Product Series :	GTCH	Brand :	GOTREND
File Version :	GTCH-SEIRES-AE-V1R0	Editor :	Yinghui Guo
Established Date	2023.05.22	Description :	Multilayer Ceramic High-Frequency Inductor
Latest Edit Date :	2023.05.22	Product Type :	☑ Standard □ Customize

Version Information :

SN	Date	Version Code	Modify Description	Editior	Check
01	2023.05.22	V1R0	New version update release	Yinghui Guo	後文的
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Product Series :	GTCH
File Version :	GTCH-SEIRES-AE-V1R0
Established Date	2023.05.22
Latest Edit Date :	2023.05.22

Brand : Editor : Description : Product Type :

GOTREND Yinghui Guo Multilayer Ceramic High-Frequency ☑ Standard □ Customize

I REMINDERS

- Product information in this catalog is subject to change without notice, and is for reference only. Therefore, please contact GOTREND Technology to check for the latest information before practical application or usage of the products.
- This catalog contains only typical specifications, please contact GOTREND Technology for further details if you can not find special components or information you need in this catalogue. Please also approve our product specifications or transact the approval sheet for product specifications before ordering.
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- Products listed in this catalog are intended for general electronic device usage under normal operation and use condition including telecommunication equipment, home appliances, sports equipment AV equipment, industrial machine, office equipment etc. Please take note that our products are not designed, intended or authorized for use in below mentioned applications unless explicitly agreed in writing between the parties to avoid product failure that could result in situation where personal injury or death could occur.
 - (1) Aerospace/Aviation equipment
 - (2) Atomic energy-related equipment
 - (3) Disaster prevention/crime prevention equipment
 - (4) Electric heating apparatus, burning equipment
 - (5) Medical equipment
 - (6) Military equipment
 - (7) Power-generation control equipment
 - (8) Public information-processing equipment
 - (9) Safety equipment
 - (10) Seabed equipment
 - (11) Transportation control equipment
 - (12) Transportation equipment (cars, electric trains, ships, etc.)
 - (13) Other applications that are not considered general-purpose applications
- Our manufacturing sites fully compliance with requirement regarding the quality management system in the automotive industry under the IATF 16949 standard. GOTREND Technology respect individual agreements with reference to customer requirements and customer specific requirements (CSR). We will like to emphasize that only requirements mutually agreed upon will in implemented in our Quality Management System taking into consideration that IATF 16949 may appear to support the acceptance of unilateral requirements. We will only legally bind to this individually agreed upon agreement under the IATF 16949 standard.
- The product itself is a powder metallurgy product, so the structure is relatively fragile, and it should not be used for products that are easy to fall. In addition, when this product is assembled, it should avoid collision with the tool or mechanism shell.
- It is not recommended to use hot air gun for disassembling of this product. When using of hot air gun to repair other parts, please also take note that long time or high temperature exposure of this product will also damage the inductance device. If you need to use the hot air gun to disassemble the product, it is recommended to adjust the hot air gun temperature to 380 deg.C±5 deg.C. The blower head of the hot air gun should be perpendicular and at least 1cm away from the product. After heating the product to the tin material melting point, use tweezers to remove the product from the PCB.







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Features & Application :

- * High Frequency SRF up to 10GHz
- * Fit for 2.4GHz / 5GHz....etc. RF circuit
- * To help you go pass the CE/FCC standard.
- * Mobile Device / Handheld Device / LowProfile Device / Panel...



(Picture for reference only)

Basic Information :

Made in	China
Pin Foot	SMD
Shielding	Yes
J-STD-020	MSL Level 1
RoHS	Compliant
REACH	Compliant
Halogen	Free
Automotive	AEC Q200



Part No. Example :

PN	:	GTCH	1005	Р	F	-	1N0	S	-	AE
ID	:	1	2	3	4		5	6		7

1	:	GTC : GOTREND Series
2	:	1005 : Diamension code- Length 1.0mm X Width 0.5mm
3	:	P : Pb free < 1000ppm
4	:	F : Material code
5	:	1N0 : [L] Value - Inductance 1N0=1.0nH, 10N=10nH,
6	:	S : Tolerance Code - S = +/- 0.3 nH, J = 5%, K = 10%
7	:	[AE] : Reliability comply with AEC-Q200 standard type.

Operating & Storage Condition :

* Operating Temp	-40 ~ +125 °C (Including self - temperature rise)
* Storage Temp	110 ~ +45 °C , 50 ~ 60% RH (Product with taping)

- 2. * Storage Life Time 6
- 2. -40 ~ +125 °C(On board) 6 Month(Less than 40 °C and 60% RH)

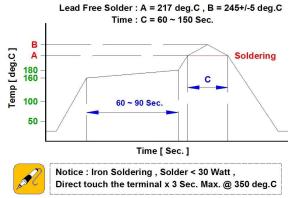
Attention & Caution :

- * Keep out of
- * Avoid
- Splashing water or salt water
- Toxic Gas (Hydrogen sulfide, Sulfurous acid, Chlorine, Ammonia)
 - Vibrations or shocks which exceed the specified condition
 - Dew condense Layout near the edge of PCB
 - Over flexure after SMT mounting & PCBA
- * Pin foot or SMD pad solderablility: Pb free type is best within 6 months after delivery
- * Humidity sensitive , IPC/JEDEC J-STD-020 MSL if over Level 1, recommend bake 30mins@150 degree before PCBA
- * Caution for human life relative applications : PLS contact & consult with GOTREND team in design stage.

Test Condition :

* Equipment	HP4284A , HP42841A - L , Q , DCR , IDC HP8753D Network analyzer - SRF
* Standard Atmos	phere Conditions:
Ambient	Temperature 20 ± 15 °C
	Humidity RH 65 ± 20%
* If there may be a	any doubt on the test result ,
Measurement sh	all be made within the following limits:
Ambient	Temperature 25 ± 5 °C
	Humidity RH 75 ± 10%

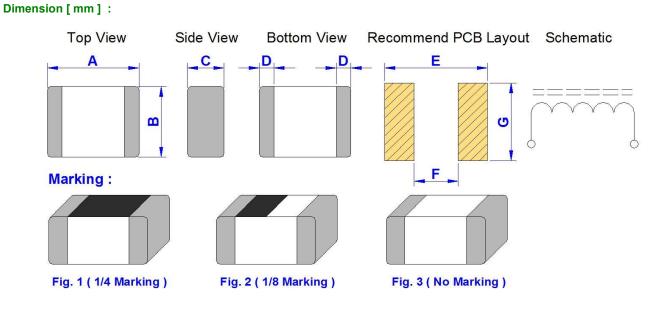
Recommend IR Reflow Curve :





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GTCH1005PF-SERIES-AE



Size	A	В	С	D	E(Ref.)	F(Ref.)	G(Ref.)
1005 [0402]	1.00+/-0.05	0.50+/-0.05	0.50+/-0.05	0.25+/-0.10	1.50	0.50	0.50

Electrical Characteristics :

Part No.	Inductance (nH) @100MHz	Inductance Tolerance	Q @100MHz Min.	Rated Current (mA) Max.	DCR (Ohm) Max.	S.R.F (MHz) Min.
GTCH1005PF-1N0 -AE	1.0	S	8.0	300	0.08	10000
GTCH1005PF-1N2 -AE	1.2	S	8.0	300	0.09	10000
GTCH1005PF-1N5 -AE	1.5	S	8.0	300	0.10	6000
GTCH1005PF-1N8 -AE	1.8	S	8.0	300	0.12	6000
GTCH1005PF-2N0 -AE	2.0	S	8.0	300	0.12	6000
GTCH1005PF-2N2 -AE	2.2	S	8.0	300	0.13	6000
GTCH1005PF-2N4 -AE	2.4	S	8.0	300	0.13	6000
GTCH1005PF-2N7 -AE	2.7	S	8.0	300	0.13	6000
GTCH1005PF-3N0 -AE	3.0	S	8.0	300	0.16	6000
GTCH1005PF-3N3 -AE	3.3	S	8.0	300	0.16	6000
GTCH1005PF-3N6 -AE	3.6	S	8.0	300	0.20	5000
GTCH1005PF-3N9 -AE	3.9	S	8.0	300	0.21	4000
GTCH1005PF-4N3 -AE	4.3	S	8.0	300	0.20	4000
GTCH1005PF-4N7 -AE	4.7	S	8.0	300	0.21	4000
GTCH1005PF-5N1 -AE	5.1	S	8.0	300	0.21	4000
GTCH1005PF-5N6 -AE	5.6	S	8.0	300	0.23	4000
GTCH1005PF-6N2 -AE	6.2	S	8.0	300	0.25	3900
GTCH1005PF-6N8 -AE	6.8	J, K	8.0	300	0.25	3900
GTCH1005PF-7N5 -AE	7.5	J, K	8.0	300	0.25	3700
GTCH1005PF-8N2 -AE	8.2	J,K	8.0	300	0.28	3600

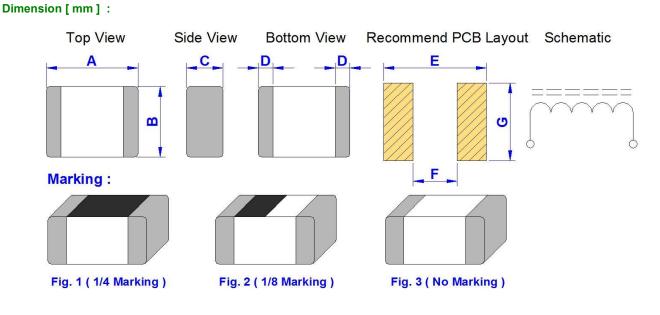
* Inductance tolerance : S = \pm 0.3 nH ; J = \pm 5% ; K = \pm 10%

* Rated Current based on increasing product temperature : Current when temperature of the product reaches +40 deg.C .



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GTCH1005PF-SERIES-AE



Size	A	В	С	D	E(Ref.)	F(Ref.)	G(Ref.)
1005 [0402]	1.00+/-0.05	0.50+/-0.05	0.50+/-0.05	0.25+/-0.10	1.50	0.50	0.50

Electrical Characteristics :

Part No.	Inductance (nH) @100MHz	Inductance Tolerance	Q @100MHz Min.	Rated Current (mA) Max.	DCR (Ohm) Max.	S.R.F (MHz) Min.
GTCH1005PF-9N1 -AE	9.1	J, K	8.0	300	0.30	3400
GTCH1005PF-10N -AE	10.0	J, K	8.0	300	0.31	3200
GTCH1005PF-12N -AE	12.0	J, K	8.0	300	0.40	2700
GTCH1005PF-15N -AE	15.0	J, K	8.0	300	0.46	2300
GTCH1005PF-18N -AE	18.0	J, K	8.0	300	0.55	2100
GTCH1005PF-22N -AE	22.0	J, K	8.0	300	0.60	1900
GTCH1005PF-27N -AE	27.0	J, K	8.0	300	0.70	1600
GTCH1005PF-33N -AE	33.0	J,K	8.0	200	0.80	1300

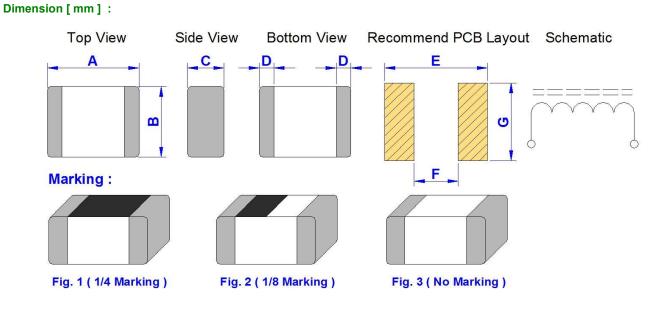
* Inductance tolerance : J = \pm 5% ; K = \pm 10%

* Rated Current based on increasing product temperature : Current when temperature of the product reaches +40 deg.C .



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GTCH1608PF-SERIES-AE



Size	A	В	С	D	E(Ref.)	F(Ref.)	G(Ref.)
1608 [0603]	1.60+/-0.15	0.80+/-0.15	0.80+/-0.15	0.30+/-0.20	2.60	0.60	0.80

Electrical Characteristics :

Part No.	Inductance (nH) @100MHz	Inductance Tolerance	Q Min.	L,Q Test Freq. (MHz)	Rated Current(mA) Max.	DCR (Ohm) Max.	S.R.F (MHz) Min.
GTCH1608PF-1N0 -AE	1.0	S	8.0	100	300	0.05	10000
GTCH1608PF-1N2 -AE	1.2	S	8.0	100	300	0.05	10000
GTCH1608PF-1N5 -AE	1.5	S	8.0	100	500	0.10	10000
GTCH1608PF-1N8 -AE	1.8	S	8.0	100	300	0.10	6000
GTCH1608PF-2N2 -AE	2.2	S	8.0	100	300	0.10	6000
GTCH1608PF-2N7 -AE	2.7	S	10.0	100	300	0.10	6000
GTCH1608PF-3N3 -AE	3.3	J,K	10.0	100	300	0.12	6000
GTCH1608PF-3N9 -AE	3.9	J,K	10.0	100	300	0.14	6000
GTCH1608PF-4N7 -AE	4.7	J, K	10.0	100	300	0.16	4000
GTCH1608PF-5N6 -AE	5.6	J , K	10.0	100	300	0.18	4000
GTCH1608PF-6N8 -AE	6.8	J , K	10.0	100	300	0.22	4000
GTCH1608PF-8N2 -AE	8.2	J , K	10.0	100	300	0.24	3500
GTCH1608PF-10N -AE	10.0	J,K	12.0	100	300	0.26	3400
GTCH1608PF-12N -AE	12.0	J,K	12.0	100	300	0.30	2600
GTCH1608PF-15N -AE	15.0	J, K	12.0	100	300	0.32	2300
GTCH1608PF-18N -AE	18.0	J, K	12.0	100	300	0.35	2000
GTCH1608PF-22N -AE	22.0	J, K	12.0	100	300	0.40	1600
GTCH1608PF-27N -AE	27.0	J, K	12.0	100	300	0.45	1400
GTCH1608PF-33N -AE	33.0	J, K	12.0	100	300	0.55	1200
GTCH1608PF-39N -AE	39.0	J,K	12.0	100	300	0.60	1100

* Inductance tolerance : S = \pm 0.3 nH ; J = \pm 5% ; K = \pm 10%

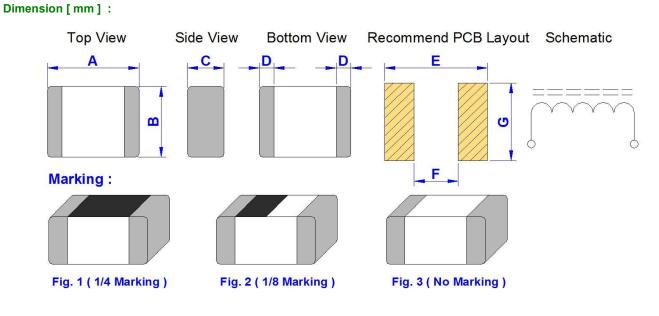
* Rated Current based on increasing product temperature : Current when temperature of the product reaches +40 deg.C .



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GTCH1608PF-SERIES-AE



Size	A	В	С	D	E(Ref.)	F(Ref.)	G(Ref.)
1608 [0603]	1.60+/-0.15	0.80+/-0.15	0.80+/-0.15	0.30+/-0.20	2.60	0.60	0.80

Electrical Characteristics :

Part No.	Inductance (nH) @100MHz	Inductance Tolerance	Q Min.	L,Q Test Freq. (MHz)	Rated Current(mA) Max.	DCR (Ohm) Max.	S.R.F (MHz) Min.
GTCH1608PF-47N -AE	47.0	J, K	12.0	100	300	0.70	900
GTCH1608PF-56N -AE	56.0	J, K	12.0	100	300	0.75	900
GTCH1608PF-68N -AE	68.0	J, K	12.0	100	300	0.85	700
GTCH1608PF-82N -AE	82.0	J, K	12.0	100	300	0.95	600
GTCH1608PF-R10 -AE	100.0	J, K	12.0	100	300	1.00	600
GTCH1608PF-R12 -AE	120.0	J, K	8.0	50	300	1.30	500
GTCH1608PF-R15 -AE	150.0	J,K	8.0	50	300	1.50	500
GTCH1608PF-R18 -AE	180.0	J, K	8.0	50	300	1.80	400
GTCH1608PF-R22 -AE	220.0	J, K	8.0	50	300	2.10	400
GTCH1608PF-R27 -AE	270.0	J,K	8.0	50	300	2.40	350
GTCH1608PF-R33 -AE	330.0	J, K	8.0	50	300	3.00	350
GTCH1608PF-R39 -AE	390.0	J, K	8.0	50	150	3.00	350
GTCH1608PF-R47 -AE	470.0	J,K	8.0	50	150	3.60	250

* Inductance tolerance : J = \pm 5% ; K = \pm 10%

* Rated Current based on increasing product temperature : Current when temperature of the product reaches +40 deg.C .



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Latest Edit Date :	2023.05.22	Product Type :	☑ Standard

Care note :

Care note for Use :

(1) Storage Condition :

Temperature 25 to 35 °C , Humidity 45 to 60% RH

- (2) Use Temperature :
 - a. Minimum Temperature : -40 °C Ambient temperature of this product.
 - b. Maximum Temperature : +125 °C The value of temperature including ambient and temperature rise of this product.
 - c. Reliability test temperature range from -40 \sim +125 $^\circ\text{C}$
 - d. However, this is not meant as temperature grade guarantee for UL.
- (3) Model :

When this product was used in a similar or as new product to the original one, sometimes it might be unable to satisfy the specifications due to difference in condition of usage.

(4) Drop :

If this product suffered mechanical stress such as drop, characteristics may become poor (due to damage on coil / bobbin / ferrite ... etc.)

Never use such stressed product.

Care note for Safety :

(1) Provision to Abnormal Condition :

This product itself does not have any protective function in abnormal condition such as overload, short-circuit and open-circuit conditions, etc.

Therefore, it shall be confirmed from the end product that there is no risk of smoking, fire, dielectric withstand voltage insulation resistance, etc. in abnormal conditions to provide protective devices and /or protection circuit in the end product.

(2) Temperature Rise :

Temperature rise on this product depends on the installation condition on end products. It shall be confirmed on the actual end product that temperature rise of this product is within the specified temperature class limit.

(3) Dielectric Strength :

Dielectric withstanding test with higher voltage than specific value will damage insulating material and shorten its life.

(4) Water :

This product must not be used in wet condition resulted from water, coffee or any liquid contact because insulation strength becomes very low under such condition.

(5) Potting :

If this product is potted in some compound, coating material of magnet wire might be occasionally damaged. Please ask us if you intend to pot this product.

(6) Detergent :

Please consult our company immediately once under such circumstances because product reliability confirmation etc. is needed when this product come in contact with these chemicals.



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Latest Edit Date :	2023.05.22	Product Type :	☑ Standard

Reliability :

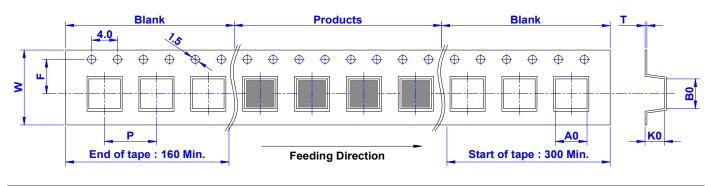
No	ltem	Test Conditions	Specification
1	External Visual	Inspect device construction and workmanship.	There is no change for appearance (electrode
	MIL-STD-883	Electrical test not required.	did not fall off , loose , no breakage , ferrite core
	Method 2009		did not break , damage)
2	Physical Dimension	Verify physical dimensions to the device	For Spec.
	JESD22	specification.	
	Method JB-100		
3	Thermal Shock	Temperature : -40±2 °C ~ +125±2 °C	There is no change for appearance (electrode
	MIL-STD-202	Max transfer time : 20 s.	did not fall off , loose , no breakage , ferrite core
	Method 107	Dwell time : 15 minutes. Air - Air	did not break , damage)
			Inductor value / resistance change rate ±10%.
4	Humidity Resistance	Humidity : 85% RH	There is no change for appearance (electrode
	MIL-STD-202	Temperature : 85 °C	did not fall off , loose , no breakage , ferrite core
	Method 103	Test time : 1000 Hours	did not break , damage)
			Inductor value / resistance change rate ±10%.
5	High Temperature	Temperature : 125±2 °C	There is no change for appearance (electrode
	MIL-STD-202	Test time : 1000 Hours	did not fall off , loose , no breakage , ferrite core
	Method 108		did not break , damage)
			Inductor value / resistance change rate ±10%.
6	Temperature and	Temperature : -40 °C ~ +125 °C	There is no change for appearance (electrode
	Humidity Cycle	Cycles : 1000	did not fall off , loose , no breakage , ferrite core
	JESD22		did not break , damage)
	Method JA-104		Inductor value / resistance change rate ±10%.
7	Operational Life	Temperature : 125 °C	No short circuit, open circuit.
	MIL-PRF-27	Load : Allowed DC current	
		Test time : 1000 Hours	
8	Vibration	5 g's for 20 minutes , 12 cycles each of 3	No bad phenomenon.
	MIL-STD-202	orientations.	
	Method 204	Test from 10Hz ~ 2000Hz	
9	Mechanical Shock	Figure 1 of Method 213 SMD : Condition C.	No bad phenomenon.
	MIL-STD-202		
	Method 213		
10	Resistance to	Condition B No pre-heat of samples.	Tin solder have to cover over 90% area.
	Soldering Head	Temperature 250 up / 5 s.	
	MIL-STD-202	Temperature 183 up / 90 ~ 120 s.	
	Method 210		
11	Solderability	a. Method B , 4 Hours @ 155 °C dry heat	No change and transform form the appearance.
	J-STD-002	@ 235 °C	
		b. Method B @ 215 °C category 3	
		c. Method D @ 260 °C category 3	

GOTREND Technology Co., Ltd. Page: 9/11 Email

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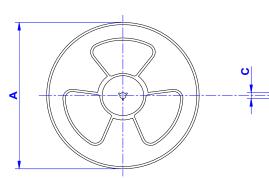
Packaging Information :

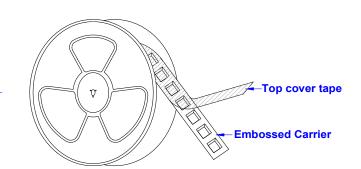
Tape Dimension (mm) :



SIZE/mm	W	Р	A0	B0	K0	Т	F
1005	8.00	2.00	0.65	1.15	0.80	0.80	3.50
1608	8.00	4.00	1.05	1.90	1.00	1.00	3.50

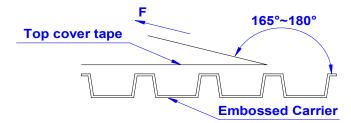
Reel Dimension (mm):





SIZE/mm	Reel Size	A	В	С	D	QTY / Reel
1005	7" x 8 mm	178	60	13	8.5	10000 PCS
1608	7" x 8 mm	178	60	13	8.5	4000 PCS

Tearing Off Force :



The force for tearing off cover tape is 10 to 130 grams in the arrow direction under the following conditions (referenced ANSI / EIA - 481 - D - 2008 of 4.11stadnard).

Room Temp.	Room Humidity	Room Atm.	Tearing Speed
(deg.C)	(%)	(hPa)	(mm / min)
5 ~ 35	45 ~ 85	860 ~ 1060	

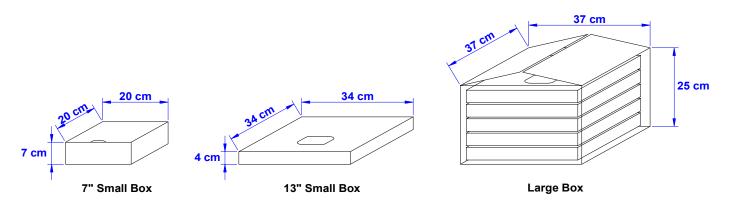


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Packaging Information :

Box Package :



SIZE/mm	Reels in Small Box	Small Box in Large Box
1005	5	8
1608	5	8



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