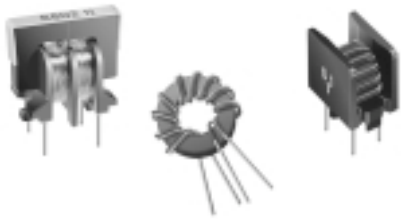
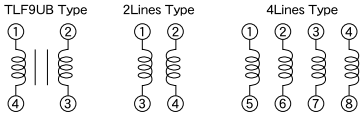
コモンモードチョークコイル（DC、信号ライン用リードタイプ
COMMON MODE CHOKE COILS (FOR DC AND SIGNAL LINES) LEADED TYPE



OPERATING TEMP.	TLFタイプ：—25～＋115℃
	CMタイプ：—25～＋105℃

製品自己発熱含む(Including self-generated heat)

等価回路
Equivalent circuits



フロー／WAVE

特長　FEATURES

・小形軽量、高信頼性
・基板への実装が容易

・Highly reliable, compact and lightweight
・Easily inserted into the PCB

用途　APPLICATIONS

・TLFタイプ：低周波（AM放送波）帯域のノイズ対策
（多機能電話機、PBX,FAX等不要輻射電界及び放送波に対するイミュニティ対策）
・CM,BUタイプ：高周波（MHz）帯域のノズル対策

・TLF Type: Countemeasure for noise in the low-frequency (AM) broadcasting band. Shields against radiated emissions in the broadcasting frequency for multi-functional telephone sets. PBXs, faxes, etc.
・CM/BU Type: Countermeasure for noise in the high-frequency (MHz) band

形名表記法　ORDERING CODE

TLF Type

1 形式

TLF	ラインフィルタ

2 コアの長辺寸法（mm）

△9	9

△=スペース

3 形状

UB△	U字コア分割巻縦形
UBH	U字コア分割巻横形

△=スペース

4 公称インダクタンス（μH）

例	
302	3000
203	20000

5 インダクタンス許容差（%）

W	$\pm^{100}_{10}$

6 7 当社管理記号

△△	標準品

△=　スペース

T L F　△ 9　U B H　3 0 2　W　○　○
1　2　3　4　5　6　7

1 Type

TLF	Line filter

2 Dimensions of core(dia.)(mm)

△9	9

△=Blank space

3 Shape

UB△	U core, vertically split wound
UBH	core, horizontally split wound

△=Blank space

4 Nominal inductance(μH)

example	
302	3000
203	20000

5 Inductance tolerance(%)

W	$\pm^{100}_{10}$

6 7 Internal code

△△	Standard product

△=Blank space

CM-BU Type

1 形式

CM	コモンモードチョークコイル
BU	

2 コアの外径寸法（mm）

05	4.8
0.8	8.0
12	12.0

3 形状

RA	複線リード直出し
RB	ベース使用ピンタイプ

4 試作番号

01	
～	
20	

5 当社管理記号

△	標準品

△=スペース

C　M　0　5　R　A　0　6　○
1　2　3　4　5

1 Type

CM	Common mode choke coile
BU	

2 Core dimensions (mm)

05	5.0
08	8.0
12	12.0

3 Shape

RA	Double-wire lead
RB	Pin type with base

4 Product classification code

01	
～	
20	

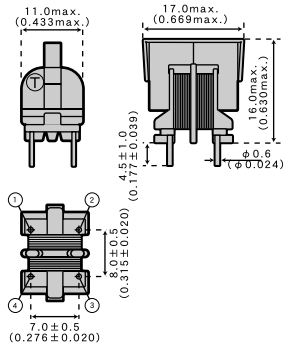
5 Internal code

△	Standard product

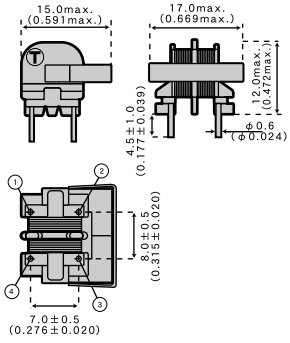
△=Blank space

外形寸法　EXTERNAL DIMENSIONS

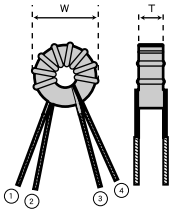
TLF9UB Type



TLF9UB H Type

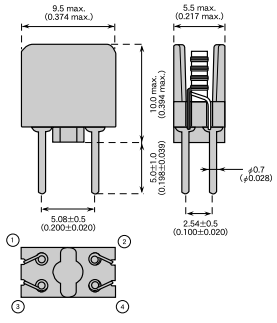


CM□□RA Type / BU08RA Type

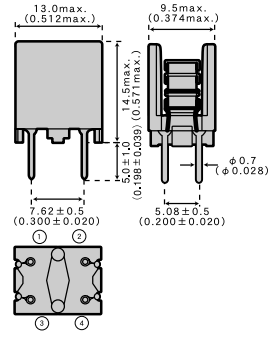


Type	W (max.)	T (max.)
CM05	6.5 (0.256)	3.0 (0.118)
CM08, BU08	11.0 (0.433)	5.0,6.0 (0.197, 0.024)
CM12	15.5 (0.610)	7.0 (0.276)

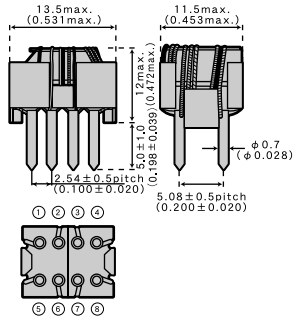
CM05RB (2Lines Type)



CM08RB (2Lines) Type



CM08RB (4Lines) Type



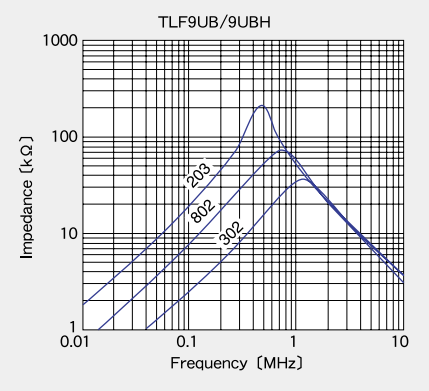
Unit: mm (inch)

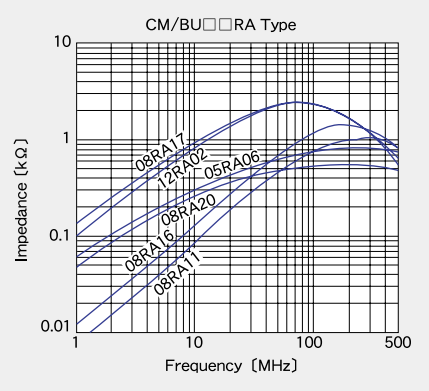
アイテム一覧　PART NUMBERS

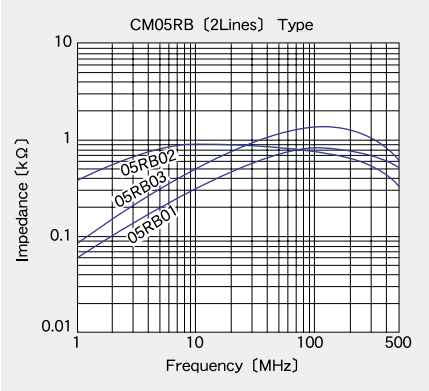
形名 Ordering code		ライン数 No. of lines	インダクタンス Inductance〔μH〕 〔+100 -10 %〕	直流抵抗〔Ω〕DC resistance (max.)	定格電流〔A〕 Rated current (max.)	定格電圧〔V〕 Rated voltage D.C.	絶縁抵抗〔MΩ〕 Insulation resistance (min.)	インピーダンス〔KΩ〕参考値 Impedance (Reference values)
TLF9UBH302W		2	3000	1.5	0.4		100	≧20(at 1MHz)
TLF9UB 302W								
TLF9UBH802W			8000	3.0	0.3	50		≧40(at 700kHz)
TLF9UB 802W								
TLF9UBH203W			20000	6.5	0.18			≧150(at 500kHz)
TLF9UB 203W								

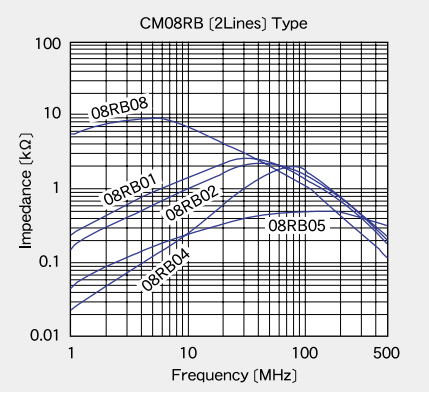
形名 Ordering code			ライン No.of lines	インダクタンス〔μH〕 Inductance (at 1kHz)	インピーダンス〔Ω〕 Impedance (typical)	直流抵抗〔Ω〕 DC resistance (max.)	定格電流〔A〕 Rated current (max.)	定格電圧〔V〕 Rated voltage D.C.	絶縁抵抗〔MΩ〕 Insulation resistance (min.)
CM05RA	CM05RA06		2	7.0min	700 (at 200MHz)	0.05	1.5	50	100
BU08RA	BU08RA11			1.1min	1000 (at 250MHz)	0.04	4.0		
	BU08RA16			0.5min	1200 (at 200MHz)	0.05	3.0		
CM08RA	CM08RA17			15.0min	2000 (at 80MHz)	0.04	2.4		
	CM08RA20			6.0min	500 (at 200MHz)	0.02	5.5		
CM12RA	CM12RA02			10min	2000 (at 80MHz)	0.04	3.0		
CM05RB	CM05RB01			7.0min	700 (at 70MHz)	0.05	2.0		
	CM05RB02			60.0min	1000 (at 10MHz)	0.08	1.0		
	CM05RB03			15.0min	1400 (at 100MHz)	0.06	1.5		
CM08RB	CM08RB01			40.0min	2500 (at 30MHz)	0.04	2.0		
	CM08RB02			15.0min	2000 (at 50MHz)	0.04	2.4		
	CM08RB08			600min	9000 (at 5MHz)	0.25	0.5		
	CM08RB04			15.0min	2000 (at 70MHz)	0.04	3.0		
	CM08RB05			6.0min	450 (at 100MHz)	0.02	4.0		
	CM08RB03		4	—	1000 (at 50MHz)	0.05	2.0		
	CM08RB09			120.0min	1400 (at 6MHz)	0.09	1.0		

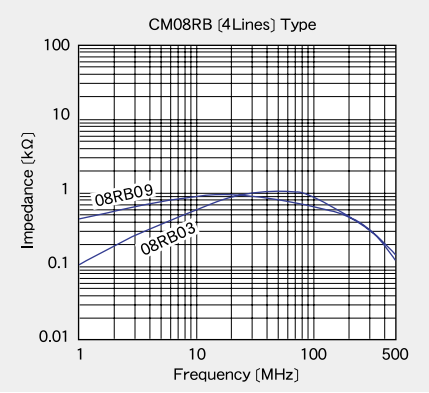
セレクションガイド Selection Guide ◀ P.10
アイテム一覧 Part Numbers P.381 ▶
特性図 Electrical Characteristics P.382 ▶
梱包 Packaging P.387 ▶
信頼性 Reliability Data P.388 ▶
使用上の注意 Precautions ——— ▶
etc







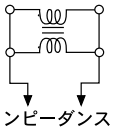




（測定条件）Measuring conditions

使用測定器 Equipment：HP 4291A Vosc: 0.5V (CM/BU type)
HP 4192A Vosc: 0.35V(TLF type)

測定回路 Measuring circuit



インピーダンス
アナライザーへ　To impedance analyzer

COMMON MODE CHOKE COIL (FOR AC, DC LINES)

Item		Specified Value				Test Methods and Remarks
		CM−RA/BU−RA	CM−RB	TLF9U,TLF12U	TLF25RA	
1.Operating Temperature Range		−25 to +115℃		−25 to +115℃	−25 to +105℃	*Including self-generated heat
2.Storage Temperature Range		−40 to +85℃		−40 to +85℃	−40 to +85℃	————
3.Rated Voltage		Within the specified tolerance		TLF9UA, TLF12UA, TLF12UB：250VAC TLF9UB：50VDC	250 VAC	
4.Insulation Resistance	Between wires	100 MΩ min		100 MΩ min	100 MΩ min	Applied voltage: Rated voltage(CM−RA/BU RA, CM−RB) 500 VDC (TLF9UA, 12UA, 12UB ,25RA) 250 VDC (TLF9UB) Duration: 60 sec.
	Between wire and core	————		100 MΩ min.	————	Applied voltage: 500 VDC (TLF9UA, 12UA, 12UB) 250 VDC (TLF9UB) Duration: 60 sec.
5.DC Resistance		Within the specified tolerance		Within the specified tolerance	Within the specified tolerance	Measuring equipment: DC ohmmeter
6.Inductance		Within the specified tolerance		Within the specified tolerance	Within the specified tolerance	CM−RA/BU RA, CM−RB Measuring equipment: 4262A(HP) or its equivalent Measuring frequency: 1 kHz TLF9UA, 12U, 25RA Measuring equipment: Impedance analyzer(HP) ot its equivalent. Measuring frequency: 1 kHz Measureing Voltage: 0.35Vosc
7.Rated Current		Within the specified tolerance		Within the specified tolerance	Within the specified tolerance	CM−RA/BU RA, CM−RB The maximum DC value as detailed in individual specifications. TLF9UA, 12UA, 12UB, 25RA The maximum AC value having temperature increase within 45℃ by the application of AC current. TLF 9UB The maximum DC value having temperature increase within 45℃ by the application of DC current.
8.Withstanding Voltage	Between wires	No abnormality		No abnormality	No abnormality	Applied voltage: Specified Voltage 250V DC (CM−RA/BU RA, CM−RB) 2000 VAC (TLF9UA, 12UA, 12UB ,25RA) 500 VDC (TLF9UB) Duration: 60 sec.
	Between wire and core	———		No abnormality	———	Applied voltage: 2000 VAC (TLF9UA, 12UA, 12UB) 500 VDC (TLF9UB) Duration: 60 sec.
9.Terminal Strength	Tensile Force	No abnormality		No abnormality	No abnormality	CM−RA/BU RA,CM−RB Fix the component in the direction to draw terminal and gradually apply tensile force as detailed in individual specifications. TLF9UA,9UB Apply the stated tensile force gradually in the direction to draw terminal. Nominal wire diameter φd (mm) / Tensile force (N) / Duration (s): φ0.6 / 5 / 30±5 TLF12UA, 12UB Nominal wire diameter φd (mm) / Tensile force (N) / Duration (s): φ0.8 / 20 / 30±5 TLF25RA Apply the tensile force of 10N in the direction to draw terminal for 5 seconds.
10.Resistance to Vibration		———	Appearance: No abnormality Inductance change: Within ±15%	Inductance change: Within ±5%	————	According to JIS C 0040. Vibration Type: A Vibration Direction: 2 hrs each in X,Y, and Z directions Total : 6 hrs Frequency range: 10 to 55 to 10Hz(1 min.) Amplitude : 1.5mm(shall not exceed acceleration of 196m/s) Mounting method: Soldering onto printed board Recovery: 4~24 hrs of recovery under the standard condition after the removal from test chamber.(CM-RA,CM-RB) 1 or more hrs of recovery under the standard condition after the removal from test chamber, measure within 2 hrs.(TRF9U, TLF12U)

COMMON MODE CHOKE COIL (FOR AC, DC LINES)

Item	Specified Value				Test Methods and Remarks
	CM−RA/BU−RA	CM−RB	TLF9U,TLF12U	TLF25RA	
11.Solderability	At least 75% of terminal electrode is covered by new solder.		Solder shall be uniformly adhered onto immersed surfaces.	Solder shall be uniformly adhered onto immersed surfaces.	CM−RA/BU−RA,CM−RB Solder temperature: 235±5℃ Duration: 2±0.5 sec. Immersion depth: According to detailed specification. TLF9U,TLF12U,TLF25RA Solder temperature: 230±5℃ Duration: 2±0.5 sec. Immersion depth: Up to 1.0 to 1.5 mm from PCB mounted level.
12.Resistance to Soldering Heat	Appearance: No abnormality Inductance change: Within ±15%		Inductance change: Within ±5%	Inductance change: Within ±5%	CM−RA/BU RA,CM−RB Solder temperature: 260±5℃ Duration: 5±0.5 sec. Immersion depth: Up to 2~2.5mm from terminal root. Recovery: 4~24 hrs of recovery under the standard condition after the test. TLF9U,TLF12U,TLF25RA Solder temperature: 260±5℃ Duration: 5±1 sec. Immersion depth: Up to 1.0 to 1.5 mm from PCB mounted level Recovery: At least 1 hr of recovey under the standard condition after the test, followed by the measurement within 2 hrs.
13.Thermal Shock	Appearance: No abnormality Inductance change: Within ±15%		Inductance change: Within ±15%	Inductance change: Within ±15%	According to JIS C 0025 Conditions for 1 cycle Step / Temperature(℃) / Duration (min.) 1 / −25±3 / 30±3 2 / Room temperature / Within 3 3 / +85±2 / 30±3 4 / Room temperature / Within 3 Number of cycles: 10 Recovery: 4~24 hrs of recovery under the standard condition after the removal from test chamber (CM-RA) 1~2 hrs of recovery under the standard condition after the removal from test chamber (CM-RB)
14.Damp Heat (steady state)	——		Inductance change: Within ±15%	Inductance change: Within ±15%	TLF9U,TLF12U,TLF25RA Temperature: 60±2℃ Humidity: 90 to 95% Duration: 500 hrs Recovery: At least 1 hr of recovey under the standard condition after the removal from test chamber, followed by the measurement within 2 hrs.
15.Loading under Damp Heat	Appearance: No abnormality Inductance change: Within ±15%		Withstanding voltage: No abnormality Insulation resistance: No abnormality	Withstanding voltage: No abnormality Insulation resistance: No abnormality	CM−RA/BU−RA,CM−RB Temperature: 40±2℃ Humidity: 90~95%RH Duration: 500^{+12}_{0}hrs Applied current: Rated current Recovery: 4~24 hrs of recovery under the standard condition after the removed from test chamber (CM-RA) 1~2 hrs of recovery under the standard condition after the removed from test chamber (CM-RB) TLF9U,TLF12U,TLF25RA Temperature: 60±2℃ Humidity: 90 to 95% Duration: 100 hrs Applied voltage: Apply the following specified voltage between windings. TLF9UA,12UA,12UB, 25RA / 250 VAC TLF9UB / 50 VDC Recovery: At least 1 hr of recovey under the standard condition after the removal from test chamber, followed by the measurement within 2 hrs.

COMMON MODE CHOKE COIL (FOR AC, DC LINES)

Item	Specified Value				Test Methods and Remarks
	CM−RA/BU RA	CM−RB	TLF9U,TLF12U	TLF25RA	
16.High Temperature Life Test	Appearance: No abnormality Inductance change: Within ±15%		Inductance change: Within ±15%	Inductance change: Within ±15%	CM−RA/BU−RA,CM−RB Temperature: 85±2℃ Duration: 500^{+12}_{-0} hrs Recovery: 4～24 hrs of recovery under the standard condition after the removal from test chamber (CM-RA) 1～2 hrs of recovery under the standard condition after the removal from test chamber (CM-RB) TLF9U,TLF12U,TLF25RA Temperature: 85±2℃ Duration: 500 hrs Recovery: At least 1 hr of recovey under the standard condition after the removal from test chamber, followed by the measurement within 2 hrs.
17.High Temperature Loading Test	——		Withstanding voltage: No abnormality Insulation resistance: No abnormality	Withstanding voltage: No abnormality Insulation resistance: No abnormality	TLF9U,TLF12U,TLF25RA Temperature: 85±2℃ Duration: 100 hrs Applied voltage: Apply the following spefied voltage between windings. TLF9UA,12UA,12UB, 25RA: 250 VAC TLF9UB: 50 VDC Recovery: At least 1 hr of recovey under the standard condition after the removal from test chamber, followed by the measurement within 2 hrs.
18.Low Temperature Life Test	Appearance: No Abnormality Inductance change: Within ±15%		Inductance change: Within ±15%	Inductance change: Within ±15%	CM−RA/BU−RA,CM−RB Temperature: −40±3℃ Duration: 500^{+12}_{-0} hrs Recovery: 4～24 hrs of recovery under the standard condition after the removal from test chamber (CM-RA) 1～2 hrs of recovery under the standard condition after the removal from test chamber (CM-RB) TLF9U,TLF12U,TLF25RA Temperature: -25±2℃ Duration: 500 hrs Recovery: At least 1 hr of recovey under the standard condition after the removal from test chamber, followed by the measurement within 2 hrs.
19.Temperature Rise	——		45℃ max.	45℃ max.	TLF9U,TLF12U,TLF25RA Resistance substitution method Applied current: Rated current Duration: 1 hr

Note on standard condition: "standard condition" referred to herein is defined as follows: 5 to 35℃ of temperature, 45 to 85% relative humidity and 86 to 106kPa of air pressure.

When there are questions concerning measurement results: In order to provide correlation data, the test shall be conducted under condition of 20±2℃ of temperature, 65 to 70% relative humidity and 86 to 106kPa of air pressure.

Unless otherwise specified, all the tests are conducted under the "standard condition."

標準数量　Standard quantity

CM / BU Type

Type	標準数量(pcs.) Standard quantity	
	Box	Bulk
CM05RA06	—	500
CM05RB□□	1000	—
CM08RA□□	—	250
CM08RB□□	500	—
CM12RA02	—	100
BU08RA□□	—	200

TLF Type

Type	標準数量(pcs.) Standard quantity
	Box
TLF9UA□	500
TLF9UB□	500
TLF12U□	500
TLF25RA	200

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http://www.t-yuden.com

MODIFICATION NOTICE

DATE: November 27, 2000

RE: Part numbering system modification

REF NO.: UTY-MN00-003 (FINAL Version)

Taiyo Yuden (U.S.A.), Inc. hereby gives notice that effective December 18, 2000 Taiyo Yuden part numbers will be modified to include class codes and consistent spacing. This change is being made as part of a global effort to standardize part numbers at Taiyo Yuden companies around the world and will enable Taiyo Yuden to increase efficiency and offer better service to its customers. Technical specifications of these products will not change. A list with individual part number changes is at:

http://www.t-yuden.com/newpartnumbers/

Current part number:	New part number:	Part description:	Technical specification:
AG□□□□□□□□□□□□□□	KK AG□□□□□□□□□□□□□□□	Spark gaps	No change
BCN□□□□□□□□□□□□□	RE BCN□□□□□□□□□□□□□□	Tubular ceramic capacitors	No change
BK□□□□□□□□□□□□□□	LF BK□□□□□□□□□□□□□□	Chip ferrite beads	No change
BP□□□□□□□□□□□□□□	FF BP□□□□□□□□□□□□□□□	Ferrite cores	No change
BU□□□□□□□□□□□□□□□	LR BU□□□□□□□□□□□□□□□	Balun transformers	No change
CB□□□□□□□□□□□□□□□	DB CB□□□□□□□□□□□□□□□	Piezo products	No change
CD□□□□□□□□□□□□□□□	DB CD□□□□□□□□□□□□□□□	Piezo products	No change
CM□□□□□□□□□□□□□□□	LR CM□□□□□□□□□□□□□□□	Balun transformers	No change
CP□□□□□□□□□□□□□□□	FF CP□□□□□□□□□□□□□□□	Ferrite cores	No change
CS□□□□□□□□□□□□□□□	DB CS□□□□□□□□□□□□□□□	Piezo products	No change
CT□□□□□□□□□□□□□□□	FF CT□□□□□□□□□□□□□□□	Ferrite cores	No change
ECN□□□□□□□□□□□□□□	RE ECN□□□□□□□□□□□□□□	Tubular ceramic capacitors	No change
EMK□□□□□□□□□□□□□□[1]	CE EMK□□□□□□□□□□□□□□[1]	Hi-value chip capacitors	No change
EMK□□□□□□□□□□□□□□[1]	RM EMK□□□□□□□□□□□□□□[1]	Chip capacitors	No change
EP050□□□□□□□□□□□□Z	CH EP050□□□□□□□□□□□Z	Axial leaded capacitors	No change
EP□□□□□□□□□□□□□□□	RH EP□□□□□□□□□□□□□□□	Axial leaded capacitors	No change
EVK105□□□□□□□□□□□	RV EVK105□□□□□□□□□□□□	High freq. chip capacitors	No change
EX□□□□□□□□□□□□□□□	RL EX□□□□□□□□□□□□□□□	Melf capacitors	No change
FBA□□□□□□□□□□□□□	FB FBA□□□□□□□□□□□□□□	Ferrite Chip Beads	No Change
FBM□□□□□□□□□□□□□	Spacing change only	Ferrite Chip Beads	No change
FBR□□□□□□□□□□□□□	FB FBR□□□□□□□□□□□□□□	Ferrite Chip Beads	No change
FK□□□□□□□□□□□□□□□	PF FK□□□□□□□□□□□□□□□	Multilayer EMI suppression filter	No change
FL□□□□□□□□□□□□□□□	LR FL□□□□□□□□□□□□□□□	Balun transformers	No change
FP15□□□□□□□□□□□□□	LH FP15□□□□□□□□□□□□□□	Radial leaded inductors	No change
GMK□□□□□□□□□□□□□□[1]	CE GMK□□□□□□□□□□□□□□[1]	Hi-value chip capacitors	No change
HK□□□□□□□□□□□□□□□	LG HK□□□□□□□□□□□□□□□	Hi-frequency chip inductors	No change
HR□□□□□□□□□□□□□□□	MA HR□□□□□□□□□□□□□□□	Ferrite magnets	No change
JC□□□□□□□□□□□□□□□	QR JC□□□□□□□□□□□□□□□	Fixed resistors	No change
JMK□□□□□□□□□□□□□□[1]	CE JMK□□□□□□□□□□□□□□[1]	Hi-value chip capacitors	No change

Current part number:	New part number:	Part description:	Technical specification:
JMK□□□□□□□□□□□□□[1]	RM JMK□□□□□□□□□□□□□[1]	Chip capacitors	No change
LA□□□□□□□□□□□□□□□	Spacing change only	Axial leaded inductors	No change
LB□□□□□□□□□□□□□□□	LQ LB□□□□□□□□□□□□□□	Wound chip inductors	No change
LC□□□□□□□□□□□□□□□	LT LC□□□□□□□□□□□□□□□	EMI suppression filters	No change
LEM□□□□□□□□□□□□□□	Spacing change only	Wound inductor	No change
LER□□□□□□□□□□□□□□	Spacing change only	Cylindrical wound inductor	No change
LH11□□□□□□□□□□□□□	LS LH11□□□□□□□□□□□□□	Linearity coils	No change
LH13□□□□□□□□□□□□□	LS LH13□□□□□□□□□□□□□	Linearity coils	No change
LH15□□□□□□□□□□□□□	LS LH15□□□□□□□□□□□□□	Linearity coils	No change
LH16□□□□□□□□□□□□□	LS LH16□□□□□□□□□□□□□	Linearity coils	No change
LH18□□□□□□□□□□□□□	LS LH18□□□□□□□□□□□□□	Linearity coils	No change
LH20□□□□□□□□□□□□□	LS LH20□□□□□□□□□□□□□	Linearity coils	No change
LHL□□□□□□□□□□□□□	Spacing change only	Radial leaded inductors	No change
LH□□□□□□□□□□□□□□□	Spacing change only	Radial leaded inductors	No change
LK□□□□□□□□□□□□□□□	LF LK□□□□□□□□□□□□□□□	Chip inductors	No change
LMK□□□□□□□□□□□□□□[1]	CE LMK□□□□□□□□□□□□□□[1]	Hi-value chip capacitors	No change
LMK□□□□□□□□□□□□□□[1]	RM LMK□□□□□□□□□□□□□□[1]	Chip capacitors	No change
MFC□□□□□□□□□□□□□□	NF MFC□□□□□□□□□□□□□□	Capacitive varistors	No change
MT□□□□□□□□□□□□□□□	LT MT□□□□□□□□□□□□□□□	EMI suppression filters	No change
N06D□□□□□□□□□□□□□	LM N 06□□□□□□□□□□□□□	SMD coil inductors	No change
N08D□□□□□□□□□□□□□	LM N 08□□□□□□□□□□□□□	SMD coil inductors	No change
NP05□□□□□□□□□□□□□	LM NP05□□□□□□□□□□□□□	SMD coil inductors	No change
NP06□□□□□□□□□□□□□	LM NP06□□□□□□□□□□□□□	SMD coil inductors	No change
OR□□□□□□□□□□□□□□□	MA OR□□□□□□□□□□□□□□□	Ferrite magnets	No change
RB□□□□□□□□□□□□□□□	Spacing change only	Ceramic disc capacitors	No change
RC□□□□□□□□□□□□□□□	Spacing change only	Ceramic disc capacitors	No change
RD□□□□□□□□□□□□□□□	QR RD□□□□□□□□□□□□□□	Fixed resistors	No change
RN4B□□□□□□□□□□□□□	QR RN4B□□□□□□□□□□□□	Fixed resistors	No change
RN6B□□□□□□□□□□□□□	QS RN6B□□□□□□□□□□□□	Fixed resistors	No change
RP□□□□□□□□□□□□□□□	Spacing change only	Ceramic disc capacitors	No change
RQ□□□□□□□□□□□□□□□	Spacing change only	Ceramic disc capacitors	No change
SR□□□□□□□□□□□□□□□	NV SR□□□□□□□□□□□□□□□	Ring type varistors	No change
SS□□□□□□□□□□□□□□□	NV SS□□□□□□□□□□□□□□□	Ring type varistors	No change
ST□□□□□□□□□□□□□□□	LT ST□□□□□□□□□□□□□□□	EMI suppression filters	No change
TBP□□□□□□□□□□□□□□	NE TBP□□□□□□□□□□□□□□□	Thermistors	No change
TCN□□□□□□□□□□□□□□□□□□	RE TCN□□□□□□□□□□□□□□□□	Tubular ceramic capacitors	No change
TLF□□□□□□□□□□□□□□	LM TLF □□□□□□□□□□□□□	Choke coils	No change
TMK□□□□□□□□□□□□□□[1]	CE TMK□□□□□□□□□□□□□□[1]	Hi-value chip capacitors	No change
TMK□□□□□□□□□□□□□□[1]	RM TMK□□□□□□□□□□□□□□[1]	Chip capacitors	No change
TMR□□□□□□□□□□□□□□	RY TMR□□□□□□□□□□□□□□	Radial leaded ceramic capacitors	No change
TP050□□□□□□□□□□□□Z	CH TP050□□□□□□□□□□□□Z	Axial leaded capacitors	No change
TP□□□□□□□□□□□□□□□	RH TP□□□□□□□□□□□□□□□	Axial leaded capacitors	No change
TX□□□□□□□□□□□□□□□□	RL TX□□□□□□□□□□□□□□□□	Melf capacitors	No change
UA□□□□□□□□□□□□□□□	Spacing change only	Ceramic disc capacitors	No change
UCN□□□□□□□□□□□□□□□	RE UCN□□□□□□□□□□□□□□□	Tubular ceramic capacitors	No change
UD□□□□□□□□□□□□□□□	UE UD□□□□□□□□□□□□□□□	Feed through leaded capacitors	No change
UG□□□□□□□□□□□□□□□	UE UG□□□□□□□□□□□□□□□	Feed through leaded capacitors	No change
UMK□□□□□□□□□□□□□□[1]	CE UMK□□□□□□□□□□□□□□[1]	Hi-value chip capacitors	No change
UMK□□□□□□□□□□□□□□[1]	RM UMK□□□□□□□□□□□□□□[1]	Chip capacitors	No change
UMR□□□□□□□□□□□□□□□	RY UMR□□□□□□□□□□□□□□□	Radial leaded ceramic capacitors	No change
UP050□□□□□□□□□□□□Z	CH UP050□□□□□□□□□□□□Z	Axial leaded capacitors	No change

Current part number:	New part number:	Part description:	Technical specification:
UPC□□□□□□□□□□□□□□	ZS UPC□□□□□□□□□□□□□□	Feed through leadless capacitors	No change
UP□□□□□□□□□□□□□□□	RH UP□□□□□□□□□□□□□□□	Axial leaded capacitors	No change
UX□□□□□□□□□□□□□□□	RL UX□□□□□□□□□□□□□□□	Melf capacitors	No change
UZE□□□□□□□□□□□□□□	Spacing change only	Ceramic disc capacitors	No change
VT□□□□□□□□□□□□□□□	LT VT□□□□□□□□□□□□□□□	EMI suppression filters	No change

NOTE: 1. CE class parts are listed on pages 38-43 and RMs are listed on pages 46-58 in the Taiyo Yuden General Catalog 2000.

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