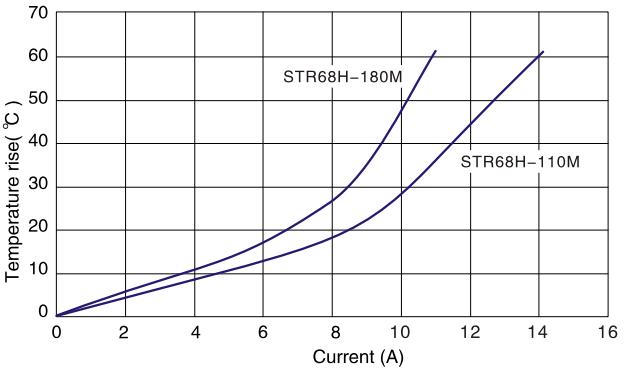



# SURFACE-MOUNT TOROID CHOKES

# STR30 SERIES

## FEATURES:

- Higher Frequency
- High Saturation Material
- Low EMI Radiation
- Pick and PLace
  Low DC Resistance

## COMMON APPLICATIONS:

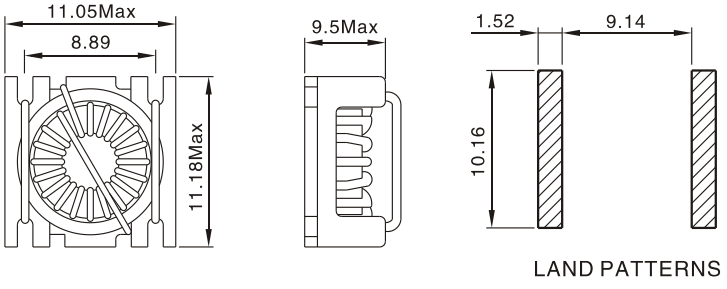
- Electronic Appliances
- DC – DC Conversion (Paraller Mode)
- Isolation/Coupling(Transformer)
- Input Filter(Serial Mode)
- EMI/RFI Suppression

## ELECTRICAL CHARACTERISTICS:

| Part Number | L μH 100KHz | SRF MHz TYP | DCR (mΩ) Max | IDC (A) Max |
|---|---|---|---|---|
| STR30-8/90-1R8M | 1.8 | 140 | 12.0 | 12 |
| STR30-8/90-3R3M | 3.3 | 110 | 19.9 | 10 |
| STR30-8/90-6R8M | 6.8 | 55 | 47.2 | 6.5 |
| STR30-8/90-220M | 22 | 15 | 166 | 3.5 |
| STR30-8/90-101M | 100 | 5.0 | 640 | 1.6 |
| STR30-18-2R7M | 2.7 | 125 | 12.0 | 7.4 |
| STR30-18-5R2M | 5.2 | 102 | 19.9 | 5.4 |
| STR30-18-120M | 12 | 52 | 47.2 | 3.5 |
| STR30-18-350M | 35 | 12 | 166 | 2.0 |
| STR30-18-171M | 170 | 4.0 | 640 | 0.95 |
| STR30-52-3R6M | 3.6 | 150 | 12.0 | 5.0 |
| STR30-52-6R8M | 6.8 | 110 | 19.9 | 3.7 |
| STR30-52-150M | 15 | 45 | 47.2 | 2.5 |
| STR30-52-470M | 47 | 14 | 166 | 1.4 |
| STR30-52-221M | 220 | 4.2 | 640 | 0.64 |
| STR30-M125-6R0M | 6.0 | 95 | 12.0 | 4.6 |
| STR30-M125-120M | 12 | 75 | 19.9 | 3.4 |
| STR30-M125-220M | 22 | 50 | 47.2 | 2.4 |
| STR30-M125-820M | 82 | 10 | 166 | 1.3 |
| STR30-M125-391M | 390 | 3 | 640 | 0.60 |

Note:1. K=±10%,M=±20%,N=±30%

## TECHNICAL INFORMATION:




LAND PATTERNS

## PHYSICAL CHARACTERISTICS:

**Winding**

- IDC Max:Determined when superimposed
- Inductance test: HP4284A 10KHz 0.1V
- Operating temperature: –40℃ to +105℃
- Storage Temperature: –40℃ to +105℃
- Solder methods: Vapor Phase, Infrared Reflow
- Resistance to soldering heat:260℃ for 10 seconds
- Solvent resistance: Conforms to MIL-STD-202E
- Marking: Inductance & Tolerance

Note:All specifications subject to change without notice.

# SURFACE-MOUNT TOROID CHOKES

# STR38 SERIES

## FEATURES:

- Higher Frequency
- High Saturation Material
- Low EMI Radiation
- Pick and PLace
  Low DC Resistance

## COMMON APPLICATIONS:

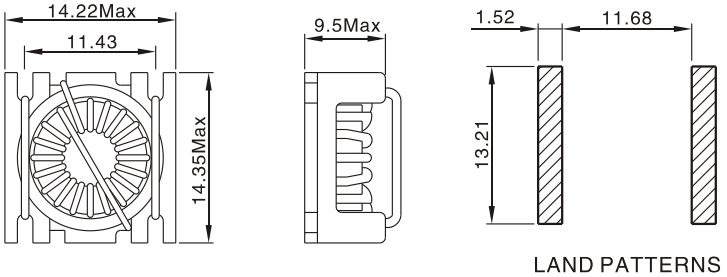
- Electronic Appliances
- DC – DC Conversion (Paraller Mode)
- Isolation/Coupling(Transformer)
- Input Filter(Serial Mode)
- EMI/RFI Suppression

## ELECTRICAL CHARACTERISTICS:

| Part Number | L μH 100KHz | SRF MHz TYP | DCR (mΩ) Max | IDC (A) Max |
|---|---|---|---|---|
| STR38-8/90-1R5M | 1.5 | 133 | 9.3 | 18 |
| STR38-8/90-3R3M | 3.3 | 73 | 18.7 | 12 |
| STR38-8/90-8R2M | 8.2 | 24 | 63 | 7.5 |
| STR38-8/90-270M | 27 | 12 | 290 | 4.0 |
| STR38-8/90-101M | 100 | 4.0 | 657 | 2.1 |
| STR38-18-3R8M | 3.8 | 133 | 9.3 | 8.8 |
| STR38-18-7R5M | 7.5 | 73 | 18.7 | 5.8 |
| STR38-18-220M | 22 | 34 | 63 | 3.5 |
| STR38-18-730M | 73 | 5.0 | 290 | 2.0 |
| STR38-18-291M | 290 | 2.0 | 657 | 0.98 |
| STR38-52-4R7M | 4.7 | 133 | 9.3 | 6.5 |
| STR38-52-100M | 10 | 62 | 18.7 | 4.4 |
| STR38-52-330M | 33 | 25 | 63 | 2.4 |
| STR38-52-101M | 100 | 5.0 | 290 | 1.4 |
| STR38-52-391M | 390 | 133 | 657 | 0.71 |
| STR38-M125-6R8M | 6.8 | 58 | 9.3 | 6.2 |
| STR38-M125-150M | 15 | 18 | 18.7 | 4.2 |
| STR38-M125-390M | 39 | 4.0 | 63 | 2.6 |
| STR38-M126-121M | 120 | 1.2 | 290 | 1.6 |
| STR38-M127-471M | 470 | 1.8 | 657 | 0.74 |

Note:1. K=±10%,M=±20%,N=±30%

## TECHNICAL INFORMATION:




LAND PATTERNS

## PHYSICAL CHARACTERISTICS:

**Winding**

- IDC Max:Determined when superimposed
- Inductance test: HP4284A 10KHz 0.1V
- Operating temperature: –40℃ to +105℃
- Storage Temperature: –40℃ to +105℃
- Solder methods: Vapor Phase, Infrared Reflow
- Resistance to soldering heat:260℃ for 10 seconds
- Solvent resistance: Conforms to MIL-STD-202E
- Marking: Inductance & Tolerance

Note:All specifications subject to change without notice.

# SURFACE-MOUNT TOROID CHOKES

# STR44 SERIES

## FEATURES:

- Higher Frequency
- High Saturation Material
- Low EMI Radiation
- Pick and PLace
  Low DC Resistance

## COMMON APPLICATIONS:

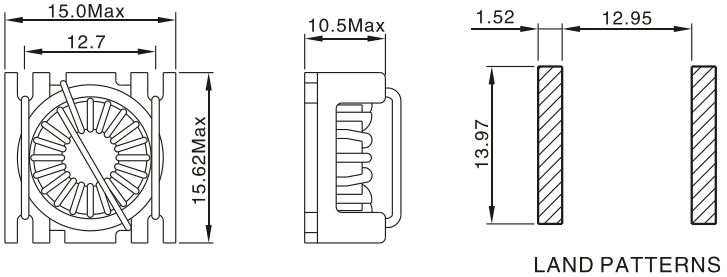
- Electronic Appliances
- DC – DC Conversion (Paraller Mode)
- Isolation/Coupling(Transformer)
- Input Filter(Serial Mode)
- EMI/RFI Suppression

## ELECTRICAL CHARACTERISTICS:

| Part Number | L μH 100KHz | SRF MHz TYP | DCR (mΩ) Max | IDC (A) Max |
|---|---|---|---|---|
| STR44-8/90-5R6M | 5.6 | 65 | 16.2 | 11.0 |
| STR44-8/90-100M | 10.0 | 40 | 23.6 | 9.0 |
| STR44-8/90-150M | 15.0 | 25 | 39.0 | 7.4 |
| STR44-8/90-270M | 27.0 | 12 | 85.0 | 5.4 |
| STR44-8/90-681M | 680 | 1.4 | 1908 | 1.0 |
| STR44-18-7R9M | 7.9 | 49 | 16.2 | 6.6 |
| STR44-18-140M | 14.0 | 33 | 23.6 | 5.2 |
| STR44-18-220M | 22.0 | 23 | 39.0 | 4.1 |
| STR44-18-410M | 41.0 | 9.5 | 85.0 | 3.0 |
| STR44-18-112M | 1100 | 12 | 1908 | 0.58 |
| STR44-52-120M | 12 | 62 | 16.2 | 4.5 |
| STR44-52-180M | 18 | 35 | 23.6 | 3.5 |
| STR44-52-270M | 27 | 26 | 39.0 | 2.8 |
| STR44-52-560M | 56 | 9.0 | 85.0 | 2.0 |
| STR44-52-152M | 1500 | 0.85 | 1908 | 0.39 |
| STR44-M125-180M | 18 | 49 | 16.2 | 4.3 |
| STR44-M125-270M | 27 | 33 | 23.6 | 3.4 |
| STR44-M125-470M | 47 | 23 | 39.0 | 2.6 |
| STR44-M125-101M | 100 | 7.5 | 85.0 | 1.8 |
| STR44-M125-222M | 2200 | 0.60 | 1908 | 0.38 |

Note:1. K=±10%,M=±20%,N=±30%

## TECHNICAL INFORMATION:




LAND PATTERNS

## PHYSICAL CHARACTERISTICS:

**Winding**

- IDC Max:Determined when superimposed
- Inductance test: HP4284A 10KHz 0.1V
- Operating temperature: -40℃ to +105℃
- Storage Temperature: -40℃ to +105℃
- Solder methods: Vapor Phase, Infrared Reflow
- Resistance to soldering heat:260℃ for 10 seconds
- Solvent resistance: Conforms to MIL-STD-202E
- Marking: Inductance & Tolerance

Note:All specifications subject to change without notice.

# SURFACE–MOUNT TOROID CHOKES

# STR50 SERIES

## FEATURES:

- Higher Frequency
- High Saturation Material
- Low EMI Radiation
- Pick and PLace
  Low DC Resistance

## COMMON APPLICATIONS:

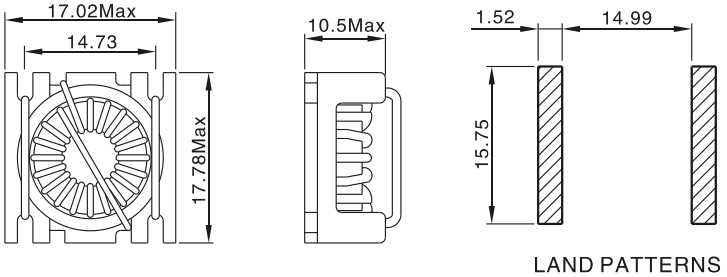
- Electronic Appliances
- DC – DC Conversion (Paraller Mode)
- Isolation/Coupling(Transformer)
- Input Filter(Serial Mode)
- EMI/RFI Suppression

## ELECTRICAL CHARACTERISTICS:

| Part Number | L μH 100KHz | SRF MHz TYP | DCR (mΩ) Max | IDC (A) Max |
|---|---|---|---|---|
| STR50–8/90–100M | 10 | 35 | 19.7 | 9.0 |
| STR50–8/90–150M | 15 | 27 | 32 | 7.5 |
| STR50–8/90–470M | 47 | 7.0 | 133 | 4.3 |
| STR50–8/90–101M | 100 | 3.8 | 220 | 2.9 |
| STR50–8/90–152M | 1500 | 0.72 | 1932 | 0.76 |
| STR50–18–160M | 16 | 24 | 19.7 | 5.4 |
| STR50–18–260M | 26 | 11 | 32 | 4.3 |
| STR50–18–730M | 73 | 4.5 | 133 | 2.5 |
| STR50–18–151M | 150 | 2.6 | 220 | 1.8 |
| STR50–18–202M | 2000 | 0.60 | 1932 | 0.50 |
| STR50–52–180M | 18 | 35 | 19.7 | 4.4 |
| STR50–52–270M | 27 | 27 | 32 | 3.6 |
| STR50–52–101M | 100 | 5.2 | 133 | 1.9 |
| STR50–52–221M | 220 | 2.2 | 220 | 1.3 |
| STR50–52–272M | 2700 | 0.50 | 1932 | 0.37 |
| STR50–M125–330M | 33 | 19 | 19.7 | 3.5 |
| STR50–M125–470M | 47 | 16 | 32 | 2.8 |
| STR50–M125–151M | 150 | 3.6 | 133 | 1.6 |
| STR50–M125–331M | 330 | 2.0 | 220 | 1.2 |
| STR50–M125–472M | 4700 | 0.45 | 1932 | 0.31 |

Note:1. K= ± 10%,M= ± 20%,N= ± 30%

## TECHNICAL INFORMATION:




LAND PATTERNS

## PHYSICAL CHARACTERISTICS:

**Winding**

- IDC Max:Determined when superimposed
- Inductance test: HP4284A 10KHz 0.1V
- Operating temperature: –40℃ to +105℃
- Storage Temperature: –40℃ to +105℃
- Solder methods: Vapor Phase, Infrared Reflow
- Resistance to soldering heat:260℃ for 10 seconds
- Solvent resistance: Conforms to MIL–STD–202E
- Marking: Inductance & Tolerance

Note:All specifications subject to change without notice.


# High Current SMD Power Inductors

# STR8052B Series

## Features

- Current rating up to 22.7 A
- Toroidal core
- RoHS compliant*

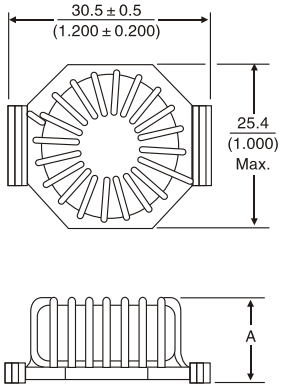
## Applications

- Input/output of DC/DC converters
- Industrial electronics
- Power supplies for:
  - Portable communications equipment
  - Camcorders
  - LCD Tvs
  - Car radios

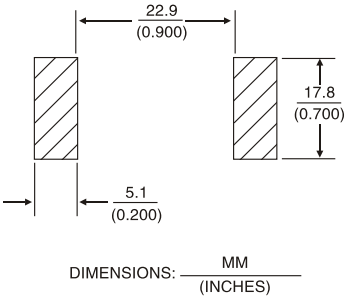
## Electrical Specifications

| Part No | Inductance 1kHz | | DCR Max. (mΩ) | Idc (A) | Dim,A Max. mm/(in.) |
|---|---|---|---|---|---|
| | (μH) | Tol.(%) | | | |
| STR8052B-1R0M | 1.0 | ±20 | 2 | 22.7 | 14.48/(0.57) |
| STR8052B-1R2M | 1.2 | ±20 | 2 | 20.3 | 14.48/(0.57) |
| STR8052B-1R5M | 1.5 | ±20 | 2 | 20.3 | 14.48/(0.57) |
| STR8052B-1R8M | 1.8 | ±20 | 3 | 18.5 | 14.48/(0.57) |
| STR8052B-2R2M | 2.2 | ±20 | 3 | 17.2 | 14.48/(0.57) |
| STR8052B-2R7M | 2.7 | ±20 | 4 | 16.0 | 14.48/(0.57) |
| STR8052B-3R3M | 3.3 | ±20 | 4 | 16.0 | 14.48/(0.57) |
| STR8052B-3R9M | 3.9 | ±20 | 4 | 15.1 | 14.48/(0.57) |
| STR8052B-4R7M | 4.7 | ±20 | 4 | 14.4 | 14.48/(0.57) |
| STR8052B-5R6M | 5.6 | ±20 | 5 | 13.7 | 14.48/(0.57) |
| STR8052B-6R8M | 6.8 | ±20 | 5 | 13.1 | 14.48/(0.57) |
| STR8052B-8R2M | 8.2 | ±20 | 6 | 12.6 | 14.48/(0.57) |
| STR8052B-100K | 10 | ±10 | 7 | 11.7 | 14.48/(0.57) |
| STR8052B-120K | 12 | ±10 | 7 | 11.3 | 14.48/(0.57) |
| STR8052B-150K | 15 | ±10 | 8 | 10.7 | 14.48/(0.57) |
| STR8052B-180K | 18 | ±10 | 9 | 10.2 | 14.48/(0.57) |
| STR8052B-220K | 22 | ±10 | 10 | 9.7 | 14.48/(0.57) |
| STR8052B-270K | 27 | ±10 | 14 | 8.2 | 13.72/(0.54) |
| STR8052B-330K | 33 | ±10 | 19 | 7.0 | 13.21/(0.52) |
| STR8052B-390K | 39 | ±10 | 20 | 6.8 | 15.75/(0.62) |
| STR8052B-470K | 47 | ±10 | 22 | 6.5 | 15.75/(0.62) |
| STR8052B-560K | 56 | ±10 | 24 | 6.2 | 15.75/(0.62) |
| STR8052B-680K | 68 | ±10 | 27 | 5.9 | 15.75/(0.62) |
| STR8052B-820K | 82 | ±10 | 29 | 5.6 | 15.75/(0.62) |
| STR8052B-101K | 100 | ±10 | 32 | 5.4 | 15.75/(0.62) |
| STR8052B-121K | 120 | ±10 | 35 | 5.1 | 15.75/(0.62) |
| STR8052B-151K | 150 | ±10 | 49 | 4.3 | 14.99/(0.59) |
| STR8052B-181K | 180 | ±10 | 66 | 3.7 | 13.46/(0.53) |
| STR8052B-221K | 220 | ±10 | 74 | 3.5 | 15.24/(0.60) |
| STR8052B-271K | 270 | ±10 | 82 | 3.4 | 15.24/(0.60) |
| STR8052B-331K | 330 | ±10 | 90 | 3.2 | 15.24/(0.60) |
| STR8052B-391K | 390 | ±10 | 98 | 3.1 | 15.24/(0.60) |
| STR8052B-471K | 470 | ±10 | 133 | 2.6 | 14.48/(0.57) |
| STR8052B-561K | 560 | ±10 | 146 | 2.5 | 14.48/(0.57) |
| STR8052B-681K | 680 | ±10 | 202 | 2.1 | 13.72/(0.54) |
| STR8052B-821K | 820 | ±10 | 221 | 2.0 | 15.24/(0.60) |
| STR8052B-102K | 1000 | ±10 | 244 | 1.9 | 15.24/(0.60) |

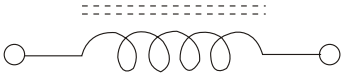
## Product Dimensions




## Pecommended Layout



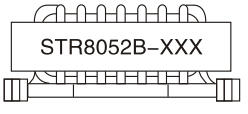

## Electrical Schematic



## General Specifications

Test Voltage 0.1V Reflow Soldering 245℃; 5 seconds Operating Temperature,–55℃ to +105℃ (Temperature rise included) Storage Temperature..–55℃ to +105 ℃ Resistance to Soldering Heat 260℃, 10 sec.max.

## Typical Part Marking




## Materials

Core Iron Wire Enameled copper Adhesive Epoxy resin Terminal Sn/Ag/Cu Rated Durrent See "Inductance vs.Current" table Temperature Rise 30℃ typical at Idc Packaning 77 pcs.per box

* RoHS Directive 2002/95/EC Jan 27 2003 Including Annes Specifications are subject to change without notice. Customers should verify actual device performance in their specific applications.

# High Current SMD Power Inductors

# STR8052B Series

## Inductance vs.Current

| L ( μ H) | Idc (A) to decrease L by 10% | Idc (A) to decrease L by 20% | Idc (A) to decrease L by 30% | Idc (A) to decrease L by 40% | Idc (A) to decrease L by 50% |
|---|---|---|---|---|---|
| 1 | 17.0 | 22.7 | 37.0 | 50.0 | 66.0 |
| 1.2 | 13.5 | 21.2 | 30.0 | 40.0 | 53.0 |
| 1.5 | 13.2 | 21.0 | 29.9 | 39.8 | 52.8 |
| 1.8 | 11.1 | 17.9 | 25.0 | 33.5 | 44.5 |
| 2.2 | 9.50 | 15.4 | 21.9 | 28.6 | 38.1 |
| 2.7 | 8.30 | 13.5 | 18.8 | 25.1 | 33.5 |
| 3.3 | 8.30 | 13.4 | 18.8 | 25.0 | 33.4 |
| 3.9 | 7.40 | 11.9 | 16.6 | 22.4 | 29.8 |
| 4.7 | 6.70 | 10.7 | 15.0 | 20.1 | 26.8 |
| 5.6 | 6.10 | 9.70 | 13.6 | 18.2 | 24.4 |
| 6.8 | 5.55 | 8.90 | 12.5 | 16.7 | 22.3 |
| 8.2 | 5.15 | 8.25 | 11.5 | 15.5 | 20.6 |
| 10 | 4.45 | 7.05 | 9.95 | 13.4 | 17.8 |
| 12 | 4.15 | 6.70 | 9.35 | 12.6 | 16.7 |
| 15 | 3.70 | 5.95 | 8.30 | 11.2 | 14.9 |
| 18 | 3.35 | 5.35 | 7.50 | 10.1 | 13.4 |
| 22 | 2.80 | 4.84 | 6.80 | 9.15 | 12.1 |
| 27 | 2.65 | 4.17 | 5.97 | 8.02 | 10.7 |
| 33 | 2.40 | 3.80 | 5.35 | 7.25 | 9.55 |
| 39 | 2.20 | 3.53 | 5.00 | 6.70 | 8.90 |
| 47 | 2.05 | 3.25 | 4.54 | 6.05 | 8.10 |
| 56 | 1.85 | 2.98 | 4.15 | 5.55 | 7.50 |
| 68 | 1.67 | 2.67 | 3.75 | 5.02 | 6.70 |
| 82 | 1.51 | 2.43 | 3.40 | 4.45 | 6.08 |
| 100 | 1.39 | 2.23 | 3.11 | 4.18 | 5.58 |
| 120 | 1.26 | 2.02 | 2.82 | 3.78 | 5.05 |
| 150 | 1.13 | 1.81 | 2.54 | 3.40 | 4.54 |
| 180 | 1.03 | 1.64 | 2.30 | 3.08 | 4.12 |
| 220 | 0.93 | 1.45 | 2.08 | 2.79 | 3.70 |
| 270 | 0.83 | 1.34 | 1.86 | 2.51 | 3.35 |
| 330 | 0.76 | 1.21 | 1.70 | 2.28 | 3.04 |
| 390 | 0.69 | 1.11 | 1.56 | 2.07 | 2.79 |
| 470 | 0.64 | 1.02 | 1.42 | 1.91 | 2.55 |
| 560 | 0.58 | 0.93 | 1.30 | 1.74 | 2.33 |
| 680 | 0.53 | 0.84 | 1.17 | 1.58 | 2.11 |
| 820 | 0.48 | 0.77 | 1.07 | 1.44 | 1.93 |
| 1000 | 0.43 | 0.69 | 0.97 | 1.30 | 1.74 |

Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.


# High Current SMD Power Inductors

# STR8052C Series

## Features

- Current rating up to 25.4 A
- Toroidal core
- RoHS compliant*

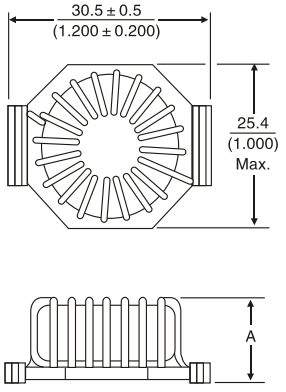
## Applications

- Input/output of DC/DC converters
- Industrial electronics
- Power supplies for:
  - Portable communications equipment
  - Camcorders
  - LCD Tvs
  - Car radios

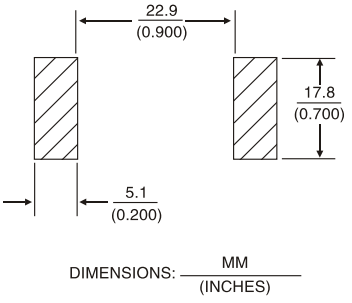
## Electrical Specifications

| Part No | Inductance 1kHz | | DCR Max. (mΩ) | Idc (A) | Dim,A Max. mm/(in.) |
|---|---|---|---|---|---|
| | (μH) | Tol.(%) | | | |
| STR8052C-1R0M | 1.0 | ±20 | 2 | 25.4 | 20.83/(0.82) |
| STR8052C-1R2M | 1.2 | ±20 | 2 | 25.4 | 20.83/(0.82) |
| STR8052C-1R5M | 1.5 | ±20 | 3 | 22.0 | 20.83/(0.82) |
| STR8052C-1R8M | 1.8 | ±20 | 3 | 22.0 | 20.83/(0.82) |
| STR8052C-2R2M | 2.2 | ±20 | 3 | 19.7 | 20.83/(0.82) |
| STR8052C-2R7M | 2.7 | ±20 | 3 | 19.7 | 20.83/(0.82) |
| STR8052C-3R3M | 3.3 | ±20 | 4 | 18.0 | 20.83/(0.82) |
| STR8052C-3R9M | 3.9 | ±20 | 4 | 18.0 | 20.83/(0.82) |
| STR8052C-4R7M | 4.7 | ±20 | 5 | 16.6 | 20.83/(0.82) |
| STR8052C-5R6M | 5.6 | ±20 | 5 | 15.6 | 20.83/(0.82) |
| STR8052C-6R8M | 6.8 | ±20 | 6 | 14.7 | 20.83/(0.82) |
| STR8052C-8R2M | 8.2 | ±20 | 6 | 14.7 | 20.83/(0.82) |
| STR8052C-100K | 10 | ±10 | 7 | 13.9 | 20.83/(0.82) |
| STR8052C-120K | 12 | ±10 | 8 | 12.7 | 20.83/(0.82) |
| STR8052C-150K | 15 | ±10 | 9 | 12.2 | 20.83/(0.82) |
| STR8052C-180K | 18 | ±10 | 9 | 11.8 | 20.83/(0.82) |
| STR8052C-220K | 22 | ±10 | 11 | 11.0 | 20.83/(0.82) |
| STR8052C-270K | 27 | ±10 | 12 | 10.4 | 20.83/(0.82) |
| STR8052C-330K | 33 | ±10 | 13 | 10.1 | 20.83/(0.82) |
| STR8052C-390K | 39 | ±10 | 14 | 9.6 | 20.83/(0.82) |
| STR8052C-470K | 47 | ±10 | 19 | 8.2 | 20.07/(0.79) |
| STR8052C-560K | 56 | ±10 | 21 | 7.9 | 20.07/(0.79) |
| STR8052C-680K | 68 | ±10 | 29 | 6.7 | 19.56/(0.77) |
| STR8052C-820K | 82 | ±10 | 32 | 6.4 | 20.10/(0.87) |
| STR8052C-101K | 100 | ±10 | 35 | 6.1 | 20.10/(0.87) |
| STR8052C-121K | 120 | ±10 | 39 | 5.8 | 20.10/(0.87) |
| STR8052C-151K | 150 | ±10 | 43 | 5.5 | 20.10/(0.87) |
| STR8052C-181K | 180 | ±10 | 47 | 5.3 | 20.08/(0.83) |
| STR8052C-221K | 220 | ±10 | 52 | 5.0 | 20.08/(0.83 |
| STR8052C-271K | 270 | ±10 | 72 | 4.2 | 20.32/(0.80) |
| STR8052C-331K | 330 | ±10 | 100 | 3.6 | 19.81/(0.78) |
| STR8052C-391K | 390 | ±10 | 108 | 3.5 | 19.81/(0.78) |
| STR8052C-471K | 470 | ±10 | 119 | 3.3 | 21.59/(0.85) |
| STR8052C-561K | 560 | ±10 | 130 | 3.2 | 21.59/(0.85) |
| STR8052C-681K | 680 | ±10 | 142 | 3.0 | 21.59/(0.85) |
| STR8052C-821K | 820 | ±10 | 157 | 2.9 | 21.59/(0.85) |
| STR8052C-102K | 1000 | ±10 | 215 | 2.5 | 20.83/(0.82) |

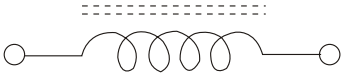
## Product Dimensions




## Pecommended Layout



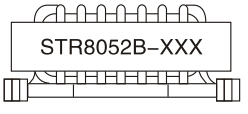

## Electrical Schematic



## General Specifications

Test Voltage 0.1V Reflow Soldering 245℃; 5 seconds Operating Temperature,–55℃ to +105℃ (Temperature rise included) Storage Temperature..–55℃ to +105 ℃ Resistance to Soldering Heat 260℃, 10 sec.max.

## Typical Part Marking




## Materials

Core Iron Wire Enameled copper Adhesive Epoxy resin Terminal Sn/Ag/Cu Rated Durrent See "Inductance vs.Current" table Temperature Rise 30℃ typical at Idc Packaning 77 pcs.per box

* RoHS Directive 2002/95/EC Jan 27 2003 Including Annes Specifications are subject to change without notice. Customers should verify actual device performance in their specific applications.

# High Current SMD Power Inductors

# STR8052C Series

## Inductance vs.Current

| L ( μ H) | Idc (A) to decrease L by 10% | Idc (A) to decrease L by 20% | Idc (A) to decrease L by 30% | Idc (A) to decrease L by 40% | Idc (A) to decrease L by 50% |
|---|---|---|---|---|---|
| 1 | 15.3 | 24.5 | 34.4 | 45.9 | 61.3 |
| 1.2 | 17.4 | 27.9 | 39.2 | 52.2 | 69.7 |
| 1.5 | 15.8 | 25.3 | 35.6 | 47.4 | 63.3 |
| 1.8 | 14.6 | 23.4 | 32.9 | 43.8 | 58.5 |
| 2.2 | 13.1 | 21.0 | 29.5 | 39.3 | 52.5 |
| 2.7 | 11.7 | 18.7 | 26.3 | 35.1 | 46.9 |
| 3.3 | 15.1 | 24.2 | 34.0 | 45.3 | 60.5 |
| 3.9 | 9.70 | 15.5 | 21.8 | 29.1 | 38.9 |
| 4.7 | 8.90 | 14.3 | 20.0 | 26.7 | 35.7 |
| 5.6 | 8.10 | 13.0 | 18.2 | 24.3 | 32.4 |
| 6.8 | 7.40 | 11.9 | 16.7 | 22.2 | 29.6 |
| 8.2 | 6.70 | 10.7 | 15.1 | 20.1 | 26.8 |
| 10 | 6.10 | 9.77 | 13.7 | 18.3 | 24.4 |
| 12 | 5.60 | 8.97 | 12.6 | 16.8 | 22.4 |
| 15 | 4.90 | 7.85 | 11.0 | 14.7 | 19.6 |
| 18 | 4.60 | 7.37 | 10.4 | 13.8 | 18.4 |
| 22 | 4.10 | 6.57 | 9.23 | 12.3 | 16.4 |
| 27 | 3.70 | 5.93 | 8.33 | 11.1 | 14.8 |
| 33 | 3.35 | 5.37 | 7.54 | 10.1 | 13.4 |
| 39 | 3.10 | 4.97 | 6.98 | 9.30 | 12.4 |
| 47 | 2.80 | 4.49 | 6.30 | 8.40 | 11.2 |
| 56 | 2.55 | 4.09 | 5.74 | 7.65 | 10.2 |
| 68 | 2.35 | 3.76 | 5.29 | 7.05 | 9.41 |
| 82 | 2.15 | 3.44 | 4.84 | 6.45 | 8.61 |
| 100 | 1.92 | 3.08 | 4.32 | 5.76 | 7.69 |
| 120 | 1.75 | 2.80 | 3.94 | 5.25 | 7.01 |
| 150 | 1.58 | 2.53 | 3.56 | 4.74 | 6.33 |
| 180 | 1.43 | 2.29 | 3.22 | 4.29 | 5.73 |
| 220 | 1.30 | 2.08 | 2.93 | 3.90 | 5.21 |
| 270 | 1.18 | 1.89 | 2.66 | 3.54 | 4.73 |
| 330 | 1.11 | 1.78 | 2.50 | 3.33 | 4.45 |
| 390 | 0.97 | 1.55 | 2.18 | 2.91 | 3.89 |
| 470 | 0.89 | 1.43 | 2.00 | 2.67 | 3.57 |
| 560 | 0.81 | 1.30 | 1.82 | 2.43 | 3.24 |
| 680 | 0.74 | 1.19 | 1.67 | 2.22 | 2.96 |
| 820 | 0.67 | 1.07 | 1.51 | 2.01 | 2.68 |
| 1000 | 0.61 | 0.98 | 1.37 | 1.83 | 2.44 |

Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

# SMD HIGH CURRENT TOROID POWER INDUCTORS
# STRD SERIES

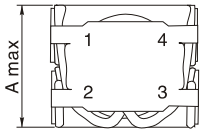
## FEATURES:

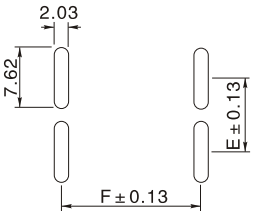
- Toroid winding eliminates stray electromagnetic emissions
- Base material meets flammability requirements of UL 94V–0
- Surface mounting
- Current Rating: up to 23.8Adc
- Frequency Range: up to 1MHz
- RoHS compliant

## ELECTRICAL CHARACTERISTICS:@25℃

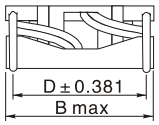
| Part Number | Inductance L0(uH) ± 20% 100KHz,0.1V | Rated current IDC (A) | Inductance Lidc(uH) ± 20% 100KHz,0.1V | DCR (mΩ). | Reference ET (Volt–usec) |
|---|---|---|---|---|---|
| STRD37–770M | 77 | 1.1 | 43.6 | 309 | 7.83 |
| STRD44–390M | 39.5 | 2.7 | 21.9 | 90.5 | 6.9 |
| STRD50–6R5M | 6.575 | 6.4 | 4.025 | 23 | 3.135 |
| STRD44H–R88M | 0.88 | 23.8 | 0.53 | 3 | 1 |
| STRD50H–2R1M | 2.1 | 21 | 1.1 | 2.5 | 1.75 |
| STRD68H–4R0M | 4 | 22.4 | 2.1 | 3.4 | 3.25 |

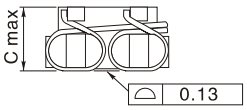
## PHYSICAL CHARACTERISTICS:



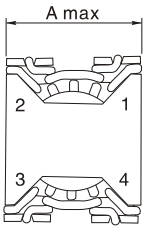



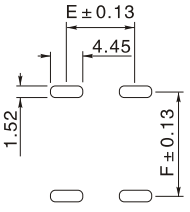

Suggested PCB Layout



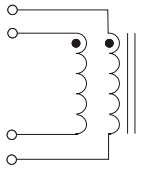



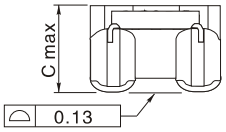

## WINDING:

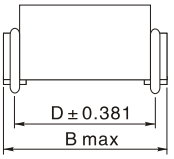



Suggested PCB Layout






| Part No. | A(Max) | B(Max) | C(Max) | D(±0.381) | E(±0.13) | F(±0.13) |
|---|---|---|---|---|---|---|
| STRD44H–R88M | 18.16 | 21.97 | 9.91 | 10.3 | 9.14 | 19.56 |
| STRD50H–2R1M | 20.32 | 23.11 | 9.91 | 20.32 | 11.18 | 20.57 |
| STRD68H–4R0M | 25.4 | 28.19 | 9.91 | 25.4 | 15.75 | 25.65 |
| STRD37–770M | 14.22 | 16.38 | 8.89 | 13.21 | 8.64 | 13.46 |
| STRD44–390M | 14.99 | 18.16 | 9.91 | 15.24 | 9.4 | 15.49 |
| STRD50–6R5M | 17.02 | 19.56 | 9.91 | 16.51 | 11.3 | 16.76 |

## NOTES:

- Electrical specifications at 25℃
- Inductance tested at 100 kHz, 0.1 Vrms on HP 4192A
- Operating temperature: –40℃ to +130℃(Including self temperature rise)
- Reference values are for an inductor with a 55℃ temperature rise.The core loss is 10% of the copper loss at the ET listed and 500kHz.
- Core does not saturate abruptly. The ET and DC current are limited by the desired inductance and temperature rise.
- In high volt–time applications, additional heating in the component can occur due to core losses in the inductor which may necessitate derating the current in order to limit the temperature rise of the component. In order to determine the approximate total losses (or temperature rise) for a given application, both copper and core losses should be taken into account.