

PI13038Q1 TYPE

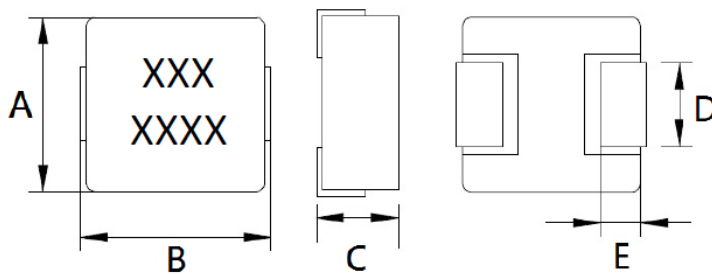
●FEATURE

1. Shielded construction · Frequency range up to 5MHz
2. AEC-Q200 Grade 1 qualified

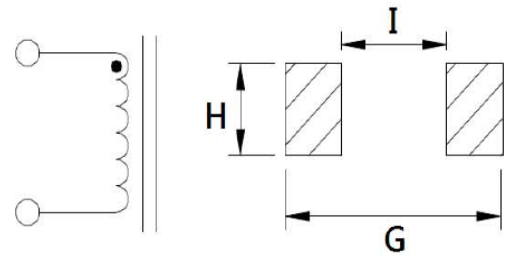
●Applications

1. Notebook, server application, High current power supplier

●Shape and Dimension



●Schematics and Land Patterns(mm)



A=12.90m/m Max ; B=14.00m/m Max ; C=3.80m/m Max. ; D=refer Note.7 ; E=2.40m/m Ref. ; G=14.00m/m Ref. ; H=5.00m/m Ref. ; I=7.60m/m Ref.

●Specification

| P/N | L (μ H) | RDC (m Ω) Typical | RDC (m Ω)Max | Isat (A) | Irms (A) |
|----------------|-----------------|------------------------------|-------------------------|-------------|-------------|
| PI13038Q1-R10M | 0.10 \pm 20% | 0.80 | 0.96 | 84 | 43 |
| PI13038Q1-R15M | 0.15 \pm 20% | 1.0 | 1.2 | 75 | 41 |
| PI13038Q1-R22M | 0.22 \pm 20% | 1.1 | 1.3 | 65 | 38.5 |
| PI13038Q1-R33M | 0.33 \pm 20% | 1.3 | 1.5 | 62 | 38.5 |
| PI13038Q1-R47M | 0.47 \pm 20% | 1.6 | 2.0 | 55 | 32 |
| PI13038Q1-R60M | 0.60 \pm 20% | 1.8 | 2.2 | 51 | 29 |
| PI13038Q1-R68M | 0.68 \pm 20% | 2.3 | 2.5 | 49 | 28 |
| PI13038Q1-R82M | 0.82 \pm 20% | 2.6 | 3.0 | 44 | 25 |
| PI13038Q1-1R0M | 1.0 \pm 20% | 3.3 | 3.5 | 40 | 24 |
| PI13038Q1-1R5M | 1.5 \pm 20% | 5.1 | 5.5 | 35 | 19 |
| PI13038Q1-1R8M | 1.8 \pm 20% | 6.0 | 7.0 | 30 | 16.5 |
| PI13038Q1-2R2M | 2.2 \pm 20% | 7.2 | 8.0 | 29 | 16 |
| PI13038Q1-3R3M | 3.3 \pm 20% | 11.0 | 12.0 | 27 | 12 |
| PI13038Q1-4R7M | 4.7 \pm 20% | 14.3 | 15.0 | 24 | 10 |
| PI13038Q1-5R6M | 5.6 \pm 20% | 17.1 | 18.0 | 19 | 9.5 |
| PI13038Q1-6R8M | 6.8 \pm 20% | 19.8 | 22.0 | 18 | 9.0 |
| PI13038Q1-8R2M | 8.2 \pm 20% | 24.8 | 28.0 | 16 | 8.5 |
| PI13038Q1-100M | 10 \pm 20% | 30.4 | 34.0 | 14 | 7.0 |

Note1. Measurement frequency of Inductance value : at 100KHz

Note2. Measurement ambient temperature of L, DCR and IDC : at 25°C

Note3. Isat: DC current at which the inductance drops 20%(typ) from its value without current

Note4. Irms: Average current for 40°C temperature rise from 25°C ambient(typical)

Note5. Inductance tolerance: M: $\pm 20\%$

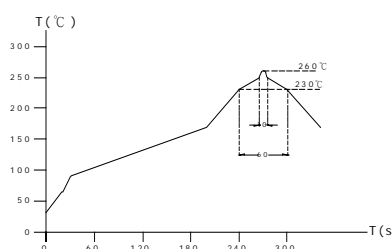
Note6. Packaging: Taping ; Quantity: 500pcs/reel

Note7. D Dimension range: R10~1R0, D=4.0 \pm 0.5mm ; 1R5, D=3.0 \pm 0.5mm ; 1R8~100, D=4.7 \pm 0.3 mm

GENERAL CHARACTERISTICS

1. Operating temperature range: -55 TO + 125°C (Includes temperature when the coil is heated)
2. High temperature exposure(storage) refer MIL-STD-202 Method 108: 1000 hrs at rated operating temperature(e.g. 125°C). Part can be stored for 1000 hrs @125°C. Unpowered. Measurement at 24±4 hours after test conclusion.
3. Temperature cycling refer JESD22 Method JA-104: 1000 cycles(-55 TO + 125°C). Measurement at 24±4 hours after test conclusion. 30 min maximum dwell time at each temp. extreme. 1 min. maximum transition time.
4. Biased Humidity refer MIL-STD-202 Method 103: 1000 hours 85°C/85%RH. Unpowered. Measurement at 24±4 hours after test conclusion.
5. Operational Life refer MIL-PRF-27: 1000 hrs. at 125 °C tested. Measurement at 24±4 hours after test conclusion.
6. External Visual refer MIL-STD-883 Method 2009: Inspect device construction, marking and workmanship.
7. Physical Dimension refer JESD22 Method JB-100: Verify physical dimensions to the applicable device detail specification.
8. Resistance to Solvents refer MIL-STD-202 Method 215: Add aqueous wash chemical - OKEM clean or equivalent.
9. Mechanical Shock refer MIL-STD-202 Method 213: Figure 1 of Method 213. Condition C.
10. Vibration refer MIL-STD-202 Method 204: 5g;s for 20 minutes, 12 cycles each of 3 orientations. Test from 10-2000 Hz.
11. Resistance to soldering Heat refer MIL-STD-202 Method 210: Condition B No pre-heat of samples. Single wave solder-procedure 2 for SMD and procedure 1 for leaded with solder within 1.5mm of device body.
12. ESD refer AEC-Q200-002 or ISO/DIS 10605: Direct contact discharge 2kV.
13. Solderability refer J-STD-002: For both Leaded & SMD. Magnification 50X. Conditions: Leaded, Method A@235°C ,category 3 ; SMD, a)Method B, 4hrs@155°C dry heat @235°C , b)Method B@215°C category 3., c)Method D category 3@260°C
14. Electrical Characterization refer spec: Show Min, Max Mean and Standard deviation at room from Min and Max temperature.
15. Flammability refer UL-94: V-0 or V-1 Acceptable.
16. Board Flex refer AEC-Q200-005: 60 sec minimum holding time.
17. Terminal Strength(SMD) refer AEC-Q200-006
18. Reflow profile recommend:

Lead-free heat endurance test



Lead-free the recommended reflow condition

