# Notice for TAIYO YUDEN products

### Please read this notice before using the TAIYO YUDEN products.

### **REMINDERS**

Product information in this catalog is as of October 2013. All of the contents specified herein are subject to change without notice due to technical improvements, etc. Therefore, please check for the latest information carefully before practical application or usage of the Products.

Please note that TAIYO YUDEN CO., LTD. shall not be responsible for any defects in products or equipment incorporating such products, which are caused under the conditions other than those specified in this catalog or individual specification.

Please contact TAIYO YUDEN CO., LTD. for further details of product specifications as the individual specification is available.

Please conduct validation and verification of products in actual condition of mounting and operating environment before commercial shipment of the equipment.

All electronic components or functional modules listed in this catalog are developed, designed and intended for use in general electronics equipment.(for AV, office automation, household, office supply, information service, telecommunications, (such as mobile phone or PC) etc.). Before incorporating the components or devices into any equipment in the field such as transportation,( automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network (telephone exchange, base station) etc. which may have direct influence to harm or injure a human body, please contact TAIYO YUDEN CO., LTD. for more detail in advance.

Do not incorporate the products into any equipment in fields such as aerospace, aviation, nuclear control, submarine system, military, etc. where higher safety and reliability are especially required.

In addition, even electronic components or functional modules that are used for the general electronic equipment, if the equipment or the electric circuit require high safety or reliability function or performances, a sufficient reliability evaluation check for safety shall be performed before commercial shipment and moreover, due consideration to install a protective circuit is strongly recommended at customer's design stage.

The contents of this catalog are applicable to the products which are purchased from our sales offices or distributors (so called "TAIYO YUDEN' s official sales channel").
It is apply applied to the products our sales of TAIYO YUDEN' sofficial sales channel".

It is only applicable to the products purchased from any of TAIYO YUDEN's official sales channel.

Please note that TAIYO YUDEN CO., LTD. shall have no responsibility for any controversies or disputes that may occur in connection with a third party's intellectual property rights and other related rights arising from your usage of products in this catalog. TAIYO YUDEN CO., LTD. grants no license for such rights.

Caution for export

Certain items in this catalog may require specific procedures for export according to "Foreign Exchange and Foreign Trade Control Law" of Japan, "U.S. Export Administration Regulations", and other applicable regulations. Should you have any question or inquiry on this matter, please contact our sales staff.

# WIRE-WOUND CHIP INDUCTORS FOR SIGNAL LINES (LB SERIES M TYPE)



$\begin{array}{c c c c c c c c c c c c c c c c c c c $	PARTS NUMB	ER	*Operating Temp. : -40~
Code       Series name       Code         LBM       Wound chip inductor for signal line       R12         ②Dimensions(L×W)       1R0       1R0         Code       Dimensions(L×W)[mm]       100         2016       2.0×1.6       101         ③Packaging       ⑤Inductance tolerance       Code         T       Taping       Code	L B M		$\Delta =$ Blank space
LBM     Wound chip inductor for signal line     (example)       ②Dimensions (L × W)     R12     1R0       Code     Dimensions (L × W) [mm]     100       2016     2.0 × 1.6     101       ③Packaging     ⑤Inductance tolerance       T     Taping	①Series name		(4)Nominal inductance
(2)Dimensions (L × W)         R12           (2)Dimensions (L × W)         1R0           (2)Oind         2.0 × 1.6           (3)Packaging         101           (Code         Packaging           (5)Inductance tolerance           T         Taping	Code	Series name	Code
(2)Dimensions(L×W)         1R0           Code         Dimensions(L×W)[mm]         100           2016         2.0×1.6         101           (3)Packaging         Code         Packaging           T         Taping         Code	LBM	Wound chip inductor for signal line	(example)
Code         Dimensions (L × W) [mm]         100           2016         2.0 × 1.6         101           ③Packaging         Sinductance tolerance           Code         Packaging           T         Taping			R12
2016     2.0 × 1.6       ③Packaging     101       ③Packaging     SInductance tolerance       T     Taping	2 Dimensions (L	×W)	1R0
③Packaging     ※R=Decimal point       ③Packaging     ⑤Inductance tolerance       T     Taping	Code	Dimensions (L × W) [mm]	100
③Packaging     ⑤Inductance tolerance       Code     Packaging       T     Taping	2016	2.0×1.6	101
Code         Packaging         ⑤Inductance tolerance           T         Taping         Code	 		ℜR=Decimal point
T Taping Code			
	Code		-
J	Т	Taping	Code
			J

#### \*Operating Temp. : -40~+105°C(Including self-generated heat)

④Nominal induct	4)Nominal inductance						
Code (example)	Nominal inductance [ $\mu$ H]						
R12	0.12						
1R0	1.00						
100	10						
101	100						
X-P-Dopimal no	VP-Desimel point						

Code	Inductance tolerance				
J	$\pm 5\%$				

6 Internal code

	w		ommendeo ace Moun	d Land Patterr ting	าร					
		• Mou	unting and	d soldering cor	nditions should	be checke	ed beforehand.			
	T	• App	licable so	oldering proces	ss to these pro	ducts is re	flow soldering only.			
			Туре	A	В	С				
$<\gamma$		LE	3M2016	0.6	1.0	1.8				
						Unit : mn	1			
<b>T</b>	1	w		Ŧ	_		Standard	quantity [pcs]		
Туре	L	vv			e		Paper tape	Embossed tape		
LBM2016	$2.0 \pm 0.2$	1.6±0.2	1.6±0.2		1.6±0.2		$0.5 \pm 0.2$	2	_	2000
	$(0.08 \pm 0.008)$	$(0.063 \pm 0.008)$	(0.0	$63 \pm 0.008$	$(0.02 \pm 0.0)$	08)		2000		

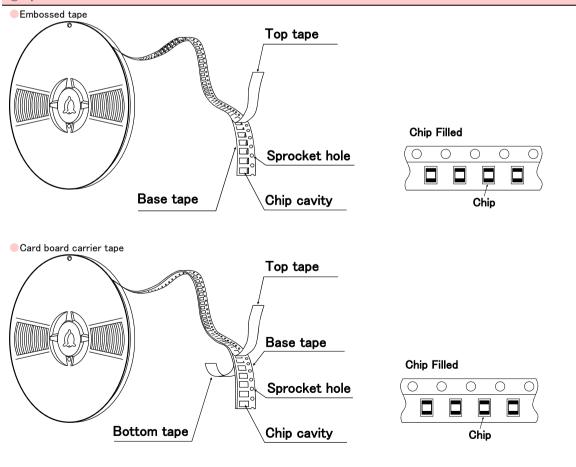
Parts number	EHS	Nominal inductance [ $\mu$ H]	Inductance tolerance	Q (min.)	Self-resonant frequency [MHz] (min.)	DC Resistance [Ω](±30%)	Rated current [mA] (max.)	Measuring frequency [MHz]
LBM 2016TR12J	RoHS	0.12	±5%	30	600	0.13	610	25.2
LBM 2016TR15J	RoHS	0.15	±5%	30	550	0.15	570	25.2
LBM 2016TR18J	RoHS	0.18	±5%	30	500	0.15	560	25.2
LBM 2016TR22J	RoHS	0.22	±5%	30	450	0.20	520	25.2
LBM 2016TR27J	RoHS	0.27	±5%	30	425	0.21	510	25.2
LBM 2016TR33J	RoHS	0.33	±5%	30	400	0.21	490	25.2
LBM 2016TR39J	RoHS	0.39	±5%	30	375	0.26	440	25.2
LBM 2016TR47J	RoHS	0.47	±5%	30	350	0.26	430	25.2
LBM 2016TR56J	RoHS	0.56	±5%	30	300	0.29	410	25.2
LBM 2016TR68J	RoHS	0.68	±5%	30	270	0.32	400	25.2
LBM 2016TR82J	RoHS	0.82	±5%	30	250	0.34	390	25.2
LBM 2016T1R0J	RoHS	1.0	±5%	30	220	0.38	385	7.96
LBM 2016T1R2J	RoHS	1.2	±5%	30	180	0.41	370	7.96
LBM 2016T1R5J	RoHS	1.5	±5%	30	135	0.47	350	7.96
LBM 2016T1R8J	RoHS	1.8	±5%	30	100	0.48	345	7.96
LBM 2016T2R2J	RoHS	2.2	±5%	30	75	0.54	340	7.96
LBM 2016T2R7J	RoHS	2.7	±5%	30	55	0.59	310	7.96
LBM 2016T3R3J	RoHS	3.3	±5%	30	48	0.68	290	7.96
LBM 2016T3R9J	RoHS	3.9	±5%	30	43	0.74	275	7.96
LBM 2016T4R7J	RoHS	4.7	±5%	30	40	0.78	270	7.96
LBM 2016T5R6J	RoHS	5.6	±5%	25	36	0.88	255	7.96
LBM 2016T6R8J	RoHS	6.8	±5%	25	33	0.97	240	7.96
LBM 2016T8R2J	RoHS	8.2	±5%	25	30	1.1	225	7.96
LBM 2016T100J	RoHS	10	±5%	25	27	1.2	215	2.52
LBM 2016T120J	RoHS	12	±5%	25	23	1.4	200	2.52
LBM 2016T150J	RoHS	15	±5%	25	20	1.5	190	2.52
LBM 2016T180J	RoHS	18	±5%	25	18	2.5	150	2.52
LBM 2016T220J	RoHS	22	±5%	25	17	2.8	140	2.52
LBM 2016T270J	RoHS	27	±5%	25	16	3.2	130	2.52
LBM 2016T330J	RoHS	33	±5%	25	15	3.6	125	2.52
LBM 2016T390J	RoHS	39	±5%	20	14	3.9	120	2.52
LBM 2016T470J	RoHS	47	±5%	20	13	4.1	115	2.52
LBM 2016T560J	RoHS	56	±5%	20	12	5.9	95	2.52
LBM 2016T680J	RoHS	68	±5%	20	11	7.0	90	2.52
LBM 2016T820J	RoHS	82	±5%	20	10	7.7	85	2.52
LBM 2016T101J	RoHS	100	±5%	15	9.0	8.0	80	0.796

## WIRE-WOUND CHIP INDUCTORS (LB SERIES), WIRE-WOUND CHIP POWER INDUCTORS (CB SERIES). WIRE-WOUND CHIP INDUCTORS FOR SIGNAL LINES (LB SERIES M TYPE)

#### PACKAGING

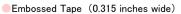
①Minimum Quantity		
Turne	Standard Qu	antity [pcs]
Туре	Paper Tape	Embossed Tape
LB C3225	_	1000
CB C3225		1000
LB 3218	_	2000
LB R2518		
LB C2518		
LB 2518	-	2000
CB 2518		
CB C2518		
LBM2016		
LB C2016		
LB 2016	-	2000
CB 2016		
CB C2016		
LB 2012		
LB C2012		
LB R2012	-	3000
CB 2012		
CB C2012		
CB L2012	4000	—
LB 1608	4000	—
LBMF1608		3000
CBMF1608		3000

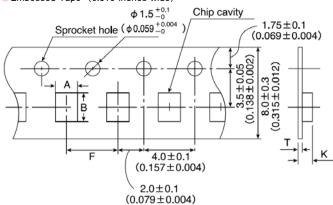
#### (2) Tape material



This catalog contains the typical specification only due to the limitation of space. When you consider the purchase of our products, please check our specification. For details of each product (characteristics graph, reliability information, precautions for use, and so on), see our Web site (http://www.ty-top.com/)

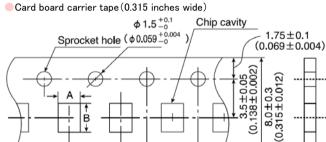


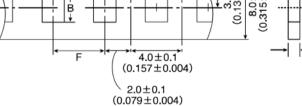




<b>T</b>	Chip	cavity	Insertion pitch	Tape thi	ickness
Туре	A	В	F	Т	К
LBM2016	1.75±0.1	2.1±0.1	4.0±0.1	$0.3 \pm 0.05$	1.9max.
EBMEOTO	$(0.069 \pm 0.004)$	$(0.083 \pm 0.004)$	$(0.157 \pm 0.004)$	$(0.012 \pm 0.002)$	(0.075max.)
LB C3225	2.8±0.1	$3.5 \pm 0.1$	4.0±0.1	$0.3 \pm 0.05$	4.0max.
CB C3225	$(0.110 \pm 0.004)$	$(0.138 \pm 0.004)$	$(0.157 \pm 0.004)$	(0.012±0.002)	(0.157max.)
LB 3218	2.1±0.1	3.5±0.1	4.0±0.1	$0.3 \pm 0.05$	2.2max.
LB 3218	$(0.083 \pm 0.004)$	$(0.138 \pm 0.004)$	$(0.157 \pm 0.004)$	(0.012±0.002)	(0.087max.)
LB 2518					
CB 2518	2.15±0.1	$2.7 \pm 0.1$	$4.0 \pm 0.1$	$0.3 \pm 0.05$	2.2max.
LB C2518					
CB C2518	$(0.085 \pm 0.004)$	$(0.106 \pm 0.004)$	$(0.157 \pm 0.004)$	$(0.012 \pm 0.002)$	(0.087max.)
LB R2518					
LB 2016					
CB 2016	1.75±0.1	$2.1 \pm 0.1$	4.0±0.1	$0.3 \pm 0.05$	1.9max.
LB C2016	$(0.069 \pm 0.004)$	$(0.083 \pm 0.004)$	$(0.157 \pm 0.004)$	(0.012±0.002)	(0.075max.)
CB C2016					
LB 2012					
CB 2012	1.45 + 0.1		40+01		1.45
LB C2012	$1.45 \pm 0.1$	$2.25 \pm 0.1$	$4.0 \pm 0.1$	$0.25 \pm 0.05$	1.45max.
CB C2012	$(0.057 \pm 0.004)$	$(0.089 \pm 0.004)$	$(0.157 \pm 0.004)$	(0.010±0.002)	(0.057max.)
LB R2012					
LBMF1608	1.1±0.1	1.9±0.1	4.0±0.1	$0.25 \pm 0.05$	1.2max.
CBMF1608	$(0.043 \pm 0.004)$	$(0.075 \pm 0.004)$	$(0.157 \pm 0.004)$	(0.010±0.002)	(0.047max.)

Unit:mm(inch)

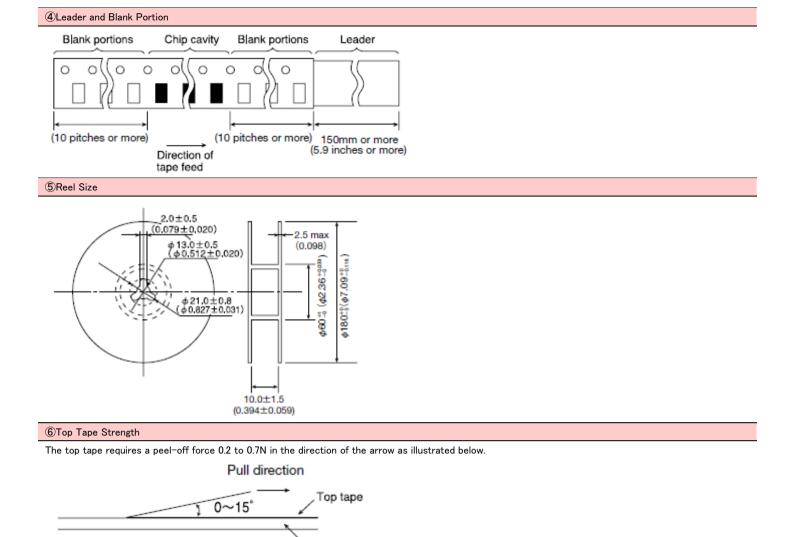




Turne	Chip	cavity	Insertion pitch	Tape thickness
Туре	A	В	F	Т
CB L2012	$1.55 \pm 0.1$	2.3±0.1	4.0±0.1	1.1max.
	$(0.061 \pm 0.004)$	$(0.091 \pm 0.004)$	(0.157±0.004)	(0.043max.)
LB 1608	1.0±0.1	1.8±0.1	4.0±0.1	1.1max.
LB 1608	$(0.039 \pm 0.004)$	$(0.071 \pm 0.004)$	(0.157±0.004)	(0.043max.)
				Unit:mm(inch)

Т





Base tape

## WIRE-WOUND CHIP INDUCTORS (LB SERIES), WIRE-WOUND CHIP POWER INDUCTORS (CB SERIES), WIRE-WOUND CHIP INDUCTORS FOR SIGNAL LINES (LB SERIES M TYPE)

#### RELIABILITY DATA

RELIABILITY DA	ΤΑ		
1.Operating tempera	ature Range		
1.operating temper	LB, LBC, LBR, LBMF Series		
Specified Value	CB, CBC, CBL, CBMF Series	$-40 \sim +105^{\circ} C($ Including self-generated heat)	
	LBM Series		
2 Storage Tempera	ture Range(after soldering)		
2. Otorage rempere	LB, LBC, LBR, LBMF Series		
Specified Value	CB, CBC, CBL, CBMF Series		
opecified value	LBM Series		
Test Methods and	LB, CB Series:		
Remarks	Please refer the term of "7. storage conditions" in precaution	ns.	
3.Rated Current			
	LB, LBC, LBR, LBMF Series		
Specified Value	CB, CBC, CBL, CBMF Series	Within the specified tolerance	
	LBM Series	1	
4.Inductance			
-inductance	LB, LBC, LBR, LBMF Series	1	
Specified Value	CB, CBC, CBL, CBMF Series	Within the specified tolerance	
Specified value	LBM Series		
Test Methods and	LBM Series		
Remarks	Measuring equipment :LCR Mater(HP4285A or its e	equivalent)	
5.Q			
	LB, LBC, LBR, LBMF Series		
Specified Value	CB, CBC, CBL, CBMF Series	1 -	
	LBM Series	Within the specified tolerance	
Test Methods and	LBM Series		
Remarks	Measuring equipment : LCR Mater(HP4285A or its eq	uivalent)	
6.DC Resisitance			
	LB, LBC, LBR, LBMF Series		
Specified Value	CB, CBC, CBL, CBMF Series	Within the specified tolerance	
	LBM Series		
Test Methods and	Measuring equipment : DC Ohmmeter(HIOKI 3227 or its equ	uivalent)	
Remarks		······································	
7.Self-Resonant Fre			
	LB, LBC, LBR, LBMF Series	4	
Specified Value	CB, CBC, CBL, CBMF Series	Within the specified tolerance	
	LBM Series		
Test Methods and Remarks	Measuring equipment : Impedance analyzer (HP4291A or its	equivalent)	

8.Temperature Char	racteristic				
	LBM2016	;			Inductance change : Within±5%
	LB1608	LB2012	LBR2012	CB2012	
	CBL2012	LB2016	CB2016	LB2518	Inductance change : Within±20%
Specified Value	LBR2518	CB2518	LBC3225	CBC3225	
	LBMF160	08 CBMF1608	LBC2016	CBC2016	
	LBC2518	CBC2518	LB3218		Inductance change : Within±25%
	LBC2012	CBC2012			Inductance change : Within±35%
	Change o	of maximum inductan	ce deviation in	step 1-5	
	Step	Tempe	erature(°C)		
	Step	LB, (	CB Series		
Test Methods and	1		20		
Remarks	2		-40		
	3	20(Referen	ce temperature	e)	
	4	+85(Maximum o	perating tempe	erature)	
	5		20		

9.Rasistance to Flex	xure of Substrate	
	LB, LBC, LBR, LBMF Series	
Specified Value	CB, CBC, CBL, CBMF Series	No damage.
	LBM Series	
	Warp : 2mm(LB+LBC+LBR+CB+CBC+CBL+LBM+L	BMF•CBMF Series)
Test Methods and Remarks	Test substrate : Board according to JIS C0051 Thickness : 0.8mm(LB+LBMF+CBMF1608) : 1.0mm(Others) Pressing jig	
	R5 45±2mm	

10.Body Strength	10.Body Strength					
	LB, LBC, LBR, LBMF Series					
Specified Value	CB, CBC, CBL, CBMF Series	No damage.				
	LBM Series					
Test Methods and Remarks	LB·LBC·LBR·CB·CBC·CBL·LBM Applied force : 10N Duration : 10sec. LB1608·LBMF1608·CBMF1608 Applied force : 5N Duration : 10sec.					

11.Adhesion of terminal electrode				
	LB, LBC, LBR, LBMF Series			
Specified Value	CB, CBC, CBL, CBMF Series		No abnormality.	
	LBM Series			
Test Methods and Remarks	LB·LBC·LBR·CB·CBC·CBL·LBM·LBMF·CBMF Applied force : 10N to X and Y directions			



12.Resistance to vi	12.Resistance to vibration			
	LB, LBC, LBR, LBMF Series		Inductance change : Within±10%	
Specified Value	CB, CBC, CBL, CBMF Series		No significant abnormality in appearance.	
LBM Series			Inductance change : Within $\pm 5\%$ No significant abnormality in appearance.	
Test Methods and Remarks	LB·LBR·LBC·CB·CBC·CBL·LBM·LBMF·CBMF : Accord Vibration type : A Directions : 2 hrs each in X, Y and Z direction Frequency range : 10 to 55 to 10 Hz(1min.) Amplitude : 1.5mm Mounting method : Soldering onto printed board Recovery : At least 2 hrs of recovery under thrs.			

13.Drop test		
	LB, LBC, LBR, LBMF Series	
Specified Value	CB, CBC, CBL, CBMF Series	-
	LBM Series	

14.Solderability			
Specified Value	LB, LBC, LBR, LBMF Series		At least 90% of surface of terminal electrode is covered by new
	CB, CBC, CBL, CBMF Series		
	LBM Series		
Test Methods and Remarks	LB·LBC·LBR·CB·CBC·CBL·LBM·LBMF·CBMF:         Solder temperature       : 245±5°C         Duration       : 5±0.5sec         Flux       : Methanol solution with 25% of		lophony

15.Resistance to so	15.Resistance to soldering			
	LB, LBC, LBR, LBMF Series	Inductance change : Within±10%		
Specified Value	CB, CBC, CBL, CBMF Series			
	LBM Series	Inductance change : Within±5%		
Test Methods and Remarks	LB·LBC·LBR·CB·CBC·CBL·LBM·LBMF·CBMF: 3 times of reflow oven at 230°C MIN for 40sec. with peak temperature at 260 °C for 5sec.			

16.Resisitance to so	16.Resisitance to solvent			
Specified Value	LB, LBC, LBR, LBMF Series			
	CB, CBC, CBL, CBMF Series			
	LBM Series			
Test Methods and Remarks	Type of solvent	: Room temperature : Isopropyl alcohol : 90s. Immersion and cleaning.		

17.Thermal shock	17.Thermal shock				
	LB, LBC, LBR, LBMF Series	Inductance change : Within±10% No significant abnormality in appearance.			
Specified Value	CB, CBC, CBL, CBMF Series				
	LBM Series				
Test Methods and Remarks	LB·LBC·LBR·CB·CBC·CBL·LBM·LBMF·CBMF: -40~+85°C, maintain times 30min. ,100 cycle         Recovery       : At least 2 hrs of recovery under the standard condition after the test, followed by the measurement within 48 hrs.				

18.Damp heat life test				
	LB, LBC, LBR, LBMF Series		Inductance change : Within±10% No significant abnormality in appearance.	
Specified Value	CB, CBC, CBL, CBMF Series			
	LBM Series			
Test Methods and Remarks	Temperature Humidity Duration Recovery	: 60±2°C : 90~95%RH : 1000 hrs : At least 2 hrs of recovery under the standard condition after the test, followed by the measurement within 48 hrs.		

19.Loading under damp heat life test				
Specified Value	LB, LBC, LBR, LBMF Series		Inductance change : Within±10% No significant abnormality in appearance.	
	CB, CBC, CBL, CBMF Series			
	LBM Series			
Test Methods and	Temperature	: 60±2°C		
Remarks	Humidity	: 90~95%RH		
	Duration	: 1000 hrs		
	Applied current	: Rated current		
	Recovery	: At least 2 hrs of recovery under the sta	andard condition after the test, followed by the measurement within 48 hrs.	

20.High temperature	20.High temperature life test			
	LB, LBC, LBR, LBMF Series		_	
Specified Value	CB, CBC, CBL, CBMF Series		Inductance change : Within±10%	
	LBM Series		No significant abnormality in appearance.	
Test Methods and Remarks	Temperature Duration Recovery	: 85±2°C : 1000 hrs : At least 2 hrs of recovery under the standard condition after the test, followed by the measurement with		

21.Loading at high t	g at high temperature life test				
Specified Value	LB, LBC, LBR, LBMF Series		Inductance change : Within±10% (LBC3225 Series : Within±20%) No significant abnormality in appearance.		
	CB, CBC, CBL, CBMF Series				
	LBM Series				
	Temperature	: 85±2°C			
Test Methods and	nd Duration : 1000 hrs				
Remarks	Applied current	: Rated current			
	Recovery : At least 2 hrs of recovery under the standard condition after the test, followed by		ndard condition after the test, followed by the measurement within 48 hrs.		

22.Low temperature life test				
Specified Value	LB, LBC, LBR, LBMF Series		Inductance change : Within±10% - No significant abnormality in appearance.	
	CB, CBC, CBL, CBMF Series			
	LBM Series			
Test Methods and Remarks	Temperature Duration Recovery	: -40±2°C : 1000 hrs : At least 2 hrs of recovery under the standard condition after the test, followed by the measurement within 48 hrs.		

23.Standard condit	ion	
	LB, LBC, LBR, LBMF Series	Standard test conditions
Specified Value	CB, CBC, CBL, CBMF Series	Unless specified, Ambient temperature is $20 \pm 15^{\circ}$ C and the Relative
	LBM Series	humidity is 65±20%. If there is any doubt about the test results, further measurement shall be had within the following limits: Ambient Temperature: 20±2°C Relative humidity: 65±5% Inductance value is based on our standard measurement systems.

## WIRE-WOUND CHIP INDUCTORS (LB SERIES), WIRE-WOUND CHIP POWER INDUCTORS (CB SERIES), WIRE-WOUND CHIP INDUCTORS FOR SIGNAL LINES (LB SERIES M TYPE)

#### PRECAUTIONS

1. Circuit Design	
Precautions	<ul> <li>Operating environment</li> <li>The products described in this specification are intended for use in general electronic equipment, (office supply equipment, telecommunications systems, measuring equipment, and household equipment). They are not intended for use in mission-critical equipment or systems requiring special quality and high reliability (traffic systems, safety equipment, aerospace systems, nuclear control systems and medical equipment including life-support systems,) where product failure might result in loss of life, injury or damage. For such uses, contact TAIYO YUDEN Sales Department in advance.</li> </ul>

2. PCB Design	
Precautions	<ul> <li>◆Land pattern design</li> <li>1. Please contact any of our offices for a land pattern, and refer to a recommended land pattern of a right figure or specifications.</li> </ul>
Technical considerations	PRECAUTIONS [Recommended Land Patterns] Surface Mounting • Mounting and soldering conditions should be checked beforehand. • Applicable soldering process to those products is reflow soldering only.

3. Considerations for automatic placement	
Precautions	<ul> <li>Adjustment of mounting machine</li> <li>1. Excessive impact load should not be imposed on the products when mounting onto the PC boards.</li> <li>2. Mounting and soldering conditions should be checked beforehand.</li> </ul>
Technical considerations	1. When installing products, care should be taken not to apply distortion stress as it may deform the products.

4. Soldering	
Precautions	<ul> <li>Reflow soldering(LB and CB Types)</li> <li>1. For reflow soldering with either leaded or lead-free solder, the profile specified in "point for controlling" is recommended.</li> <li>Recommended conditions for using a soldering iron</li> <li>1. Put the soldering iron on the land-pattern. Soldering iron's temperature - Below 350°C Duration-3 seconds or less. The soldering iron should not come in contact with inductor directly.</li> </ul>
Technical considerations	<ul> <li>Reflow soldering( LB and CB Types)         <ol> <li>Reflow profile</li> <li>Reflow profile</li> <li>Reflow profile</li> <li>Sec max</li> <li>Peak:</li> <li>200</li> <li>90±30sec</li> <li>230°C min</li> <li>Heating Time [sec]</li> </ol> </li> <li>Recommended conditions for using a soldering iron         <ol> <li>Components can be damaged by excessive heat where soldering conditions exceed the specified range.</li> </ol> </li> </ul>

5. Cleaning	5. Cleaning	
Precautions	♦Cleaning conditions Washing by supersonic waves shall be avoided.	
Technical considerations	♦Cleaning conditions If washed by supersonic waves, the products might be broken.	

This catalog contains the typical specification only due to the limitation of space. When you consider the purchase of our products, please check our specification. For details of each product (characteristics graph, reliability information, precautions for use, and so on), see our Web site (http://www.ty-top.com/).

6. Handling	
Precautions	<ul> <li>Handling <ol> <li>Keep the inductors away from all magnets and magnetic objects.</li> <li>Breakaway PC boards (splitting along perforations)</li> <li>When splitting the PC board after mounting inductors, care should be taken not to give any stresses of deflection or twisting to the board.</li> <li>Board separation should not be done manually, but by using the appropriate devices.</li> <li>Mechanical considerations <ol> <li>Please do not give the inductors any excessive mechanical shocks.</li> </ol> </li> </ol></li></ul>
Technical considerations	<ul> <li>Handling</li> <li>1. There is a case that a characteristic varies with magnetic influence.</li> <li>Breakaway PC boards (splitting along perforations)</li> <li>1. Planning pattern configurations and the position of products should be carefully performed to minimize stress.</li> <li>Mechanical considerations</li> <li>1. There is a case to be damaged by a mechanical shock.</li> </ul>

	♦Storage
Precautions	<ol> <li>To maintain the solderability of terminal electrodes and to keep the packing material in good condition, temperature and humidity in the storage area should be controlled.         <ul> <li>Recommended conditions</li> <li>Ambient temperature :0~40°C / Humidity : Below 70% RH</li> <li>The ambient temperature must be kept below 30°C even under ideal storage conditions, solderability of products electrodes may decrease as time passes. For this reason,</li> <li>LB type : Should be used within 6 months from the time of delivery.</li> </ul> </li> </ol>
Technical considerations	<ul> <li>Storage</li> <li>1. Under a high temperature and humidity environment, problems such as reduced solderability caused by oxidation of terminal electrodes and deterioration of taping/packaging materials may take place.</li> </ul>

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