Powering Business Worldwide

Engineering Product Specification

DRAQ75-150-R Revision C

TITLE: Shielded Drum Inductor 15uH @ 1.2A (peak), SMT, 4 Pads

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1 Specification

1.1 Electrical parameters Parallel Connections (1,2 - 3,4)

Test item	Test pin	Test condition	Spec
OCL	1,2 – 3,4	@0.25Vrms, 100KHz	15.14 uH ± 25%
OCL	1,2 – 3,4	@0.25 Vrms, 100kHz & 2.36 ADC	9.08 uH min
Turns Ratio	(1 - 3):(2 – 4)	@0.25 Vrms, 100kHz	1:1(±5%)
DCR	(1 – 3)	@ 25ºC	160.0mΩ max
DCR	(2 – 4)	@ 25ºC	160.0mΩ max
Hi-Pot	1 to pin 4	500Vdc 1.0 mA, 1 sec	500Vdc
Irms	1,2 – 3,4	For approximately 40ºC rise above ambient	2.80 A Typ
$Isat_1$	1,2 – 3,4	@ 0.25V, 100KHz	2.36 A Typ
$Isat_2$	1,2 – 3,4	@ 0.25V, 100KHz	1.89 A Typ
Tem. Range		@ Irms	-40°C ~ 165°C
K Factor	1,2 – 3,4		67.5

1. Open Circuit Inductance (OCL) Test Parameters: 100kHz, 0.25V_{rms}, 0.0Adc, +25 ℃
2. Full Load Inductance (FLL) Test Parameters: 100kHz, 0.25V_{rms}, I_{sat1}, +25 ℃
3. Measure Hi-pot from winding to winding
4. I_{RMS}: DC current for an approximate temperature rise of 40℃ without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed 165 ℃ under worst case operating conditions verified in the end application.
5. I_{SAT1}: Peak current for approximately 30% roll-off at +25 ℃ 2.36 A
6. I_{SAT2}: Peak current for approximately 40% roll-off at +125 ℃ 1.89 A
7. K-factor: Used to determine Bp-p for core loss (see graph). Bp-p = K * L * ΔI * 10^{-3}, Bp-p : (Gauss), K: (K-factor from table), L: (inductance in nH), ΔI (peak-to-peak ripple current in amps)
8. Storage Temperature: -40 ℃ to +165 ℃
9. Operating Temperature: -40 ℃ to +165 ℃ (ambient + self-temperature rise)
10. Resistance to soldering heat: 260±5 ℃ for 10 ~ 11 seconds

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2 Specification

1.2 Electrical parameters Series (1 – 4; 2,3 tied)

Test item	Test pin	Test condition	Spec
OCL	1 – 4	@0.25 Vrms, 100KHz	60.56uH ± 25%
OCL	1 – 4	@0.25 Vrms, 100kHz & 1.18 ADC	36.32 uH min
DCR	1 – 4	@ 25ºC	1.08Ω max
Irms	1 – 4	For approximately 40ºC rise above Ambient	1.40 A Typ
$Isat_1$	1 – 4	@ 0.25 V, 100KHz	1.18 Typ
$Isat_2$	1 – 4	@ 0.25 V, 100KHz	0.95 A Typ
Tem. Range	1 - 4	@ Irms	-40°C ~ 165°C
K Factor	1 – 4		33.8

1. Open Circuit Inductance (OCL) Test Parameters: 100kHz, 0.25 V_{rms}, 0.0Adc, +25 ℃
2. Full Load Inductance (FLL) Test Parameters: 100kHz, 0.25 V_{rms}, I_{sat1}, +25 ℃
3. Measure Hi-pot from winding to winding
4. I_{RMS}: DC current for an approximate temperature rise of 40℃ without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed 165 ℃ under worst case operating conditions verified in the end application.
5. I_{SAT1}: Peak current for approximately 30% roll-off at +25 ℃ 1.18 A
6. I_{SAT2}: Peak current for approximately 40% roll-off at +125 ℃ 0.95 A
7. K-factor: Used to determine Bp-p for core loss (see graph). Bp-p = K * L * ΔI * 10^{-3}, Bp-p : (Gauss), K: (K-factor from table), L: (inductance in nH), ΔI (peak-to-peak ripple current in amps)
8. Storage Temperature: -40 ℃ to +165 ℃
9. Operating Temperature: -40 ℃ to +165 ℃ (ambient + self-temperature rise)
10. Resistance to soldering heat: 260±5 ℃ for 10 ~ 11 seconds

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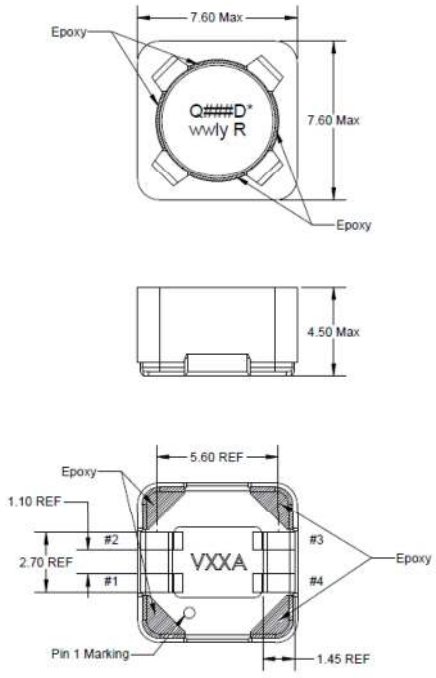
1.3 Schematic

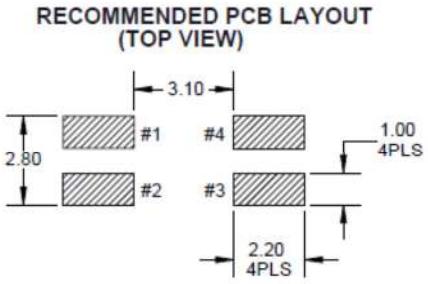
1.4 Mechanical Parameters



Notes:

1. All dimensions are in mm unless otherwise specified.
2. Tolerances are ±0.15 millimeters unless stated otherwise.
3. All soldering surfaces must be coplanar within 0.1 millimeters.
4. PCB tolerances are ±0.1 millimeters unless stated otherwise.
5. Stamping: Q designate 4 terminals;### inductance code9kast 3 digits of part number; D = shift# * = production line #; wwly = date code; R = revision level
6. Terminations matte tin over nickel over copper.
7. Moisture Sensitivity Level (MSL) 1

1.5 PAD layout (Recommended. Typical dimensions in mm.)



3 Environmental compliance requirement

Refer Division files: F306B-003-03 & CBA309A-001

1. RoHS
2. REACH
3. PFOS & PFOA
4. Halogen free, Sb_2O_3 and Red Phosphorus