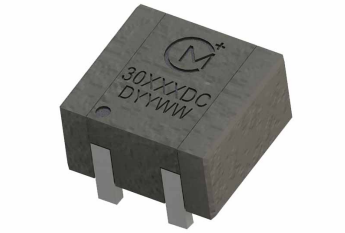
3000D Series

Surface Mount Power Inductor

Murata Power Solutions



FEATURES

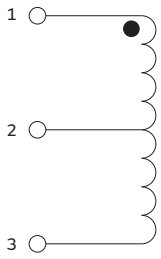
- Low-profile surface mount design
- Inductance range from 90nH to 155nH
- Rated current up to 80A
- 2-Phase inductor
- Custom inductance values available
- RoHS compliant

PRODUCT OVERVIEW

The 3000D series are a range of high-current, surface-mount inductors, suited to a variety of applications. The products are designed for noise suppression in high-frequency, high-current switching power supplies, DC-DC converters, DC-AC inverters and VRMs.

The 3000D series is rated to MSL 1, and is compatible with a peak reflow solder temperature of 245˚C as per J-STD-020.

PIN CONNECTIONS (TOP VIEW)



SELECTION GUIDE

Order Code	Inductance (100kHz, 0.1V) 1&2, 2&3	I_{DC}[3] 1&3	I_{SAT} (Typ.)[4] 1&2, 2&3		DC Resistance 1&2, 2&3
	±10%	Typ.	25˚C	125˚C	±5%
	nH	A	A	A	mΩ
30900DC	90	40	80	65	0.28
30111DC	105	40	72	59	0.28
30131DC	125	40	60	49	0.28
30161DC	155 ±15%	40	46	38	0.28

ABSOLUTE MAXIMUM RATINGS

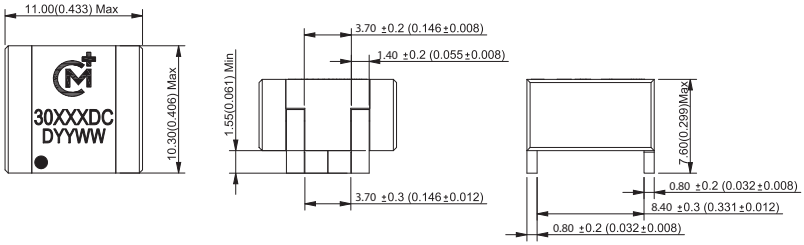
Operating temperature range[2]	-40°C to +125°C
Storage temperature range	-40°C to +125°C

SOLDERING INFORMATION[1]

Peak reflow solder temperature	245°C
Pin finish	Pure tin
Moisture sensitivity level	1

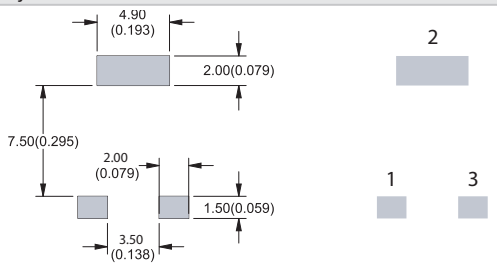
Mechanical Dimensions

Mechanical Dimensions



Weight Typ. = 2.9g

Recommended Pad Layout



Unless otherwise stated, all dimensions in mm (inches)

RoHS COMPLIANT

For full details go to
https://www.murata.com/en-global/products/power/rohs

Specifications typical at T_A = 25°C

1 For further information, please visit https://www.murata.com/en-global/products/power/rohs

2 Includes temperature rise.

3 I_{DC} is when its temperature reaches 50°C above ambient. Care must be taken to ensure the component temperature does not exceed the absolute maximum rating.

4 I_{SAT} is the value at which the inductance falls to 80% of its nominal value.

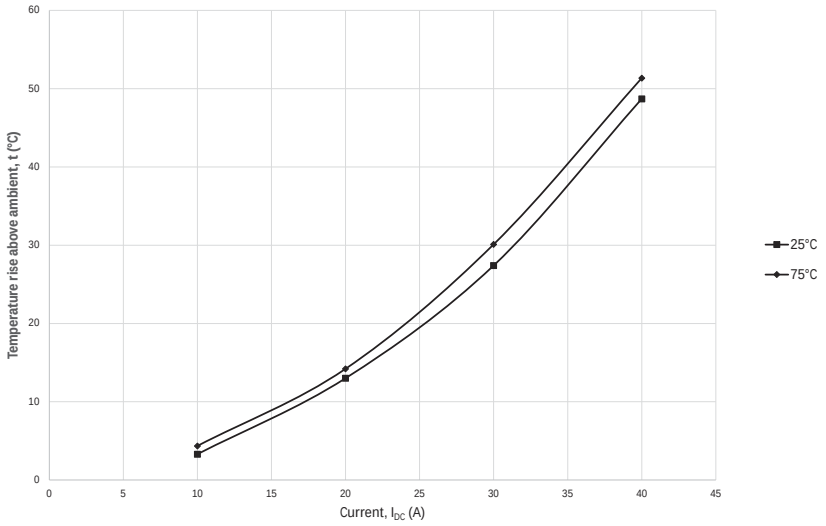
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ENVIRONMENTAL VALIDATION TESTING

The following tests have been conducted on this product series, as part of our design verification process. The datasheet characteristics specify user operating conditions for this series, please contact Murata if further information about the tests is required.

Test	Standard	Condition
Temperature Cycling	MIL-STD-883 Method 1010, Condition B	10 cycles. -55°C to +125°C. The dwell time shall not be less than 10min.
Humidity bias	JEDEC JESD22-A101	85°C ± 2°C, 85% ± 5% R.H. for >1000 hours
High Temperature Storage life	JEDEC JESD22-A103, Conditon A	125°C +10/-0°C for ≥1000 hours
Vibration	MIL-STD-883 Method 2007, Condition A	20G for 5 minutes with 4 repetitions, the entire frequency (20 to 2000 Hz and return to 20Hz) shall be traversed in not less than 4 minutes. This cycle shall be performed 4 times in each of the orientations X, Y, and Z (total of 12 times)
Shock	Based on MIL-STD-883 Method 2002, Condition A	5 pulses 50G peak, 1ms, x, y, z axes bi-directional
Solderability	EIA/IPC/ECA J-STD-002 Test S1	Parts are pre-conditioned in a steam ager for 8 hours at a temperature of 93°C, within 72 hours they are dipped in flux for 10 seconds. Followed by reflow at 245°C ±5°C (96SC tin/silver/copper)
Solvent cleaning	Resistance to cleaning agents	Solvent – Novec 71IPA & Topklean EL-20A. Pulsed ultrasonic immersion 45°C - 65°C
Moisture sensitivity level (MSL 1)	Based on IPC/JEDEC J-STD-020	Bake samples at 125 +5/-0°C for 24 hours minimum before conditioning in the temperature/humidity chamber for 168 hours at 85°C/85%RH and Pb Free JEDEC Max profile conditioning. Subjected to 3 cycles with electrical testing, co-planarity inspection before and after.

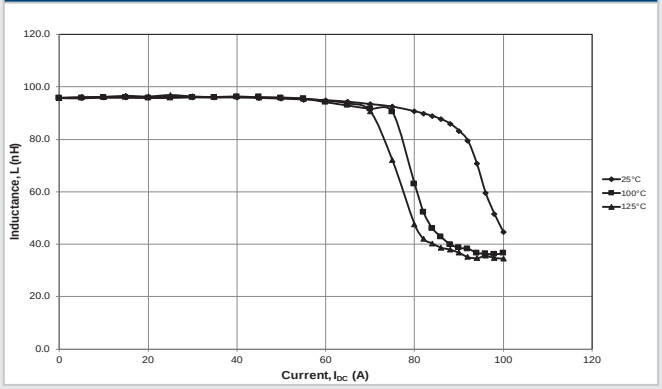
TEMPERATURE Vs CURRENT



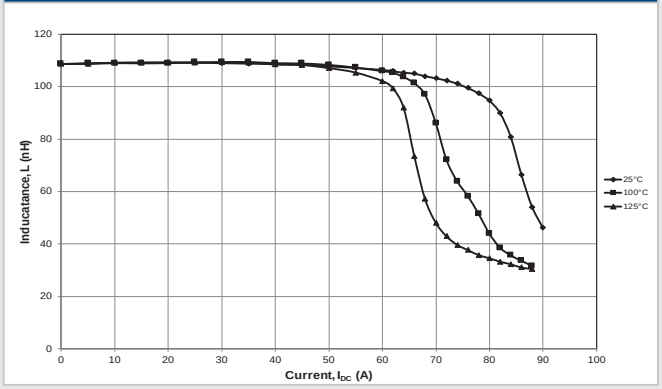
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INDUCTANCE Vs CURRENT

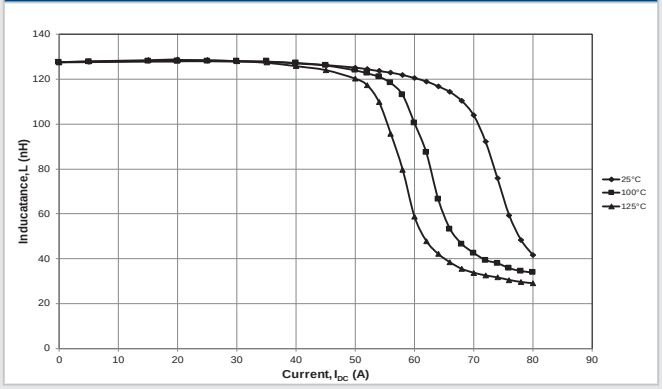
30900DC



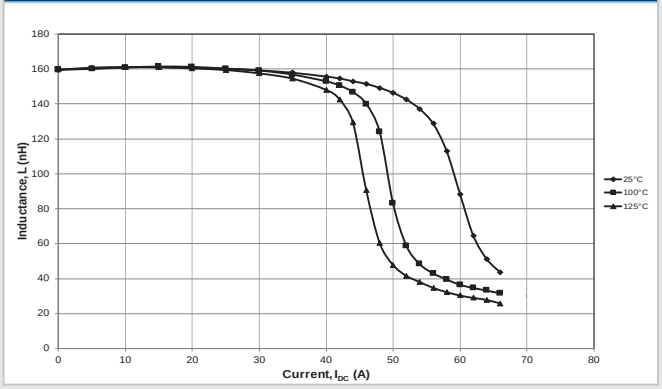
30111DC



30131DC



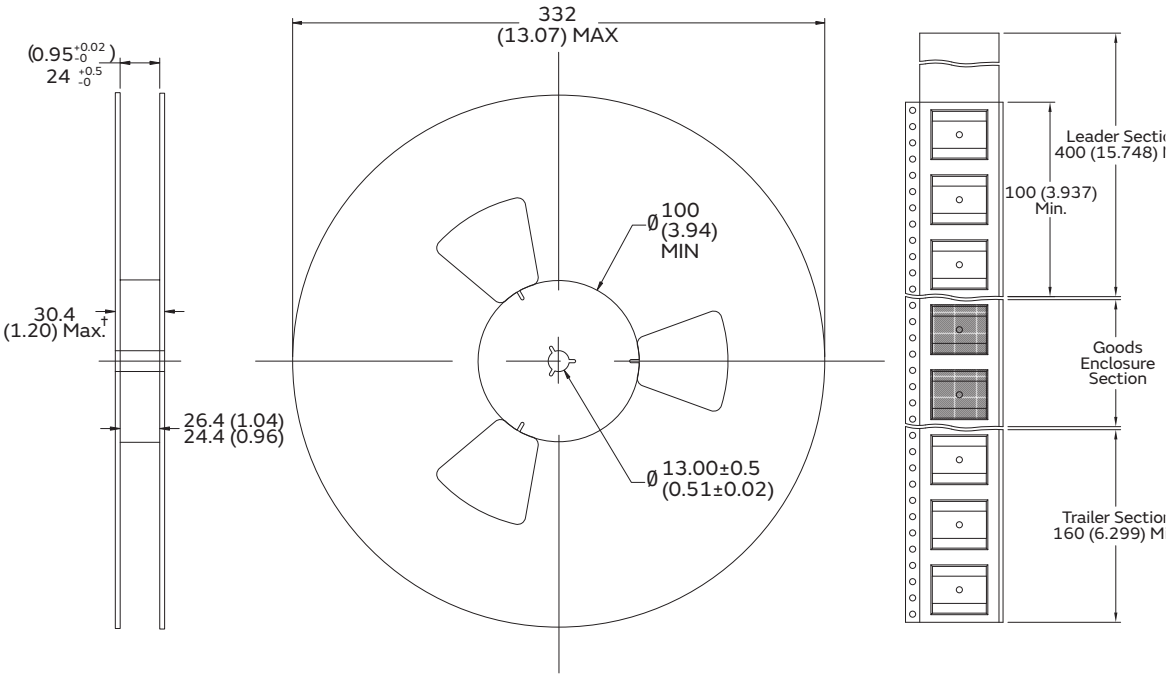
30161DC



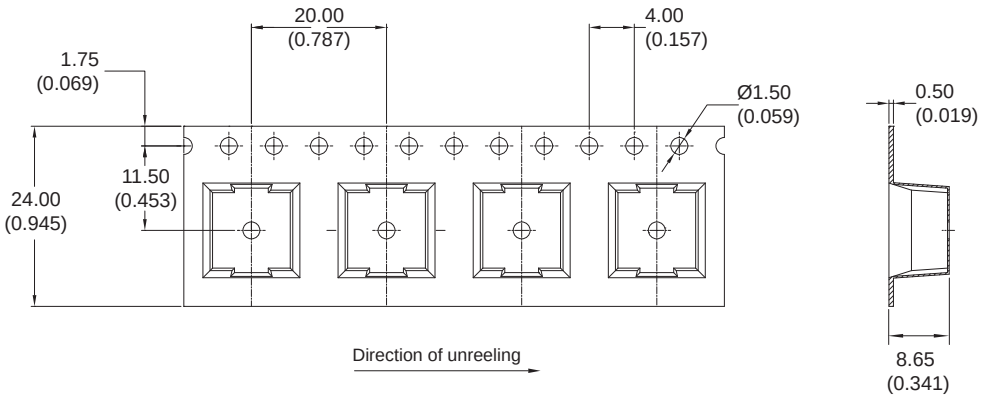
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PACKAGE SPECIFICATIONS

Reel Dimensions



Reel Dimensions



Reel quantity: 300

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- Undersea equipment
- Power plant control equipment
- Medical equipment
- Transportation equipment (automobiles, trains, ships, etc.)
- Traffic signal equipment
- Disaster prevention / crime prevention equipment
- Data Processing equipment

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