PI10040Q1 TYPE

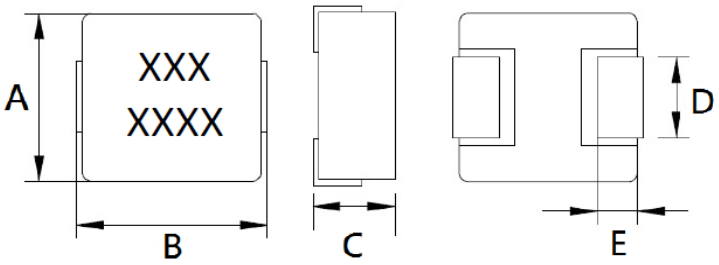
●FEATURE

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

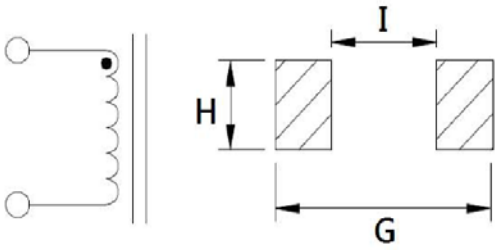
●Applications

1. Notebook, server application, High current power supplier

●Shape and Dimension



●Schematics and Land Patterns(mm)



A=10.30m/m Max ; B=11.50m/m Max ; C=4.00m/m Max. ; D=refer Note.6 ; E=2.00m/m Ref. ; G=12.00m/m Ref. ; H=4.6m/m Ref. ; I=5.00m/m Ref.

●Specification

P/N	L (μH)	RDC (mΩ) Typical	RDC (mΩ) Max	Isat (A)	Irms (A)
PI10040Q1-R36M	0.36±20%	0.85	1.20	50	32
PI10040Q1-R47M	0.47±20%	1.80	2.00	41	25
PI10040Q1-R56M	0.56±20%	2.30	2.50	40	22
PI10040Q1-1R0M	1.0±20%	3.90	4.00	36	19
PI10040Q1-1R5M	1.5±20%	5.10	6.50	20	16
PI10040Q1-2R2M	2.2±20%	7.50	8.50	19	13
PI10040Q1-3R3M	3.3±20%	10.3	11.5	16	11
PI10040Q1-4R7M	4.7±20%	14.5	16.5	14	8.0
PI10040Q1-5R6M	5.6±20%	17.6	23.5	12	8.0
PI10040Q1-6R8M	6.8±20%	21.2	25.5	11	7.5
PI10040Q1-100M	10±20%	37.5	42.0	8	5.0
PI10040Q1-220M	22±20%	85.0	92.0	6	3.5
PI10040Q1-330M	33±20%	125	150	4	3.0
PI10040Q1-470M	47±20%	170	191	3	3.0
PI10040Q1-680M	68±20%	280	340	3	2.5

Note1. Measurement frequency of Inductance value : at 100KHz

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

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

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

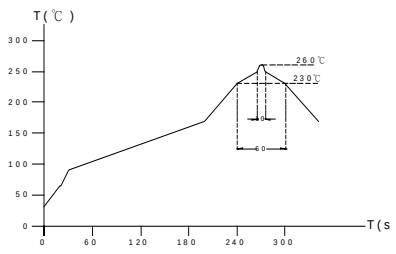
Note5. Inductance tolerance: M: ±20%

Note6. D Dimension range: R19~R56, D=3.0±0.5mm；1R0~680, D=4.1±0.3 mm

GENERAL CHARACTERISTICS

1. Operating temperature range: -55 TO + 125℃(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℃). Part can be stored for 1000 hrs @125℃. Unpowered. Measurement at 24±4 hours after test conclusion.
3. Temperature cycling refer JESD22 Method JA-104: 1000 cycles(-55 TO + 125℃). 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℃/85%RH. Unpowered. Measurement at 24±4 hours after test conclusion.
5. Operational Life refer MIL-PRF-27: 1000 hrs. at 125 ℃ 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℃,category 3 ; SMD, a)Method B, 4hrs@155℃ dry heat @235℃, b)Method B@215℃ category 3., c)Method D category 3@260℃
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