Product Series :	GBDC	Brand :	GOTREND
File Version :	GBDC-SERIES-V1R2	Editor :	Qiuyi Wu
Established Date	2011.08.24	Description :	Multilayer Ferrite Common Mode
Latest Edit Date :	2023.07.12	Product Type :	☑ Standard ☐ Customize

Version Information:

SN	Date	Version Code	Modify Description	Editior	Check
01	2020.10.29	V1R1	New version update release	1	Teddy Sun 裱文码
02	2023.07.12	V1R2	ADD GBDC0605 series & GBDC0806 series	Qiuyi Wu	张文叹
				-	
				-	
				-	
				1	
				1	



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! 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.
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- ♦ Information and data provided in the brochure can and do vary in different applications, and actual performance may vary over time.
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- ◆ For exporting of product in this catalog, please take note it may be a restricted item according to the "Foreign Exchange and Foreign Trade Control Law". In such cases, it is necessary to acquire export permission in accordance to this law.
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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.

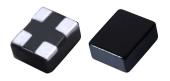




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Features & Application:

- * The GBDC series is effective for common mode noise suppression in digital equipment which causes radiation from cables.
- * Low leakage flux due to monolithic structure enables high-density mounting.
- * The nickel barrier structure of the external electrodes provides excellent solder heat resistance.
- * Prevention of common mode noise on signal line in personal computers , computer built in equipments , facsimiles , digital telephones , etc...



(Picture for reference only)

Basic Information:

Part No. Example:

PN	:	GBDC	2012	Р	-	900	N	Made in	China
								Pin Foot	SMD
ID	:	1	2	3		4	5	Shielding	Yes
								J-STD-020	MSL Level 1
1	:	GBD : G	OTREN	D Series	6			RoHS	Compliant
2	:	2012 : L	ength 2.0	0 mm x \	Width 1	.25 mm x l	Height 0.9 mm	REACH	Compliant
3	:	P : Pb <	1000ppr	m				Halogen	Free

Operating & Storage Condition:

* Operating Temp	$-25 \sim +85$ deg.C (Size : 0605 / 0806) \angle -40 \sim +125 deg.C (Size : 2012) (Including self - temperature rise)
* Storage Temp	110 ~ +45 deg.C , 50 ~ 60% RH (Product with taping)

2. -25 ~ +85 deg.C (Size : 0605 / 0806) /-40 ~ +125 deg.C (Size : 2012) (On board)

* Storage Life Time 6 Month (Less than 40 deg.C and 60% RH)

900 : Impedance (Ohm) = 90 Ohm N : Tolerance = Typ. or +/-25%

Attention & Caution:

* Keep out of Splashing water or salt water

* Avoid 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 Atmosphere Conditions:

Ambient Temperature 20 \pm 15 deg.C Humidity RH 65 \pm 20%

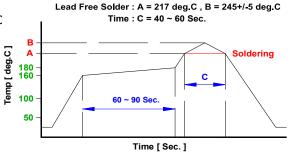
* If there may be any doubt on the test result ,

Measurement shall be made within the following limits:

Ambient Temperature 25 ± 5 deg.C

Humidity RH 75 ± 10%

Recommend IR Reflow Curve: GTX-IR-FILE001





Notice : Iron Soldering , Solder < 30 Watt , Direct touch the terminal x 3 Sec. Max. @ 350 deg.C



GBDC GOTREND **Product Series:** Brand: File Version: GBDC-SERIES-V1R2 Editor: Qiuyi Wu **Established Date: Description:** Multilayer Ferrite Common Mode 2011.08.24 Latest Edit Date: 2023.07.12 **Product Type:** ☑ Standard $\ \square \ Customize$

Multilayer Ferrite Common Mode - GBDC Series Type

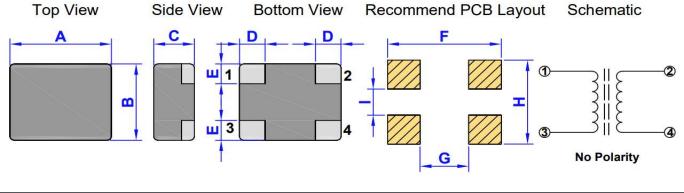
manual and a series and a series appearance and a series				7							
lmage	Part Name	L (mm) +/-0.05	, ,	H (mm) +/-0.05				DCR (Ohm) Typ.	Rated Voltage Vdc (V) Max.	Rated Current Idc (mA) Max.	Page
*	GBDC0605PG	0.65	0.50	0.30	35		90	1.5 ~ 5.2	5	100	5
*	GBDC0605PS	0.65	0.50	0.30	12			1.3 ~ 2.5	5	100	6
*	GBDC0605PT	0.65	0.50	0.30	12			1.6 ~ 2.8	5	100	7
	GBDC0806PG	0.85	0.65	0.40	35		90	1.4 ~ 4.0	5	100	8
	GBDC0806PS	0.85	0.65	0.40	12		47	0.9 ~ 3.8	5	100	9~10
	GBDC0806PT	0.85	0.65	0.40	12			1.4~2.8	5	100	11
***	GBDC2012P	2.00 +/-0.2	1.25 +/-0.2	0.90 +/-0.2	90		120	0.7 Max.	10	400	12



GOTREND **Product Series: GBDC** Brand: File Version: GBDC-SERIES-V1R2 Editor: Qiuyi Wu **Established Date** 2011.08.24 **Description:** Multilayer Ferrite Common Mode **Product Type:** Latest Edit Date: 2023.07.12 ☑ Standard ☐ Customize

GBDC0605PG-SERIES

Dimension [mm] :

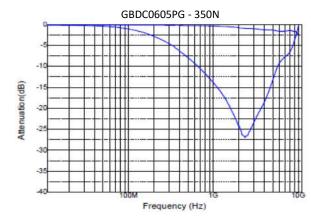


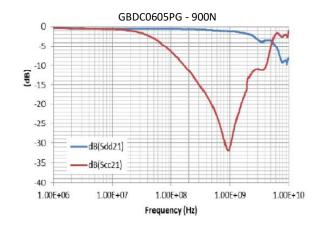
Size	А	В	О	D	E	F	G	Н	1
0605PG	0.65±0.05	0.50±0.05	0.3±0.05	0.2±0.05	0.15±0.10	0.71	0.25	0.80	0.20

Electrical Characteristics:

Part No.	Common - Mode Impedance (Ω) at 100MHz (Under Standard Testing Condition)	DC Resistance (Ω)	Rated Voltage (V) Max.	Rated Current (mA) Max.	Insulation Resistance (MΩ) Min.	Differential Signal Cutoff Frequency @ - 3dB (GHz)
GBDC0605PG-350N	19 ~ 35	1.5 ~ 2.5	5	100	10	8
GBDC0605PG-900N	90 ± 25%	2.8 ~ 5.2	5	100	10	2.7

Insertion Loss (Ref.):

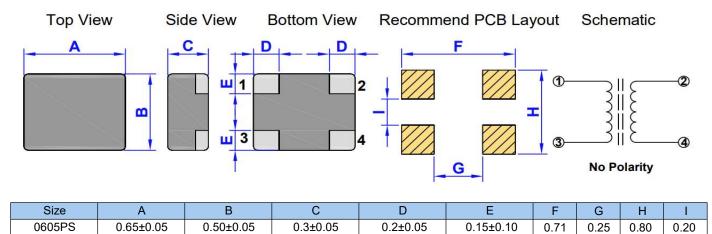




Prod	uct Series :	GBDC	Brand :	GOTREND
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Latest	t Edit Date :	2023.07.12	Product Type :	✓ Standard ☐ Customize

GBDC0605PS-SERIES

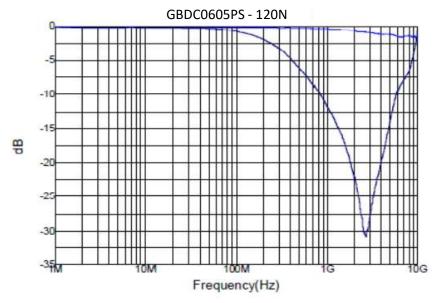
Dimension [mm] :



Electrical Characteristics:

Part No.	Common - Mode Impedance (Ω) at 100MHz (Under Standard Testing Condition)	DC Resistance (Ω)	Rated Voltage (V) Max.	Rated Current (mA) Max.	Insulation Resistance (MΩ) Min.	Differential Signal Cutoff Frequency @ - 3dB (GHz)
GBDC0605PS-120N	Max. 20	1.3 ~ 2.5	5	100	10	>10

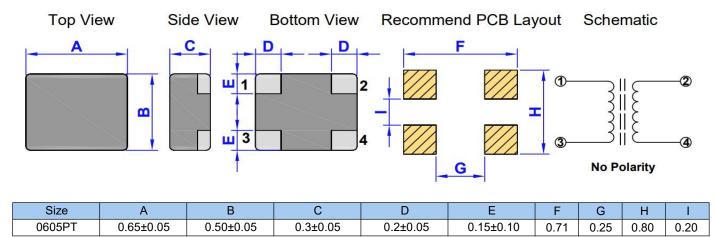
Insertion Loss (Ref.):



Product Series :	GBDC	Brand :	GOTREND
File Version :	GBDC-SERIES-V1R2	Editor :	Qiuyi Wu
Established Date	2011.08.24	Description :	Multilayer Ferrite Common Mode
Latest Edit Date :	2023.07.12	Product Type :	☑ Standard ☐ Customize

GBDC0605PT-SERIES

Dimension [mm] :



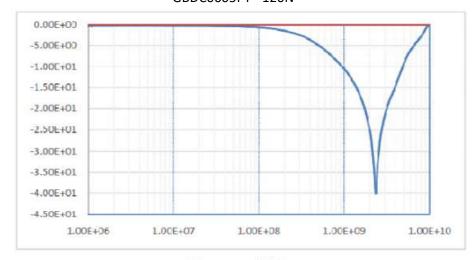
Electrical Characteristics:

Part No.	Common - Mode Impedance (Ω) at 100MHz (Under Standard Testing Condition)	DC Resistance (Ω)	Rated Voltage (V) Max.	Rated Current (mA) Max.	Insulation Resistance (MΩ) Min.	Differential Signal Cutoff Frequency @ - 3dB (GHz)
GBDC0605PT-120N	9 ~ 15	1.6 ~ 2.8	5	100	10	10

dB

Insertion Loss (Ref.):

GBDC0605PT - 120N



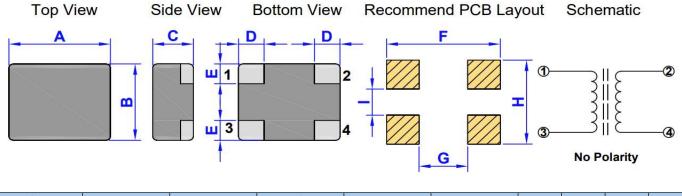
Frequency(Hz)



GOTREND **Product Series: GBDC** Brand: GBDC-SERIES-V1R2 Editor: Qiuyi Wu File Version: **Established Date** 2011.08.24 **Description:** Multilayer Ferrite Common Mode **Product Type:** Latest Edit Date: 2023.07.12 ☑ Standard ☐ Customize

GBDC0806PG-SERIES

Dimension [mm] :

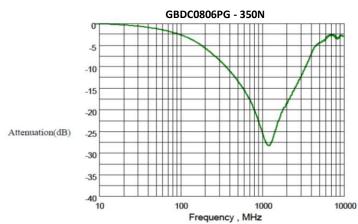


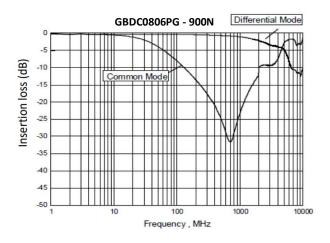
Size	Α	В	С	D	E	F	G	Н	l l	
0806PG	0.85±0.05	0.65±0.05	0.4±0.05	0.27 Typ.	0.20 Typ.	0.80	0.20	0.8~1.0	0.30	Ì

Electrical Characteristics:

Part No.	Common - Mode Impedance (Ω) at 100MHz (Under Standard Testing Condition)	DC Resistance (Ω)	Rated Voltage (V) Max.	Rated Current (mA) Max.	Insulation Resistance (MΩ) Min.
GBDC0806PG-350N	35 ± 25%	1.4 ~ 2.5	5	100	10
GBDC0806PG-900N	90 ± 25%	1.9 ~ 4.0	5	100	10

Insertion Loss (Ref.):



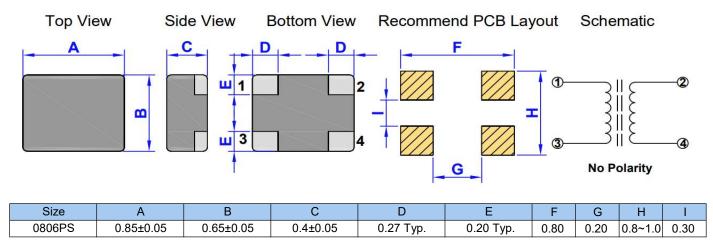




Product Series :	GBDC	Brand :	GOTREND
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GBDC0806PS-SERIES

Dimension [mm] :



Electrical Characteristics:

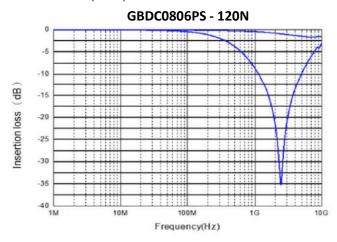
Part No.	Common - Mode Impedance (Ω) at 100MHz (Under Standard Testing Condition)	DC Resistance (Ω)	Rated Voltage (V) Max.	Rated Current (mA) Max.	Insulation Resistance (MΩ) Min.
GBDC0806PS-120N	12 ± 25%	0.9 ~ 1.7	5	100	10
GBDC0806PS-250N	25 ± 25%	1.4 ~ 2.5	5	100	10
GBDC0806PS-470N	47 ± 25%	2.4 ~ 3.8	5	100	10

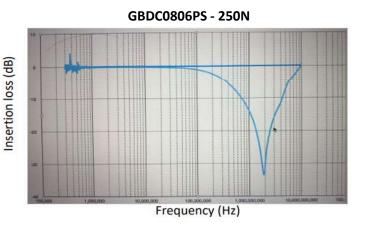


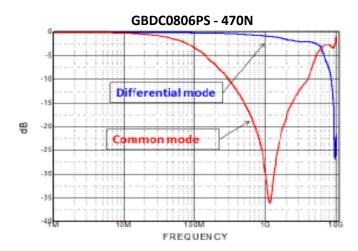
Product Series :	GBDC	Brand :	GOTREND
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GBDC0806PS-SERIES

Insertion Loss (Ref.):





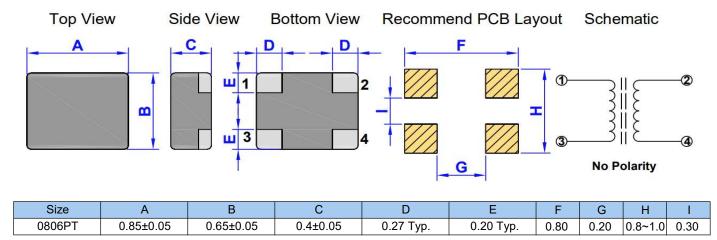




GOTREND **Product Series: GBDC** Brand: File Version: GBDC-SERIES-V1R2 Editor: Qiuyi Wu **Established Date** 2011.08.24 **Description:** Multilayer Ferrite Common Mode Latest Edit Date: 2023.07.12 **Product Type:** ☑ Standard ☐ Customize

GBDC0806PT-SERIES

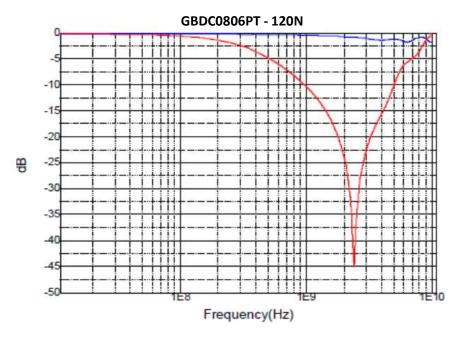
Dimension [mm] :



Electrical Characteristics:

Part No.	Common - Mode Impedance (Ω) at 100MHz	DC Resistance (Ω)	Rated Voltage (V) Max.	Rated Current (mA) Max.	Insulation Resistance (MΩ) Min.	Differential Signal Cutoff Frequency @ - 3dB (GHz) Min.
GBDC0806PT-120N	12 ~ 18	1.4 ~ 2.8	5	100	10	10

Insertion Loss (Ref.):

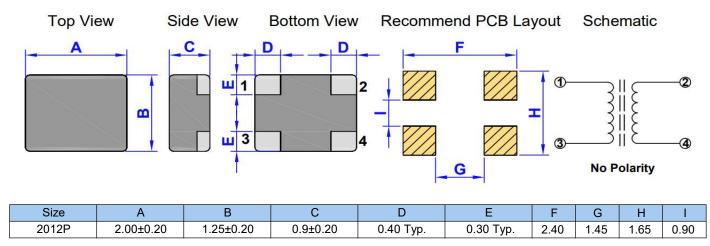




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GBDC2012P-SERIES

Dimension [mm] :



Electrical Characteristics:

Part No.	Common - Mode Impedance	Test Freq. (MHz)	DC Resistance (Ω) Max.	Rated Current (mA) Max.	Line To Line Resistance (MΩ) Min.	Rated Voltage (V) Max.	Withstand Voltage (V) Max.
GBDC2012P- 900N	90.0 Typ.	100 / 50 mV	0.70	400	100	10.0	25.0
GBDC2012P- 101N	100.0 Typ.	100 / 50 mV	0.70	400	100	10.0	25.0
GBDC2012P- 121N	120.0 Typ.	100 / 50 mV	0.70	400	100	10.0	25.0

^{*} Rated Current : For a $40\,^\circ\!\!\!\mathrm{C}$ temprature rise from $25\,^\circ\!\!\!\mathrm{C}$ ambient.



^{*} Operating Temperature : - 40° C \sim 125 $^{\circ}$ C

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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: -25 deg.C (Size: 0605 / 0806) /-40 deg.C (Size: 2012) Ambient temperature of this product.
- b. Maximum Temperature : +85 deg.C (Size : 0605 / 0806) / +125 deg.C (Size : 2012) The value of temperature including ambient and temperature rise of this product.
- c. Reliability test temperature range from -25 ~ +85 deg.C (Size : 0605 / 0806) \(\sigma -40 ~ +125 deg.C \) (Size : 2012)
- 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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Reliability:

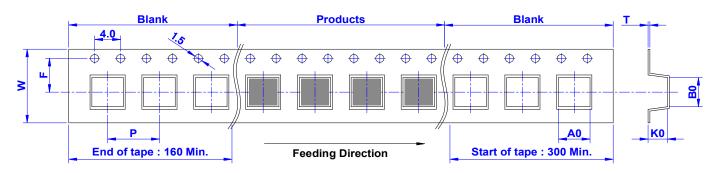
SN	Test Item	Test Condition	Specification
1	Dimension	Actual Size	Meet Spec
2	Thermal Shock (Temperature Cycle)	Temperature : -25 ~ +85 deg.C (Size : 0605 / 0806) / -40 ~ +129 deg.C (Size : 2012) kept stabilized for 30 min. each Cycle : 100 Cycles (power off)	Elec. no variation Appearance no deformation
3	Humidity Resistance	Humidity: 90% ~ 95% RH Temperature: 60 ± 2 deg.C, Test Time: 96 ± 2 Hours	Elec. no variation Appearance no deformation
4	HighTemperature	Temperature : 85 ± 2 deg.C (Size : 0605 / 0806) / 125 ± 2 deg.C (Size : 2012) ; Testing Time : 96 ± 2 Hours	Elec. no variation Appearance no deformation
5	Low Temperature	Temperature : -25 ± 2 deg.C (Size : 0605 / 0806) / -40 ± 2 deg.C (Size : 2012) ; Testing Time : 96 ± 2 Hours	Elec. no variation Appearance no deformation
6	Temperature and Humidity Cycle	Temperature Humidity Time 25 deg.C 90% ~ 95% RH 3.0 Hr 55 deg.C 95% ~ 96% RH 5.0 Hr 25 deg.C 90% ~ 95% RH 3.0 Hr Cycle : 20 Cycles	Elec. no variation Appearance no deformation
7	Vibration	Frequency: 10Hz ~ 55Hz, Amplitude: 1.5 mm Direction: X, Y, Z, Time: 2 Hours each	Elec. no variation Appearance no deformation
8	Solderability	Go through real SMT IR-Reflow The profile like our suggest profile. Preheat : 160 ± 10 deg.C (90 sec) Peak : 245 ± 5 deg.C Peak Time : 50 Sec. / up 217 deg.C	Elec. no variation Appearance no deformation
9	Soldering Heat Resistance	Preheat: 160 ± 10 deg.C (90 sec) Solder: Sn / Ag / Cu (Pb Free) Solder Temp.: 260 ± 5 deg.C, Time: 3 ± 1 seconds	Elec. no variation Appearance no deformation
10	Iron Solder Heat Resistance	Solder Temp.: 350 ± 5 deg.C Flux: Rosin, Time: 3 ± 1 seconds	Elec. no variation Appearance no deformation
11	Bending Strength	Unit : mm 10 x 10 R : 0.5	Elec. no variation Appearance no deformation
12	Flexure Strength	Unit : mm	Elec. no variation Appearance no deformation
13	Terminal Strength	Y Push 10N force to X , Y direction Mount on PCB Solder Cream 0.15 mm Y	Elec. no variation Appearance no deformation
14	High-Voltage	100 V DC between core & winding	Elec. no variation Appearance no deformation
15	Load life	Temperature : 25 ± 3 deg.C Load : Allowed DC Current, Test Time : 96 ± 2 Hours	Elec. no variation Appearance no deformation



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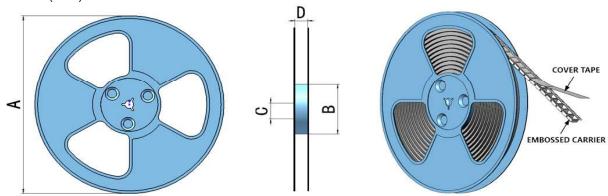
Packaging Information:

Tape Dimension (mm)



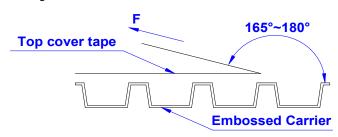
SIZE/mm	A0	В0	W	Р	F	K0	Т
0605	0.63+/-0.03	0.77 +/-0.03	8.00 +/-0.1	2.00 +/-0.05	3.50 +/-0.05	0.42+/-0.03	0.42 +/-0.03
0806	0.78+/-0.03	1.04+/-0.03	8.00 +/-0.1	2.00 +/-0.05	3.50 +/-0.05	0.60+/-0.03	0.60+/-0.03
2012	1.42 +/-0.1	2.25 +/-0.1	8.00 +/-0.1	4.00 +/-0.1	3.50 +/-0.05	1.22 +/-0.1	0.22 +/-0.05

Reel Dimension (mm)



SIZE/mm	Reel Size	A	В	С	D	QTY / Reel
0605	7" x 8 mm	178	60	13	9.0	10000 PCS
0806	7" x 8 mm	178	50	13	10.0	10000 PCS
2012	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).

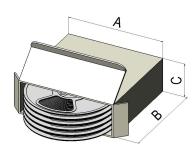
Room Temp.	Room Humidity	Room Atm.	Tearing Speed	
(°C)	(%)	(hPa)	(mm / min)	
5 ~ 35	45 ~ 85	860 ~ 1060	300	



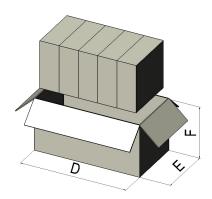
Product Series :	GBDC	Brand :	GOTREND
File Version :	GBDC-SERIES-V1R2	Editor :	Qiuyi Wu
Established Date	2011.08.24	Description :	Multilayer Ferrite Common Mode
Latest Edit Date :	2023.07.12	Product Type :	☑ Standard ☐ Customize

Packaging Information :

Box Package



7" Small Box



7" Large Box

SIZE/mm	Rells size	А	В	С	Large Box	D	E	F	Reels in Small Box (QTY)	Small Box in Large Box(QTY)
0605	7"	190	195	75	7"	408	210	220	5(50000)	5(250000)
0806	7"	190	195	75	7"	408	210	220	5(50000)	5(250000)
2012	7"	190	195	75	7"	408	210	220	5(20000)	5(100000)