# TAIYO YUDEN Component Library for Analog Devices LTspice (Temperature/DC Bias Model)

- Installation manual -

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# How to install Component Library to LTspice24

The following instruction is for LTspice24.

Step 1. Unzip "LT\_TY\*\*.zip".

**Step 2.** Copy each "TY\_TempDC" folder located in unzipped sub and sym folder into the following folder respectively.

sub folder

C:¥Users¥<Windows login user name>¥AppData¥Local¥LTspice¥lib¥sub

sym folder

C:¥Users¥<Windows login user name>¥AppData¥Local¥LTspice¥lib¥sym



# How to install Component Library to LTspice24

**Step 3.** Launch LTspice and click control panel button on the toolbar.

Step 4. Select "Search Paths" tab on the control panel.

**Step 5.** Describe the full install path at Step 2 into "Library Search Path" pane as shown below.

C:¥Users¥<Windows login user name>¥AppData¥Local¥LTspice¥lib¥sub¥TY\_TempDC

**Step 6.** Click OK to finish the installation.

Relaunch LTspice to use the library.



# How to install Component Library to LTspice XVII

The following instruction is for LTspice XVII.

Step 1. Unzip "LT\_TY\*\*.zip".

**Step 2.** Copy each "TY\_TempDC" folder located in unzipped sub and sym folder into the following folder respectively.

sub folder

C:¥Users¥<Windows login user name>¥Documents¥LTspiceXVII¥lib¥sub

sym folder

C:¥Users¥<Windows login user name>¥Documents¥LTspiceXVII¥lib¥sym



# How to install Component Library to LTspice XVII

**Step 3.** Launch LTspice and click control panel button on the toolbar.

**Step 4.** Select "Sym. & Lib. Search Paths" tab on the control panel.

**Step 5.** Describe the full install path at Step 2 into "Library Search Path" pane as shown below.

C:¥Users¥<Windows login user name>¥Documents¥LTspiceXVII¥lib¥sub¥TY\_TempDC

**Step 6.** Click OK to finish the installation.

Relaunch LTspice to use the library.



Step 5

ヘルプ

**Step 1.** Open the schematic window.

**Step 2.** Click the component icon from the toolbar or the menu bar and double-click [TY\_TempDC] folder.

🈕 LTspice - [Draft1.asc]					- 🗆 X
🔨 File Edit Hierarchy View Simulate T	ools Window Help				_ & ×
🗘 🖏 🔽 💾 🚔 🏟 🕨 🗉	I 👖 🚍 🖶 Q, Q, Q	२ 🔃 🚰 💪 🔶 🔇	\$ ÷ 3 \$ 🖪 🛛	🖞 t t 🖸 🗸	' √ 🕄 🖉 🕅 🏟 🇭
UTspice - [Draft1.asc]	Tools Window Help				
Undo	F9	😕 Component	•		×
Redo	Shift+F9		Top Directory:		
<u>I</u> ext	т		C:¥Users¥	¥AppData¥Local¥LTspice¥lib	∕sym ∨
<u><u>S</u>PICE Directive</u>	S		Search: []	¥AppData¥Local¥LTspice	Go to analog.com ¥lib¥sym¥
Configure SPICE Analysis	А		[ADC] [Comparators]	bv ISO167 cap ISO763	50-2 pmos4 7-2 pnp
Resistor	R		[Contrib] [CurrentMonitors]	csw LED current load	pnp2 pnp4
🚔 Capacitor	С		[DAC] [Digital]	diode load2 e lpnp	polcap res
3 Inductor	L		[FileProducts] [Misc] [OpAmps]	f mesfet FerriteBead nif	schottky SOAtherm-HeatSink
Diode	D		[Optos] [PowerProducts]	FerriteBead2 nmos fra nmos4	SOAtherm-NMOS SOAtherm-PCB
Component	F2	<b>→</b>	[References] [SpecialFunctions]	fraprobe npn gnpn2	sw tline
Rotate	Ctrl+R		[TY_TempDC]	g2 npn3 h npn4 ind nif	TVSdiode varactor
Mirror	Ctrl±E	Get Product Info	bi2	ind2 pmos	zener
	Curr 2	Open Example Circ	uit		Cancel Place
Draw <u>w</u> ire	F3				
Label <u>N</u> et	F4				

**Step 3.** Continue to follow the folders to find and select the component to use.

\*1 : Please also refer to pages from 11 to 15 about component category folders located directly under Capacitor and Inductor folder.

🎔 Component		×			
Top Directory: C:¥Users¥ Search: [] C:¥Users¥ [] [Capacitor] [Inductor] Component	¥AppData¥Local¥LTspice¥lib¥s ¥AppData¥Local¥LTspice¥	sym  Go to analog.com lib¥sym¥TY_TempDC¥	×		
	C:¥Users¥ ¥AppD	Data¥Local¥LTspice¥lib¥sym	~		
	Search: []	🎔 Component			×
Get Pr Open Example Circuit	C:¥Users¥ ¥/	Get Product Info	Top Directory: C:¥Users¥ Search: [HVC C:¥Users¥ C:¥Users¥ C:¥Users¥ C:¥Users¥ C:¥Users¥ C:¥Users¥ C:¥Users¥ MSASA021SB5 MSASA042SB5 MSASA042SB5 MSASA042SC6 MSASA042SC6 MSASA042SC6 MSASA063B65 MSASA063B65 MSASA063B55 MSASA063B55 MSASA063B55 MSASA063B55 MSASA063B55 MSASA063B55 MSASA05B56 MSASA105C65 MSASA105C65 MSASA105C65 MSASA105C65 MSASA105C65 MSASA105C65 MSASA105C65 MSASA105C65 MSASA105C65 MSASA105C7 MSASA105C65 MSASA105C65 C	¥AppData¥Local¥LTspice¥lb¥sym           C_S]         Go to analog.com           ¥AppData¥Local¥LTspice¥lb¥sym¥TY_TempDC¥Capa         [MSASA168BB5476, RCB46 MSASA31LBB5157_TN           5223_WNA01MSASA168BC6426_TNA01 MSASA31LBB5157_TN         [S104_WNA01MSASA168BC6476, RCA01 MSASA32MAB5157_PN           5224_WNA01MSASA118BS105_FNA01 MSASA32MAB5157_PN         [S104_WNA01MSASA1L3YB5225_FNA01 MSASA32MA65157_PN           5473_WNA01MSASA1L1XB5105_RNA01 MSASA32MA65137_PP         [G104_WNA01MSASA11LXB5105_RNA01 MSASA32MAC66157_PN           6103_WNA01MSASA219LC6226_TNA01 MSASA32MAC6637_PC         [G23_WNA01MSASA219LC6226_TNA01 MSASA32MAC6337_PC           6223_WNA01MSASA21GAC6226_TNA01 MSASA32MAC6337_PC         [G23_WNA01MSASA21GBC6107_TCA01 MSASE021SB5102_W           5225_FNB46 MSASA21GBC6107_TCA01 MSASE021SB5102_W         [S475_FNA01 MSASA31LAB5107_TNA01 MSASE021SB521_W           6474_FNA01 MSASA31LAB5107_TNA01 MSASE042SB5101_W         [6474_FNA01 MSASA31LAC6107_TNA01 MSASE042SB5102_W           6475_FNA01 MSASA31LAC6107_TNA01 MSASE042SB5102_W         [S475_FNA01 MSASA31LAC6107_TNA01 MSASE042SB5102_W           6474_FNA01 MSASA31LAC6107_TNA01 MSASE042SB5102_W         [S475_FNA01 MSASA31LAC6107_TNA01 MSASE042SB5102_W           6474_FNA01 MSASA31LAC6107_TNA01 MSASE042SB5103_W         [S475_FNA01 MSASA31LAC6476_TNA01 MSASE042SB5103_W           S226_FNA01 MSASA31LAC7476_TNA01 MSASE042SB5151_W         [S46_FNA01 MSASA31LAC7476_TNA01 MSASE042SB5151_W	ICITORYHVC_ IAO1 MSAS IB36 MSAS IDT1 MSAS IDT1 MSAS IDT1 MSAS IDT1 MSAS IDT1 MSAS IDT1 MSAS IDT1 MSAS IDT1 MSAS IDT1 MSAS INO1MSAS INAO1MSAS INAO1MSAS INAO1MSAS INAO1MSAS INAO1MSAS
		Open Example Circuit		Cancel	Place

**Step 4.** Place the component on the schematic.

**Step 5.** Right-click the symbol on the schematic and edit the ambient temperature of the component.

			🥙 MSASA10	05CC6106	×
MSASA105CC6106_FNC12		Instance Name	e: U1		
			Parameter	Value	
		$\rightarrow$	Temperature	85	
Tempera	ature=25				
			Re	store Defaults	
			ОК	Cancel	



### **Step 6.** Perform the simulation.



### **About component category**

The name of component category folders located directly under Capacitor folder is composed of series abbreviation and application symbol as follows.



The name of component category folders located directly under Inductor folder, itself, represents series abbreviation. The second letter of series abbreviation should be treated as application symbol.



### **About component category**

Application symbols describe the categories where the components are intended to use according to the following chart.

Please confirm our product catalog or product specification for details.

Application symbol	Application	Equipment
A	Automotive	Automotive Electronic Equipment (POWERTRAIN, SAFETY)
С		Automotive Electronic Equipment (BODY & CHASSIS, INFOTAINMENT)
В	Industrial	Telecommunications Infrastructure and Industrial Equipment
М	Medical	Medical Devices classified as GHTF Class C (Japan Class III)
L		Medical Devices classified as GHTF Classes A or B (Japan Classes I or II)
S	Consumer	General Electronic Equipment
E		Only for Mobile Devices

### **About component category**

Series abbreviations describe the following product series. Please confirm our product catalog or product specification for details.

### **Ceramic Capacitors**

Series abbreviation	Product series
HVC	Multilayer Ceramic Capacitors (High dielectric type)
CF_LD	Low distortion design/Audible/Good bias Multilayer Ceramic Capacitors (CF_LD)
MHV	Medium-High Voltage Multilayer Ceramic Capacitors
STC	Soft Termination Multilayer Ceramic Capacitors
LWDC	LW Reversal Decoupling Low ESL Capacitors (LWDC™)
HRC	High Reliability Multilayer Ceramic Capacitors

### Inductors

Series abbreviation	Product series
L_EN	Wire-wound Metal Power Inductors MCOIL <sup>™</sup> L_EN series
L_EP	Wire-wound Metal Power Inductors MCOIL <sup>™</sup> L_EP series
L_EU	Wire-wound Metal Power Inductors MCOIL <sup>™</sup> L_EU series
L_CN	Wire-wound Metal Power Inductors MCOIL <sup>™</sup> L_CN series
L_DN	Wire-wound Metal Power Inductors MCOIL <sup>™</sup> L_DN series
L_AN	Wire-wound Metal Power Inductors MCOIL <sup>™</sup> L_AN series
L_AP	Wire-wound Metal Power Inductors MCOIL <sup>™</sup> L_AP series
L_BH	Wire-wound Metal Power Inductors MCOIL <sup>™</sup> L_BH series
L_XN	Wire-wound Ferrite Power Inductors L_XN series
L_XP	Wire-wound Ferrite Power Inductors L_XP series
L_XH	Wire-wound Ferrite Power Inductors L_XH series
L_RN	Wire-wound Ferrite Power Inductors L_RN series
L_YP	Wire-wound Ferrite Power Inductors L_YP series

\* "\_" in the series abbreviation should be replaced by the character representing the application of the product either "A", "C", "B", "M", "L" or "S".

### How to uninstall Component Library from LTspice24

Delete each "TY\_TempDC" folder respectively from the folder where you installed them.

sub folder

C:¥Users¥<Windows login user name>¥AppData¥Local¥LTspice¥lib¥sub

### sym folder

C:¥Users¥<Windows login user name>¥AppData¥Local¥LTspice¥lib¥sym



### How to uninstall Component Library from LTspice XVII

Delete each "TY\_TempDC" folder respectively from the folder where you installed them.

sub folder

C:¥Users¥<Windows login user name>¥Documents¥LTspiceXVII¥lib¥sub

### sym folder

C:¥Users¥<Windows login user name>¥Documents¥LTspiceXVII¥lib¥sym

