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## SPECIFICATION FOR APPROVAL

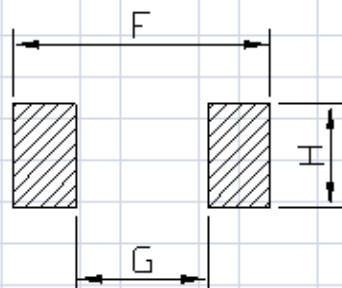
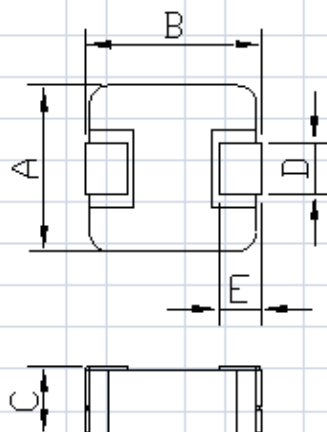
**Part Number: TSM-0603-4R7M**

Customer Part No.	
Xmultiple Part No.	<b>TSM-0603-4R7M</b>
Product Description	<b>SMD Inductor</b>
Quantity	
Documents Included	1. Specification Drawing
	2. Test Reports
	3. Materials Specification
	4. SGS Report

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
APPROVED BY		
DATE:		

**XMULTIPLE Technologies, Inc.**  
1060 Los Angeles Avenue, Simi Valley, CA 93065  
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[www.xmultiple.com](http://www.xmultiple.com) and [www.xmultiple.net](http://www.xmultiple.net)

ITEM P/N	TSM0603-4R7M	TEST INSTRUMENT	Zentech-3305 / Zentech502BC
PRODUCT	SMD Inductor	TEST FREQUENCY	100 kHz / 1.0V

**PACKING DIMENSIONS (mm)**RECOMMENDED  
LAND PATTERN

TSM0603-4R7M	Dimensions
A	6.6 ± 0.3
B	7.2 ± 0.3
C	3.0 MAX
D	3.0 ± 0.3
E	1.6 ± 0.5
F	7.4 Typ
G	3.7 Typ
H	3.5 Typ

**EXPLANATION OF PART NUMBERS**

1	2	3	4	5	6	7	8	9	10	11	12	
	T	S	M	0	6	0	3	-	4	R	7	M
	<u>Serial Codes</u>				<u>Size</u>				<u>Inductance Code</u>			

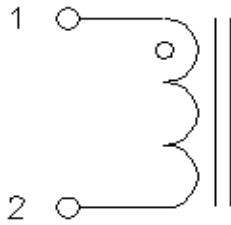
**ELECTRICAL CHARACTERISTICS**

ITEM P/N	@ 26 °C Ambient Temperature				DCR mΩ @ 25 °C Typical	DCR mΩ @ 25 °C MAX
	INDUCTANCE		Typical Heat Rating DC Current (A) (I <sub>dc</sub> )	Typical Saturation DC Current (A) (I <sub>sat</sub> )		
	Lo (μH)	TOLERANCE				
TSM0603-4R7M	4.7	±20%	5.5	10	37	42

- ⊙ All test Data is referenced to 25°C ambient
- ⊙ Typical Heat Rating DC Current would cause an approximately Δ T of 40°C
- ⊙ Typical Saturation DC Current would cause Lo to drop approximately 20%
- ⊙ The Part temperature (ambient + Δ T) should not exceed 125°C under worst case operating conditions.
- ⊙ Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all effect the part temperature. Part temperature should be verified in the end application.

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## CONNECTIONS

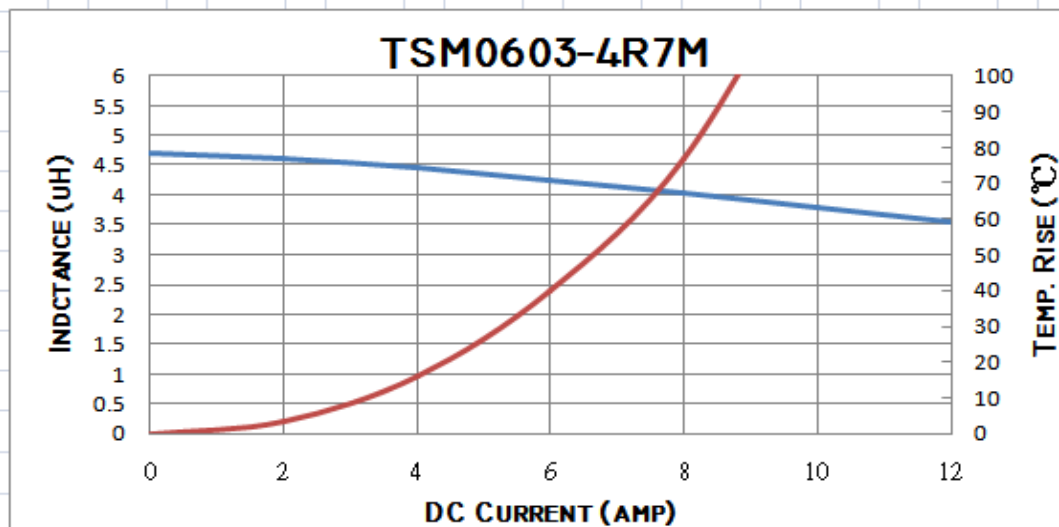


## MARKING



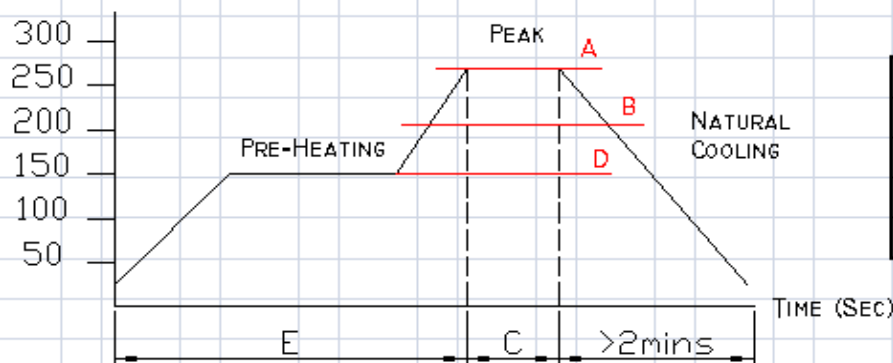
- ⊗ Inductor Contents ONE (1) Set(s) of Coil
- ⊗ DC/AC Current Shall Be Introduced By Any One of Two Pads

## PERFORMANCE CURVES



## RECOMMENDED SOLDERING TEMP. GRAPH

TEMPERATURE (°C)



A	260°C
B	230°C
C	10 Sec
D	150°C
E	60~240 Sec

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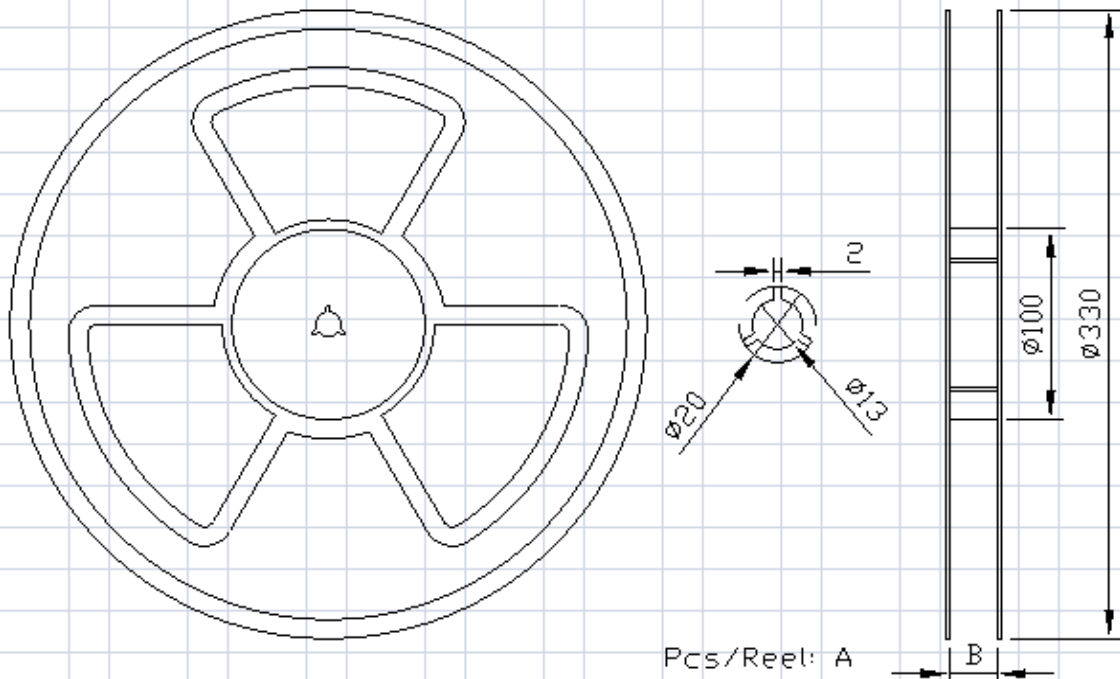
**MECHANICAL RELIABILITY**

TEST	Specification & Requirement	Method Used
Solderability	The surface of terminal/pin tested shall be covered with new solder by 95%	Solder heat proof. Preheating: 180 ±10°C 90 seconds Soldering: 255 ±5°C for 3 ±1 sec
Shock	Inductance change within ± 5% Without mechanical damage	Drop down with 981m/s <sup>2</sup> (100G) shock Attitude upon a rubber block method shock testing machinem, 3 tests.
Vibration	Inductance change within ± 5% Without mechanical damage	Vibration frequency: 10Hz to 55Hz to 10Hz 60 seconds cycle Vibration time: 2 hours

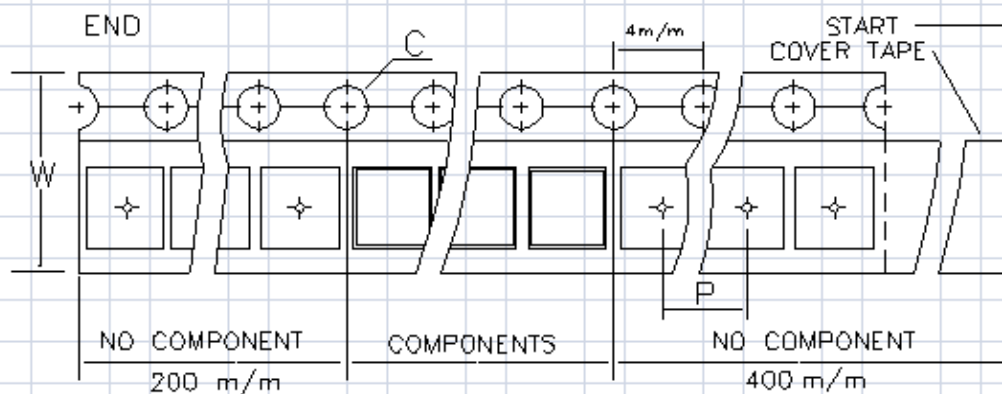
**ENDURANCE RELIABILITY**

TEST	Specification & Requirement	Method Used
Thermal Shock	Inductance change within ± 5% Without mechanical damage	-25°C, (30 mins) -> room temp. (5 mins) -> 125°C, (30 mins) -> room temp. (5 mins) 100 cycles
Heat Resistance	Inductance change within ± 5% Without mechanical damage	Apply IDC current @ 85°C ambient Duration: 1000 hrs
Humidity Resistance	Inductance change within ± 5% Without mechanical damage	Apply IDC current @ 60°C ambient Humidity: 90~95% Duration: 1000 hrs
Low Temp. Storing	Inductance change within ± 5% Without mechanical damage	Storing Temp. -25 ±2 °C for total 1,000 +4/-0 hours
High Temp. Storing	Inductance change within ± 5% Without mechanical damage	Storing Temp. 125 ±2 °C for total 1,000 +4/-0 hours

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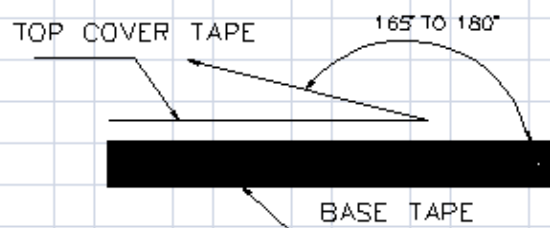
**CARRIETAPEING REEL & CARRIER MATERIALS (PAPER PLASTICS) UNIT : (mm)**

A	B	C	D	E
1000	25	$\phi$ 1.5	24	20



Typical Pulling Force:

10 grams



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## TEST DATA

SPEC No.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)		DCR Max( mΩ )	INDUCTANCE	
							L(0) ± 20%	10 A	≧ 80% L(0)
	6.6 ± 0.3	7.2 ± 0.3	3.0 MAX	3.0 ± 0.3	1.6 ± 0.5		42	4.70	
1	6.72	7.25	2.95	2.95	1.88		38.1	4.47	PASS
2	6.75	7.28	2.88	2.94	1.84		38.5	4.52	PASS
3	6.73	7.22	2.97	2.95	1.86		38.6	4.81	PASS
4	6.72	7.26	2.86	2.95	1.85		38.6	4.66	PASS
5	6.73	7.28	2.88	2.94	1.85		38.5	4.45	PASS
6	6.76	7.25	2.84	2.95	1.85		38.6	4.61	PASS
7	6.71	7.22	2.93	2.95	1.84		38.8	4.65	PASS
8	6.75	7.21	2.92	2.95	1.86		38.1	4.88	PASS
9	6.78	7.25	2.87	2.94	1.86		38.7	4.92	PASS
10	6.73	7.31	2.84	2.94	1.84		38.2	4.71	PASS
$\bar{X}$	6.74	7.25	2.89	2.95	1.85		38.47	4.67	
R	0.07	0.10	0.13	0.01	0.04	0.00	0.70	0.47	

© All test Data is referenced to 25°C ambient