

# ***TIPO***tutoriales

***ligaduras en***  
***FONTLAB***



Autor:

***César Araya Huerta***

# LIGADURAS ?

Es cuando dos o más signos se unen ocupando el mismo espacio o enlazándose estructuralmente. Pueden existir con fines estéticos o funcionales.

The image shows the letters 'L' and 'A' from the Mazurquica font. The 'L' is a simple, vertical, blocky letter. The 'A' is a tall, narrow letter with a pointed top. They are positioned close together, sharing a common vertical baseline and a common horizontal base, illustrating the concept of occupying the same space.

*MISMO ESPACIO*

*Mazurquica 300 pt*

The image shows the letters 'f' and 'i' from the Arno Pro font. The 'f' is a tall, thin letter with a curved top. The 'i' is a shorter, thin letter with a dot. They are positioned close together, with the 'f' overlapping the 'i', illustrating a functional ligature.

*FUNCIONAL*

*Arno Pro 300 pt*

The image shows the letters 's' and 't' from the Arno Pro font. The 's' is a tall, thin letter with a curved top. The 't' is a shorter, thin letter with a crossbar. They are positioned close together, with the 's' overlapping the 't', illustrating an aesthetic ligature.

*ESTÉTICO*



puntero / click izquierdo

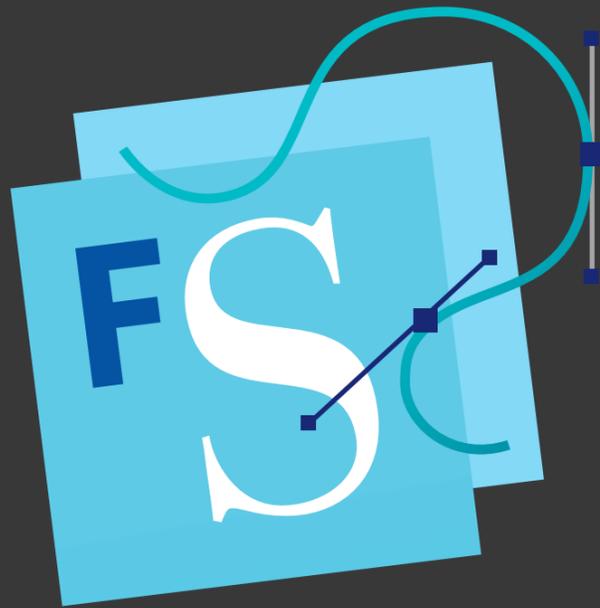


click izquierdo



click derecho

**INICIA FONTLAB**



**+**



**x 2**

FontLab Studio File Edit View Contour Glyph Tools Window

Font - [z] Arista Light [...]/arista/[z] Arista light.ttf

0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	002A	002B	002C	002D	002E	002F
		"	#	\$	%	&	'	(	)	*	+	,	-	.	/
0030		0032	0033	0034	0035	0036	0037	0038	0039	003A	003B	003C	003D	003E	003F
0		2	3	4	5	6	7	8	9	:	;	<	=	>	?
0040		0042	0043	0044	0045	0046	0047	0048	0049	004A	004B	004C	004D	004E	004F
@		B	C	D	E	F	G	H	I	J	K	L	M	N	O
0050		0052	0053	0054	0055	0056	0057	0058	0059	005A	005B	005C	005D	005E	005F
P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
0060	0061	0062	0063	0064	0065	0066	0067	0068	0069	006A	006B	006C	006D	006E	006F
`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
0070	0071	0072	0073	0074	0075	0076	0077	0078	0079	007A	007B	007C	007D	007E	---
p	q	r	s	t	u	v	w	x	y	z	{		}	~	
00C4	00C5	00C7	00C9	00D1	00D6	00DC	00E1	00E0	00E2	00E4	00E3	00E5			
Ä	Å	Ç	É	Ñ	Ö	Ü	Á	À	Â	Ä	Ã	ä			
00EA	00EB	00ED	00EC	00EE	00EF	00F1	00F3	00F2	00F4	00F6	00F5	00FA			
ê	ë	í	ì	î	ï	ñ	ó	ò	ô	ö	õ	ú			
2020	00B0	00A2	00A3	00A7	2022	00B6	00DF	00AE	00A9	2122	00B4	00A8	2260	00C6	00D8

Size | Unicode | Pages mode | MacOS Roman | Glyph: A [0041] Selected: 1 / 212

Glyph Properties

Font: zAristaLight

NAME: A

UNICODE: 0041

⬆ 39    ⬇ 2    ⬇ 0  
 ⬆ 16    ⬆ 17    ⬆ 417  
 ⬆ 16    ⬆ 17    ⬆ 384  
 ⬆ (16, 0)    ⬆ (400, 639)

Classes... Apply

FontLab Studio File Edit View Contour **Glyph** Tools Window

Create Glyphs  
Create Glyphs if Empty  
Add Component...  
Edit Composite  
Decompose  
Rename Glyph...  
**Generate Glyphs... ⌘G**  
Glyph Names  
Sort Glyphs

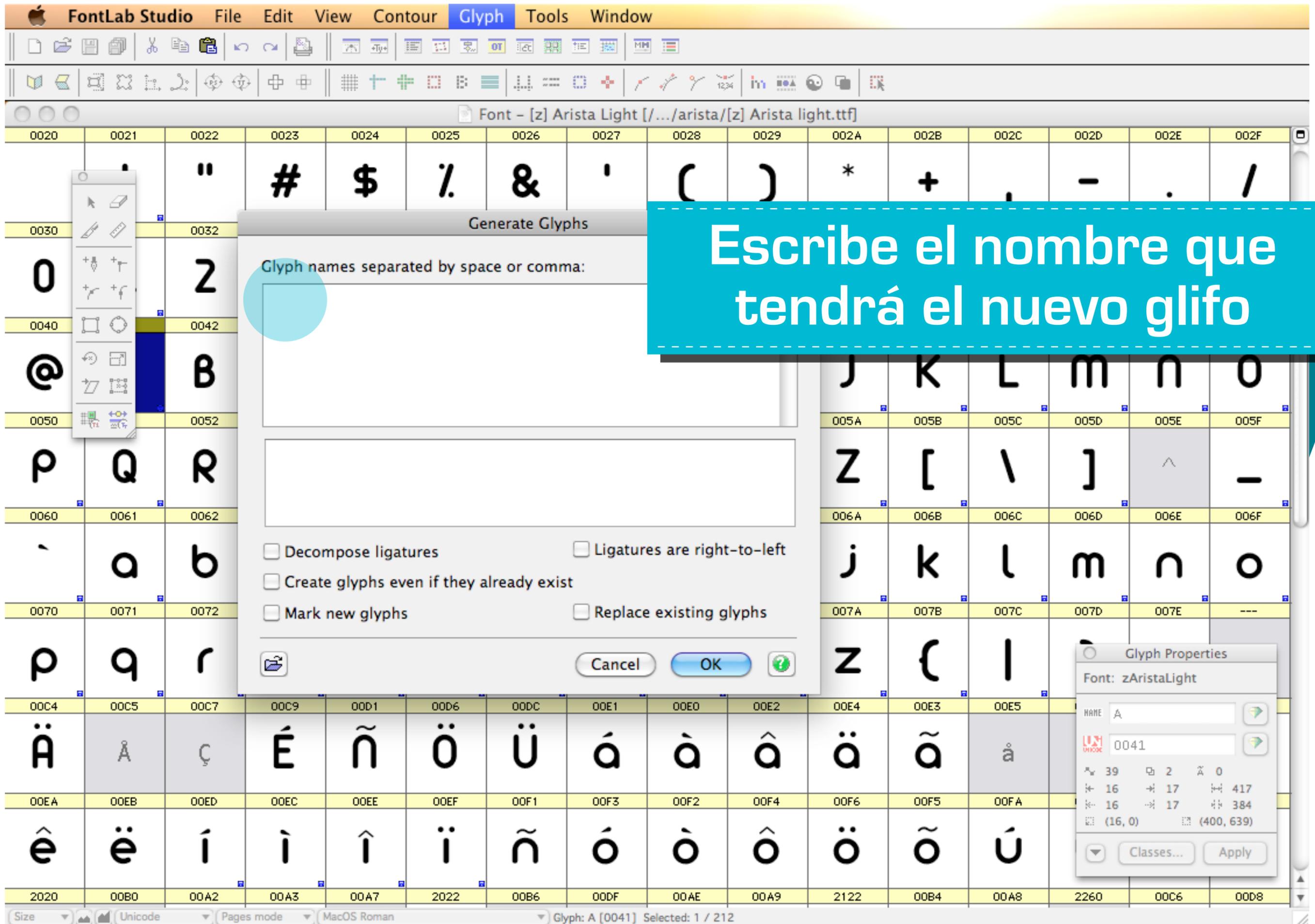
ista/[z] Arista light.ttf

0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	002A	002B	002C	002D	002E	002F
	"	#	\$	%	&	'	(	)	*	+	,	-	.	/	
0030		0032	0033	0034	0035	0036	0037	0038	0039	003A	003B	003C	003D	003E	003F
0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
0040		0042	0043	0044	0045	0046	0047	0048	0049	004A	004B	004C	004D	004E	004F
@		B	C	D	E	F	G	H	I	J	K	L	M	N	O
0050		0052	0053	0054	0055	0056	0057	0058	0059	005A	005B	005C	005D	005E	005F
P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
0060	0061	0062	0063	0064	0065	0066	0067	0068	0069						
`	a	b	c	d	e	f	g	h	i						
0070	0071	0072	0073	0074	0075	0076	0077	0078	0079	007A	007B	007C	007D	007E	---
p	q	r	s	t	u	v	w	x	y	z	{		}	~	
00C4	00C5	00C7	00C9	00D1	00D6	00DC	00E1	00E0	00E2	00E4	00E3	00E5			
Ä	Å	Ç	É	Ñ	Ö	Ü	á	à	â	ä	ã	ä			
00EA	00EB	00ED	00EC	00EE	00EF	00F1	00F3	00F2	00F4	00F6	00F5	00FA			
ê	ë	í	ì	î	ï	ñ	ó	ò	ô	ö	õ	ú			
2020	00B0	00A2	00A3	00A7	2022	00B6	00DF	00AE	00A9	2122	00B4	00A8	2260	00C6	00D8

Size | Unicode | Pages mode | MacOS Roman | Glyph: A [0041] Selected: 1 / 212

**Crea un nuevo glifo**

Glyph Properties  
Font: zAristaLight  
NAME: A  
UNICODE: 0041  
X: 39 Y: 16 W: 2 H: 16  
X2: 2 Y2: 16 W2: 17 H2: 17  
X3: 39 Y3: 0 W3: 2 H3: 0  
X4: 417 Y4: 16 W4: 16 H4: 16  
X5: 384 Y5: 16 W5: 16 H5: 16  
X6: (16, 0) Y6: (400, 639)  
Classes... Apply



Escribe el nombre que tendrá el nuevo glifo

El guión bajo “\_” vincula los  
glifos para la ligadura

The image shows the FontLab Studio interface with a 'Generate Glyphs' dialog box open. The dialog box has a text field containing 's\_t' and a preview area showing the ligature 'st'. Below the preview are several checkboxes: 'Decompose ligatures', 'Ligatures are right-to-left', 'Create glyphs even if they already exist', 'Mark new glyphs', 'Replace existing glyphs', and 'Replace existing glyphs'. The 'OK' button is highlighted with a mouse cursor. In the background, the main glyph grid is visible, showing various characters and their Unicode values. A 'Glyph Properties' window is also open in the bottom right corner, showing the font name 'zAristaLight' and the glyph name 'A'.

FontLab Studio File Edit View Contour Glyph Tools Window

Font - [z] Arista L

Generate Glyphs

Glyph names separated by space or comma:

s\_t

st

Decompose ligatures  Ligatures are right-to-left

Create glyphs even if they already exist

Mark new glyphs  Replace existing glyphs

Cancel OK ?

Glyph Properties

Font: zAristaLight

NAME A

UNICODE 0041

39 2 0

16 17 417

16 17 384

(16, 0) (400, 639)

Classes... Apply

Size Unicode Pages mode MacOS Roman Glyph: A [0041] Selected: 1 / 212

FontLab Studio File Edit View Contour Glyph Tools Window

Font - [z] Arista Light [...]/arista/[z] Arista light.ttf

221E	00B1	2264	2265	00A5	00B5	2202	2211	220F	03C0	222B	00AA	00BA	03A9	00E6	00F8	
∞		≤	≥	¥	μ	∂	Σ	∏	∏	∫	a	o	Ω	œ	ø	
00BF		00AC	221A	0192	2248	2206	00AB	00BB	2026	00A0	00C0	00C3	00D5	0152	0153	
¿		¬	√	f	≈	Δ	<<	>>	...	À	Ã	Õ	Œ	œ		
2013		201C	201D	2018	2019	00F7	25CA	00FF	0178	2044	20AC	2039	203A	FB01	FB02	
-		“	”	‘	’	÷	◇	ÿ	ÿ	/	€	<	>	fi	fl	
2021		201A	201E	2030	00C2	00CA	00C1	00CB	00C8	00CD	00CE	00CF	00CC	00D3	00D4	
†		•	,	”	‰	Â	Ê	Á	Ë	È	Í	Î	Ï	Ì	Ó	Ô
F8FF	00D2	00DA	00DB	00D9	0131	02C6	02DC	00AF	02D8	02D9	02DA	00B8	02DD	02DB	02C7	
	Ò	Ú	Û	Ù	ı	^	ˆ	˜	˘	˙	˚	˛	˜	˝	˞	
---	---	00A4	00A6	00AD	00D0	00D7	00D8	00D9	00DA	00DB	00DC	00DD	00DE	00DF	00E0	
	(	km [zero]		-	Đ	x	y	z	z	z	z	z	z	z	z	
011B	0139	0143	0144	0147	0148	0154	0155	0158	0159	015A	015B	0160				
ě	Ł	Ń	ń	ň	ň	Ř	ř	Ř	ř	Š	š	Š				
0179	017A	017B	017C	017D	017E	FB06										
Ž	ž	Ž	ž	Ž	ž	st										

Font: zAristaLight

NAME s\_t

FB06

14 3 887

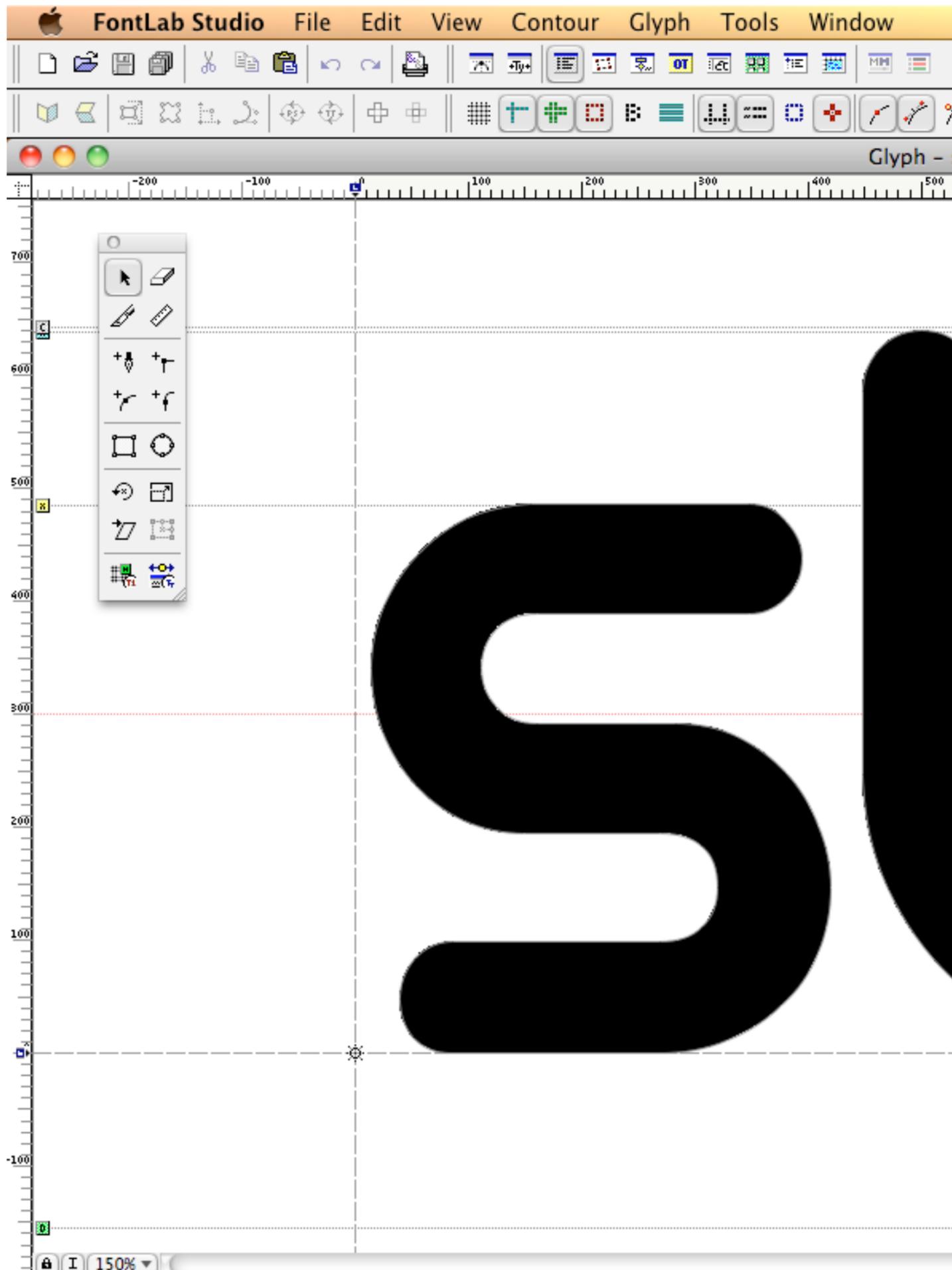
19 333 535

(14, 0) (884, 640)

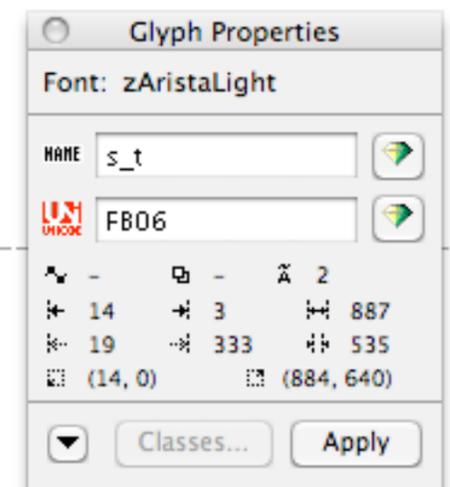
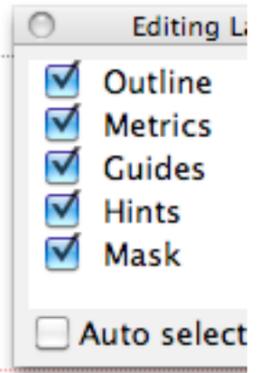
Classes... Apply

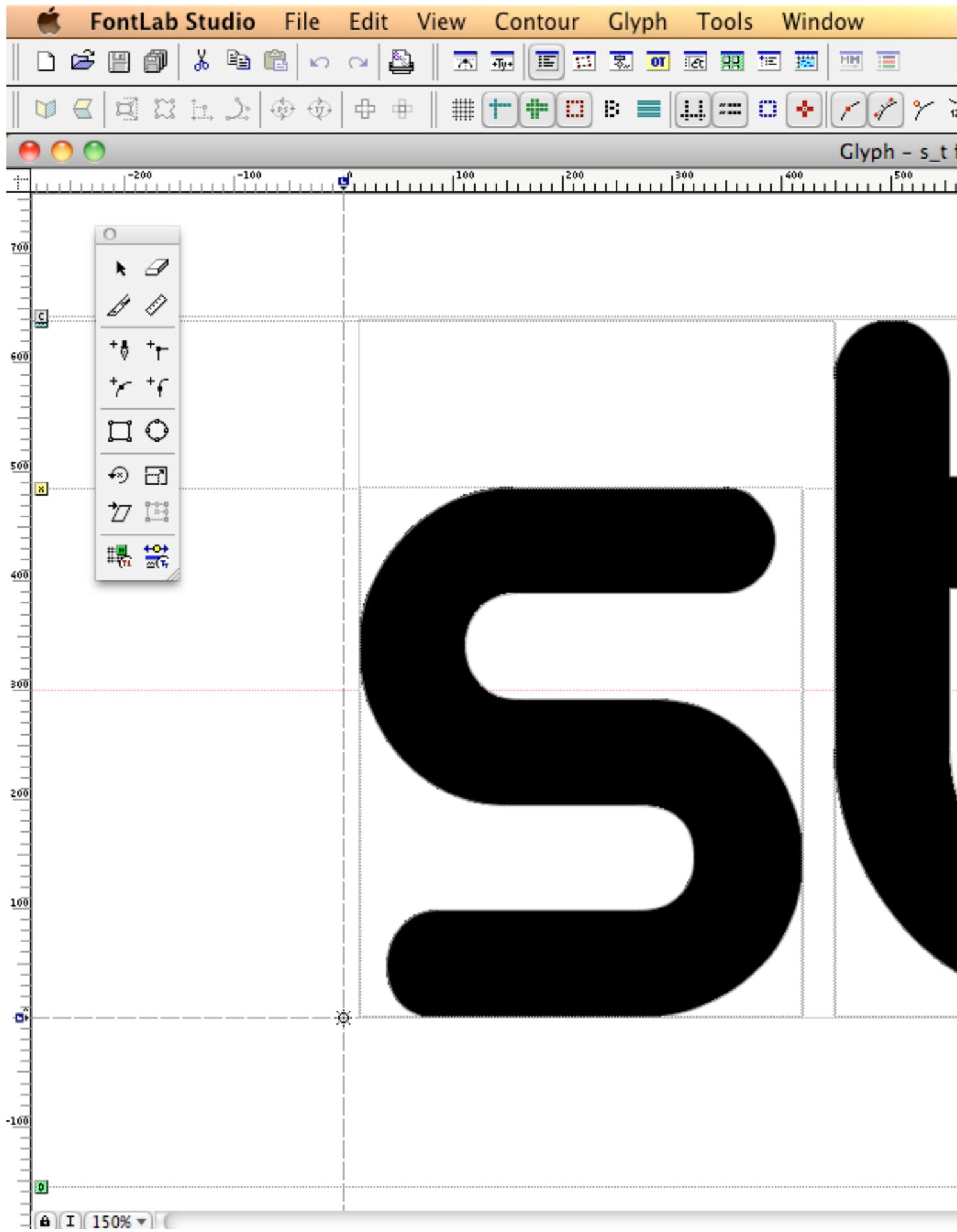
Size Unicode Pages mode MacOS Roman Glyph: s\_t [FB06] Selected: 1 / 213

Busca el nuevo glifo y entra en el para modificarlo



La ligadura se compone por dos glifos: s + t





Para editar los glifos...

Editing L

- Outline
- Metrics
- Guides
- Hints
- Mask
- Auto select

Component

Component:

t

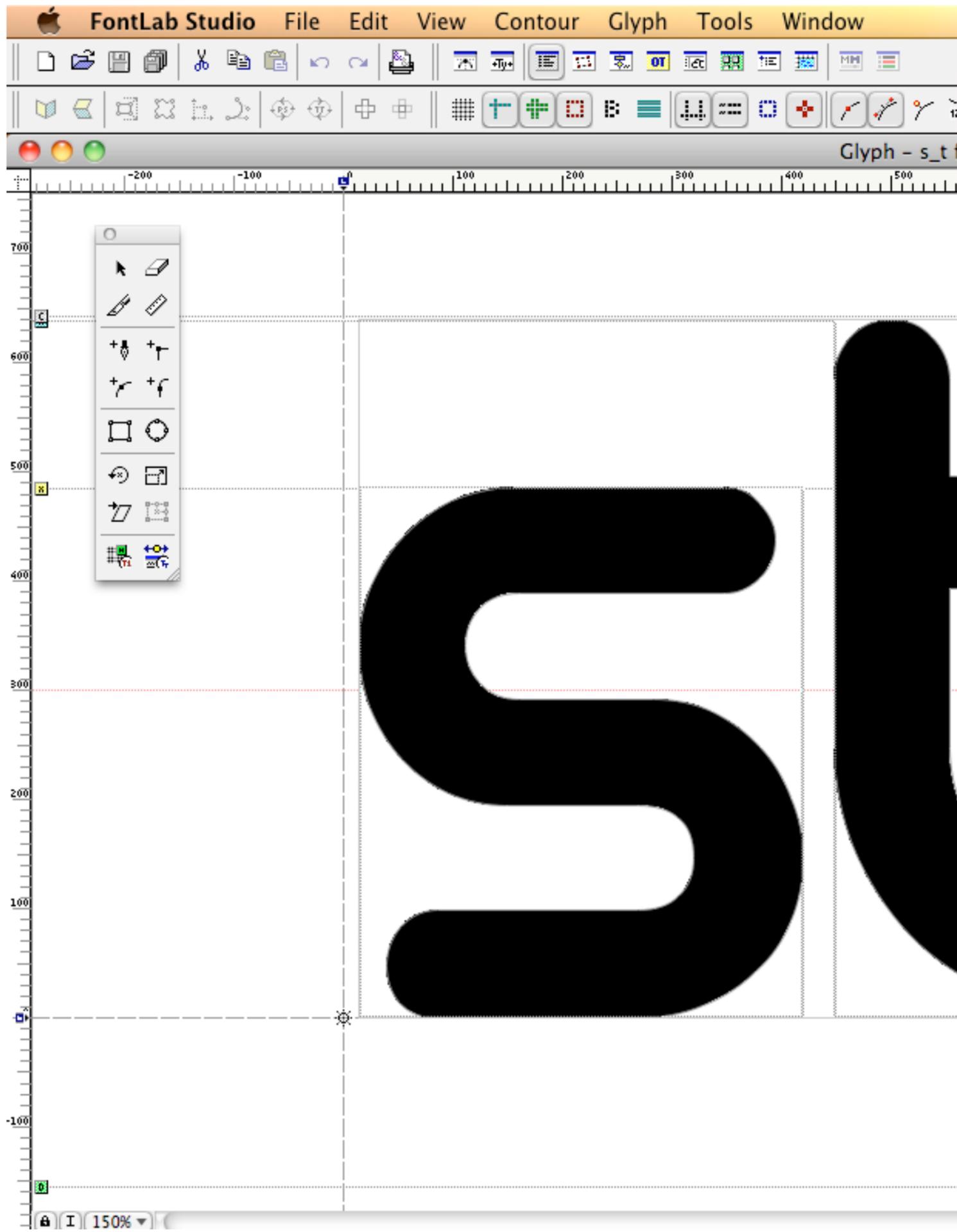
Position:

X: 434 Y: 0

Scale:

X: 100.0 Y: 100.0

Apply



Para editar los glifos...

- Cancel
- Decompose**
- Delete
- Reset Shift
- Center
- Set Scale 100%
- H Mirror
- V Mirror
- Make First
- Copy Metrics
- Copy Anchors
- Edit Component
- Properties
- Macro ▶

- Editing L
- Outline
  - Metrics
  - Guides
  - Hints
  - Mask
  - Auto select

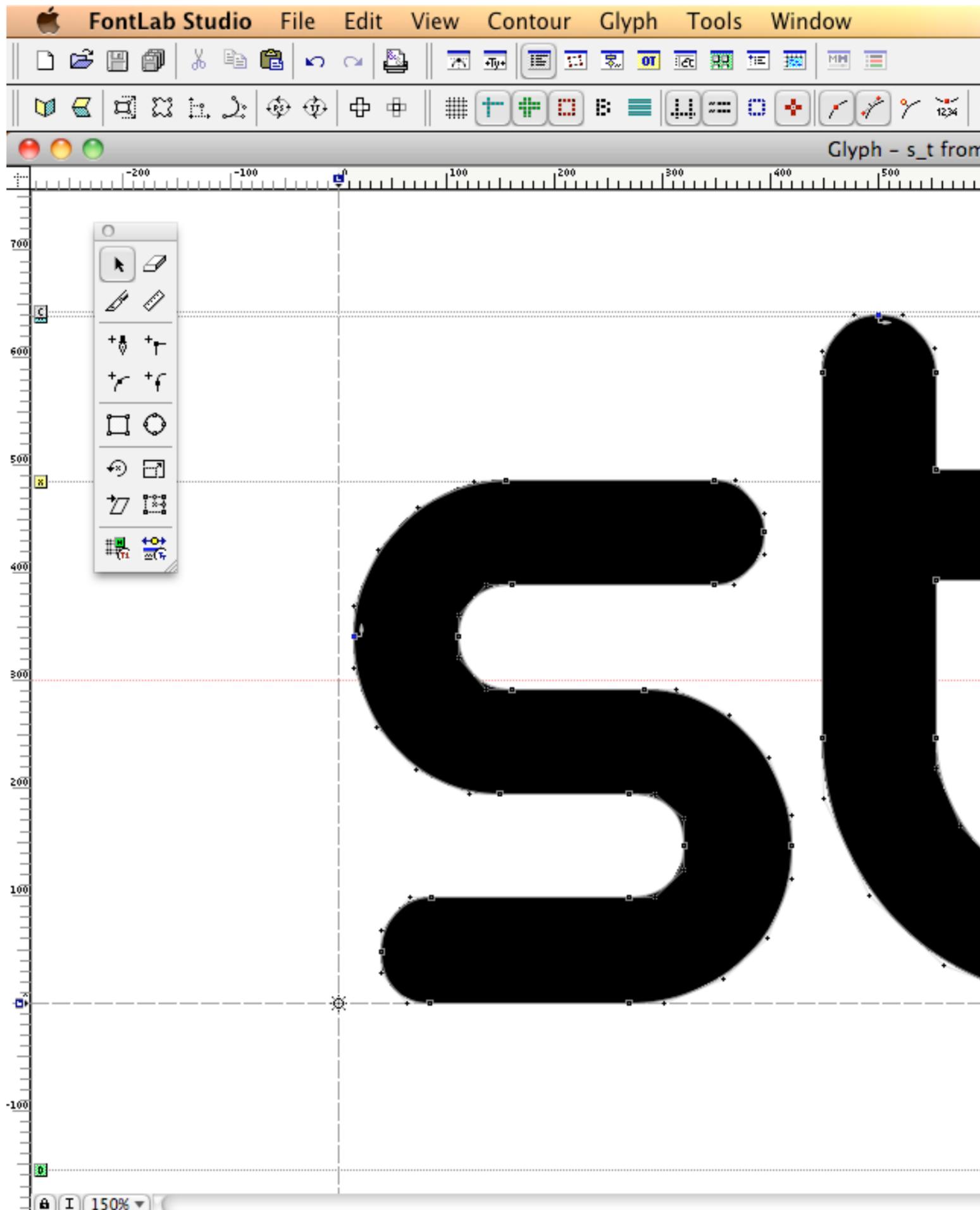
Component

Component: t

Position:  
X: 434 Y: 0

Scale:  
X: 100.0 Y: 100.0

Apply



# Edita el glifo creando una ligadura

- Editing Layer
- Outline
  - Metrics
  - Guides
  - Hints
  - Mask
  - Auto select

Glyph Properties

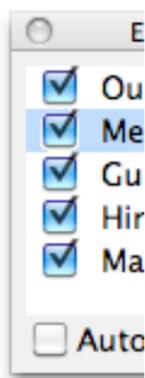
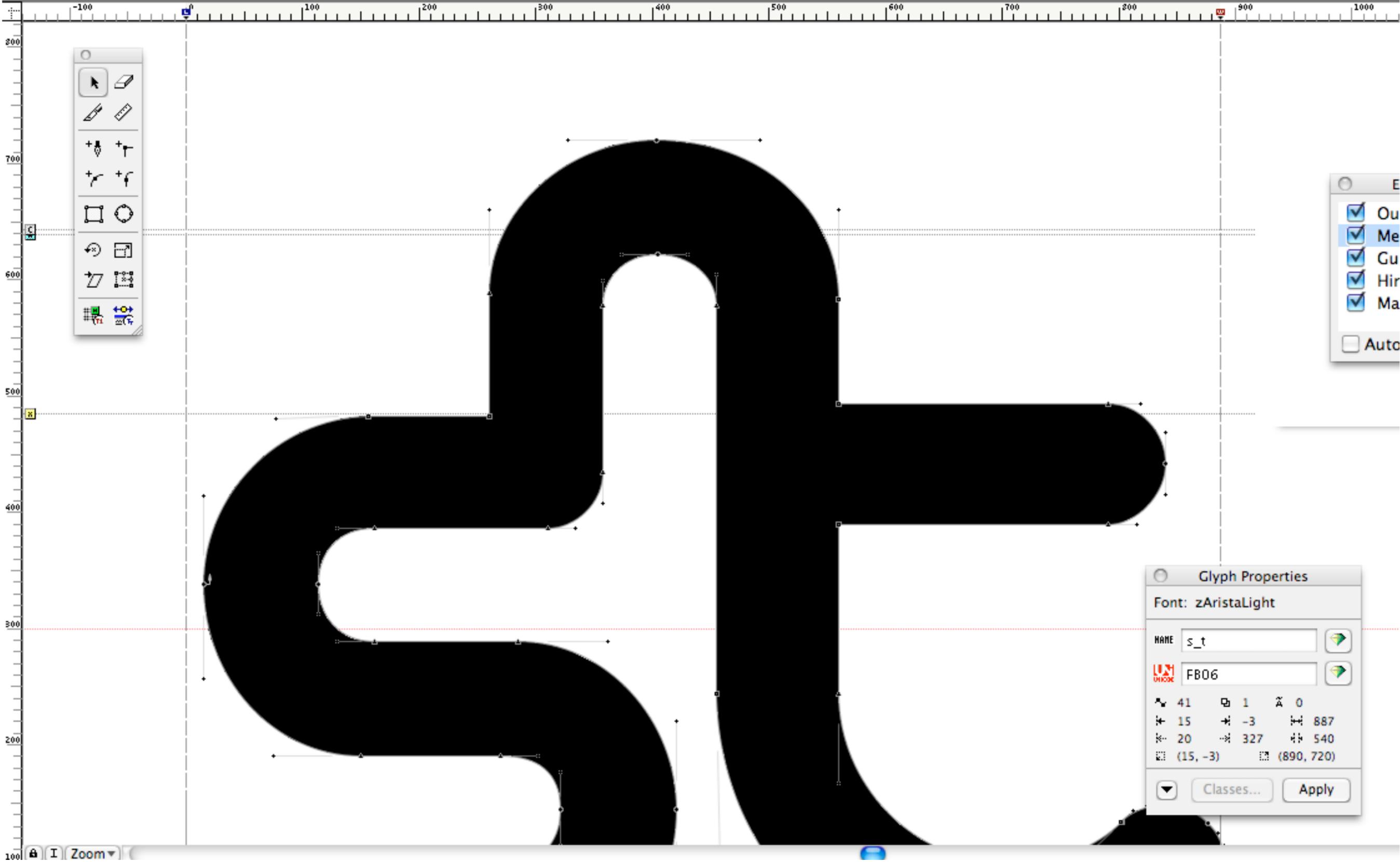
Font: zAristaLight

NAME: s\_t

UNICODE: FB06

94	2	0
14	3	887
19	333	535
(14, 0)		(884, 640)

Classes... Apply



Glyph Properties

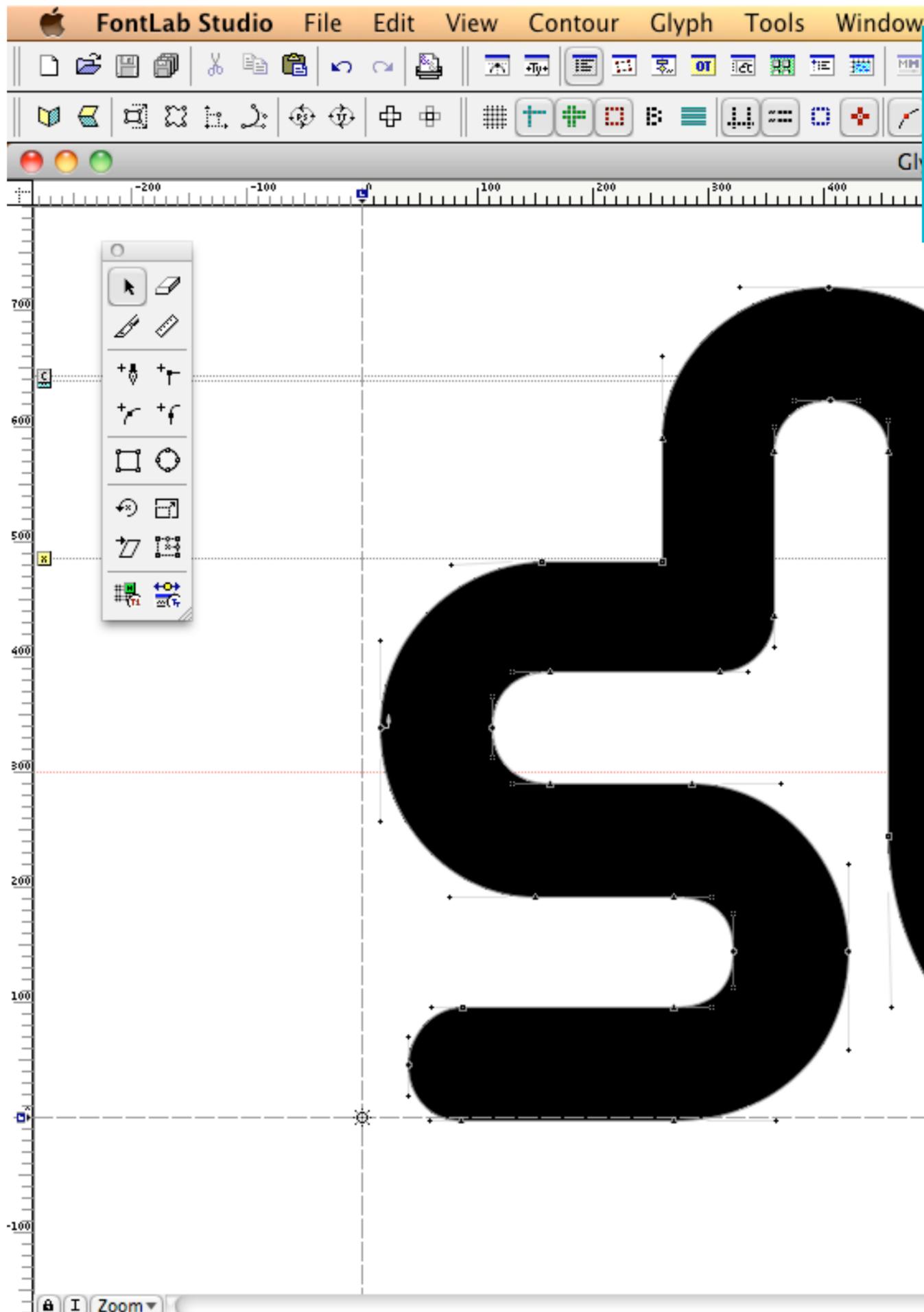
Font: zAristaLight

NAME: s\_t

UNICODE: FB06

41	1	0
15	-3	887
20	327	540
(15, -3)	(890, 720)	

Classes... Apply



Terminada la ligadura nos resta la programación

- Ou
- Me
- Gu
- Hir
- Ma
- Auto

Glyph Properties

Font: zAristaLight

NAME: s\_t

UNICODE: FB06

41	1	0
15	-3	887
20	327	540
(15, -3)	(890, 720)	

Classes... Apply

FontLab Studio File Edit View Contour Glyph Tools Window

New Glyph Window  
New Metrics Window ⌘⇧M

Panels  
Workspace

Cascade  
Tile Horizontally  
Tile Vertically  
Close All

Font -  
Glyph - s\_t from  
Windows...

Editing Layers  
Transformation  
Edit Macro  
OpenType  
Output  
Preview  
Classes  
Fonts  
Font Map  
Smart Shapes

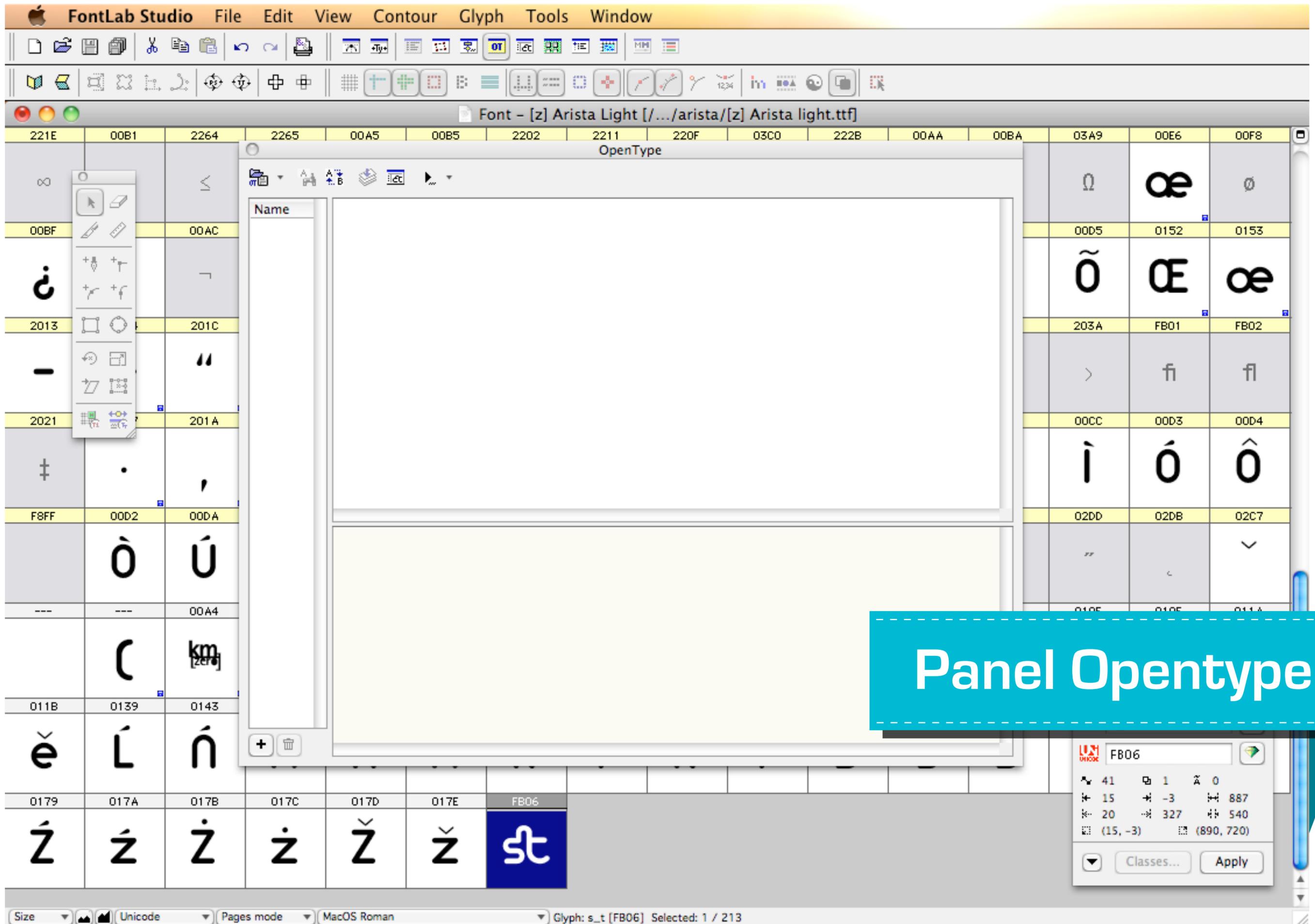
Axis  
Masters

Editing L...  
 Outline  
 Metrics  
 Guides  
 Hints  
 Mask  
 Auto select

Glyph Properties  
Font: zAristaLight  
NAME s\_t  
FB06  
41 1 0  
15 -3 887  
20 327 540  
(15, -3) (890, 720)  
Classes... Apply

221E	00B1	2264	2265	00A5	00B5	2202						03A9	00E6	00F8	
		≤	≥	¥	μ	ð						Ω	œ	ø	
00BF		00AC	221A	0192	2248	2206						00D5	0152	0153	
				f	≈	△						õ	Œ	œ	
2013		201C	201D	2018	2019	00F7						203A	FB01	FB02	
		“	”	‘	’	÷	◇	ÿ	ÿ	/			fi		
2021		201A	201E	2030	00C2	00CA	00C1	00CB	00C8	00CD	00CE	00CF	00CC	00D3	
		,	”	‰	Â	Ê	Á	Ë	È	Í	Î	Ï	Ì	Ó	
F8FF	00D2	00DA	00DB	00D9	0131	02C6	02DC	00AF	02D8	02D9	02DA	00B8	02DD	02DB	
		Ò	Ú	Û	Ù	ˆ	˜		˘	˙			”	˘	
---	---	00A4	00A6	00AD	00D0	00D7	00DD	00FD	0106	0107	010C	010D	010E	010F	011A
		ƒ	km [zero]		-	Đ	x	Ý	ý	Ć	ć	Č	č	ǰ	ǰ
011B	0139	0143	0144	0147	0148	0154	0155	0158	0159	015A	015B	0160			
		ě	Ł	ń	ń	ň	ň	Ŕ	ř	Ř	ř	Ś	ś	Š	š
0179	017A	017B	017C	017D	017E	FB06									
		Ž	ž	Ž	ž	Ž	ž	st							

Size [icon] Unicode [icon] Pages mode [icon] MacOS Roman [icon] Glyph: s\_t [FB06] Selected: 1 / 213



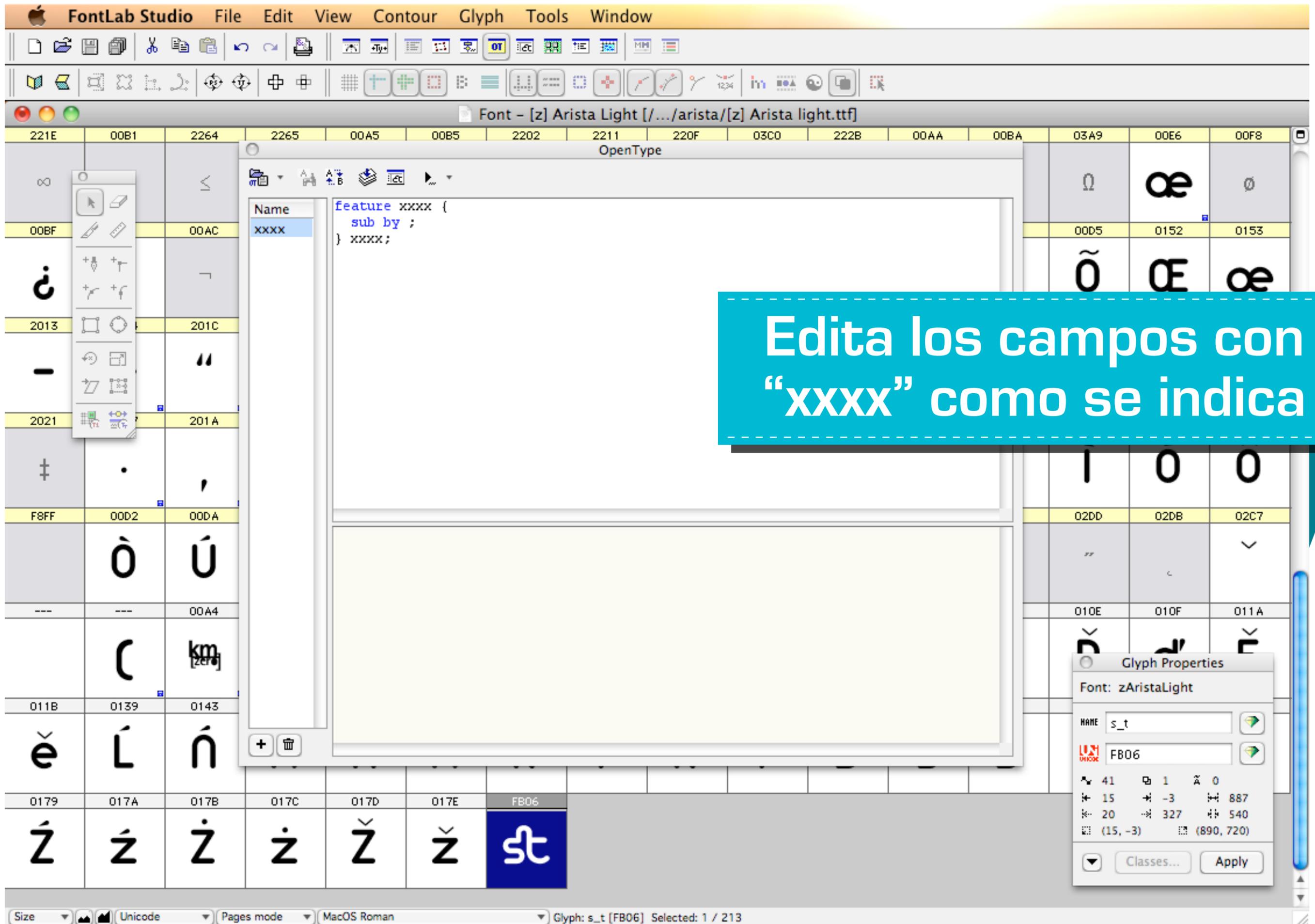
Panel Opentype

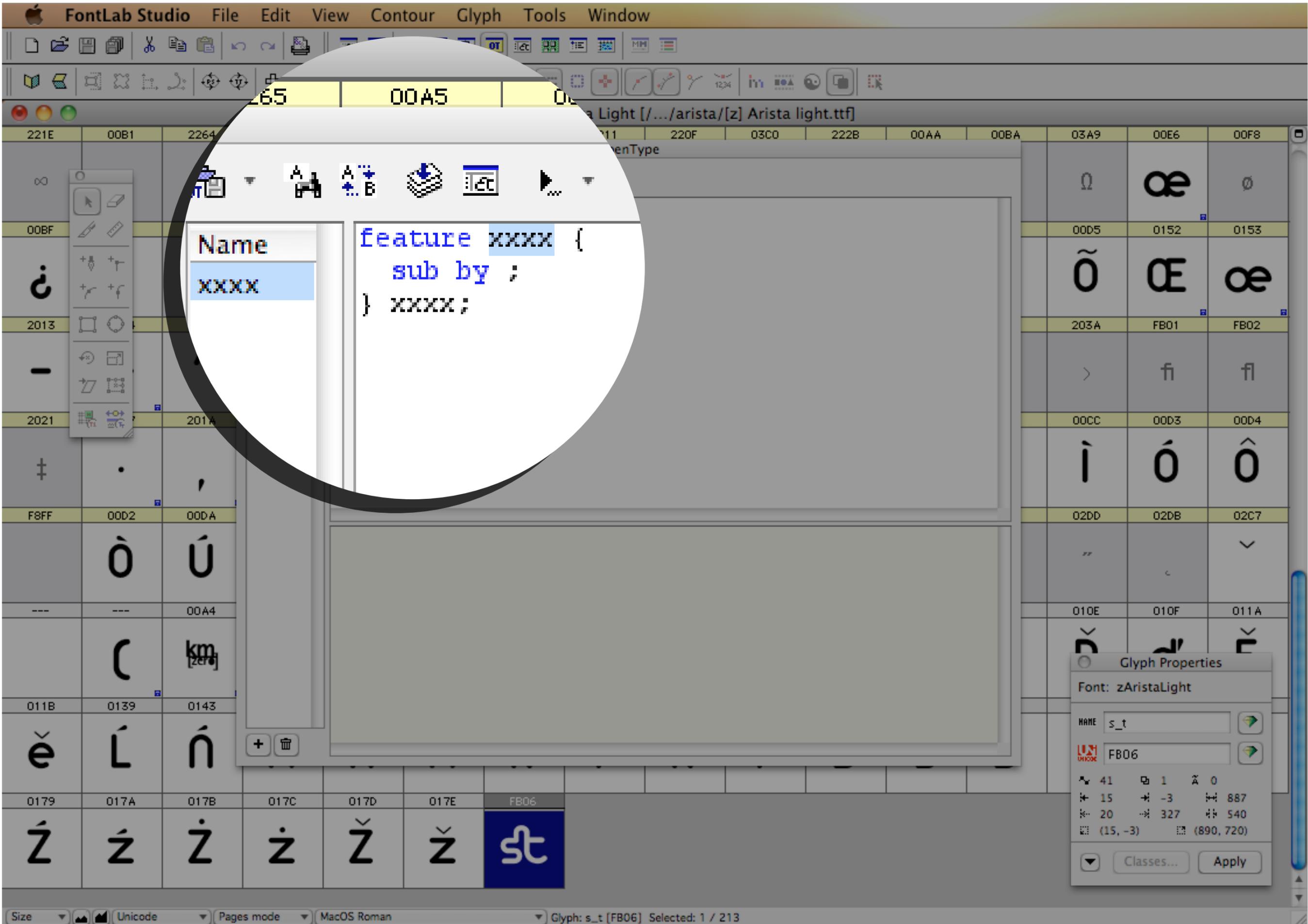
UNICODE FB06

41	1	0
15	-3	887
20	327	540
(15, -3)	(890, 720)	

Classes... Apply







Name

xxxxx

```
feature xxxxx {  
  sub by ;  
} xxxxx ;
```

Glyph Properties

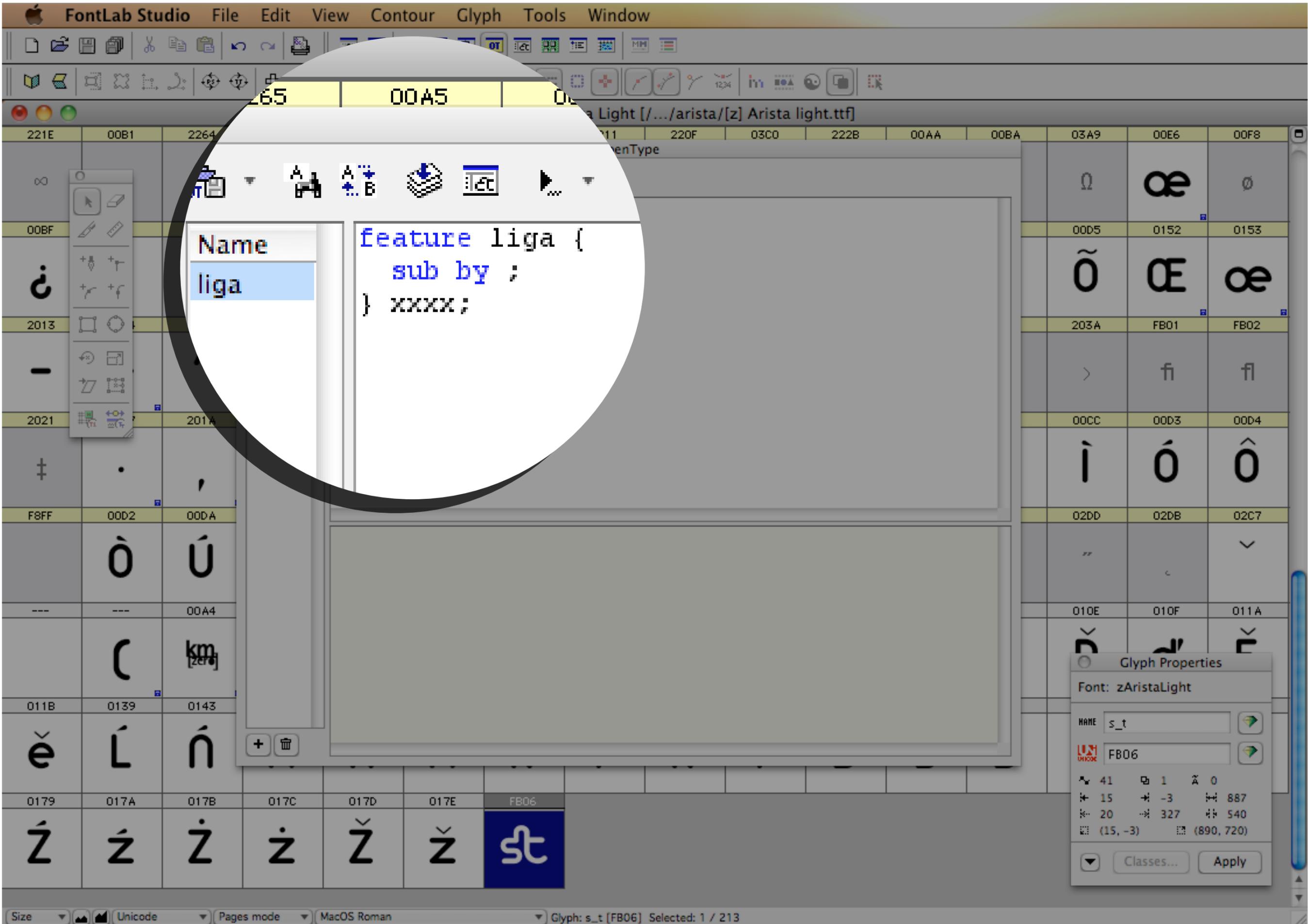
Font: zAristaLight

NAME: s\_t

UNICODE: FB06

41 1 0  
15 -3 887  
20 327 540  
(15, -3) (890, 720)

Classes... Apply



Name  
liga

```
feature liga {  
  sub by ;  
} xxxxx ;
```

Glyph Properties

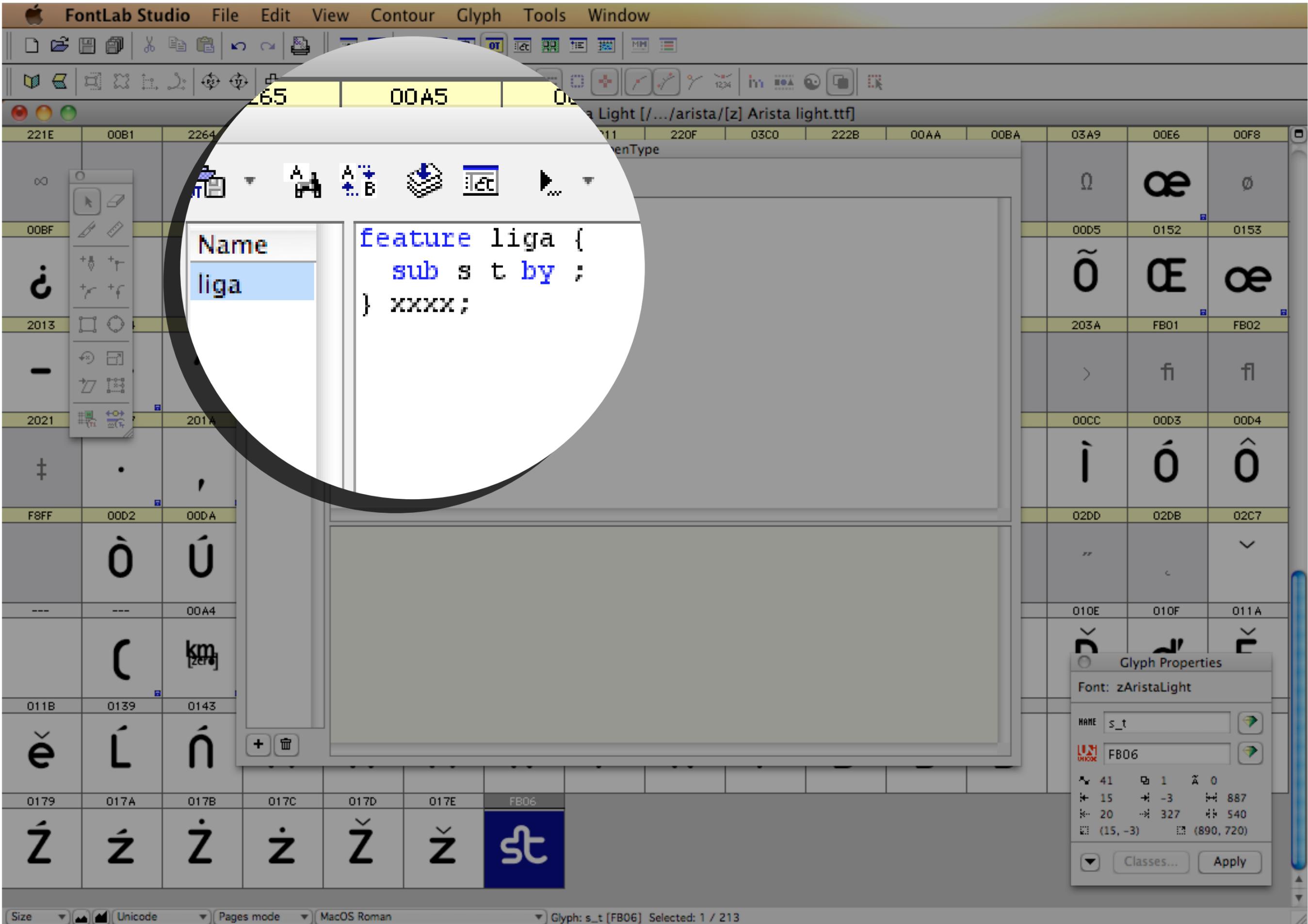
Font: zAristaLight

NAME: s\_t

UNICODE: FB06

41 1 0  
15 -3 887  
20 327 540  
(15, -3) (890, 720)

Classes... Apply



Name  
liga

```
feature liga {
  sub s t by ;
} xxxxx;
```

Glyph Properties

Font: zAristaLight

NAME s\_t

UNICODE FB06

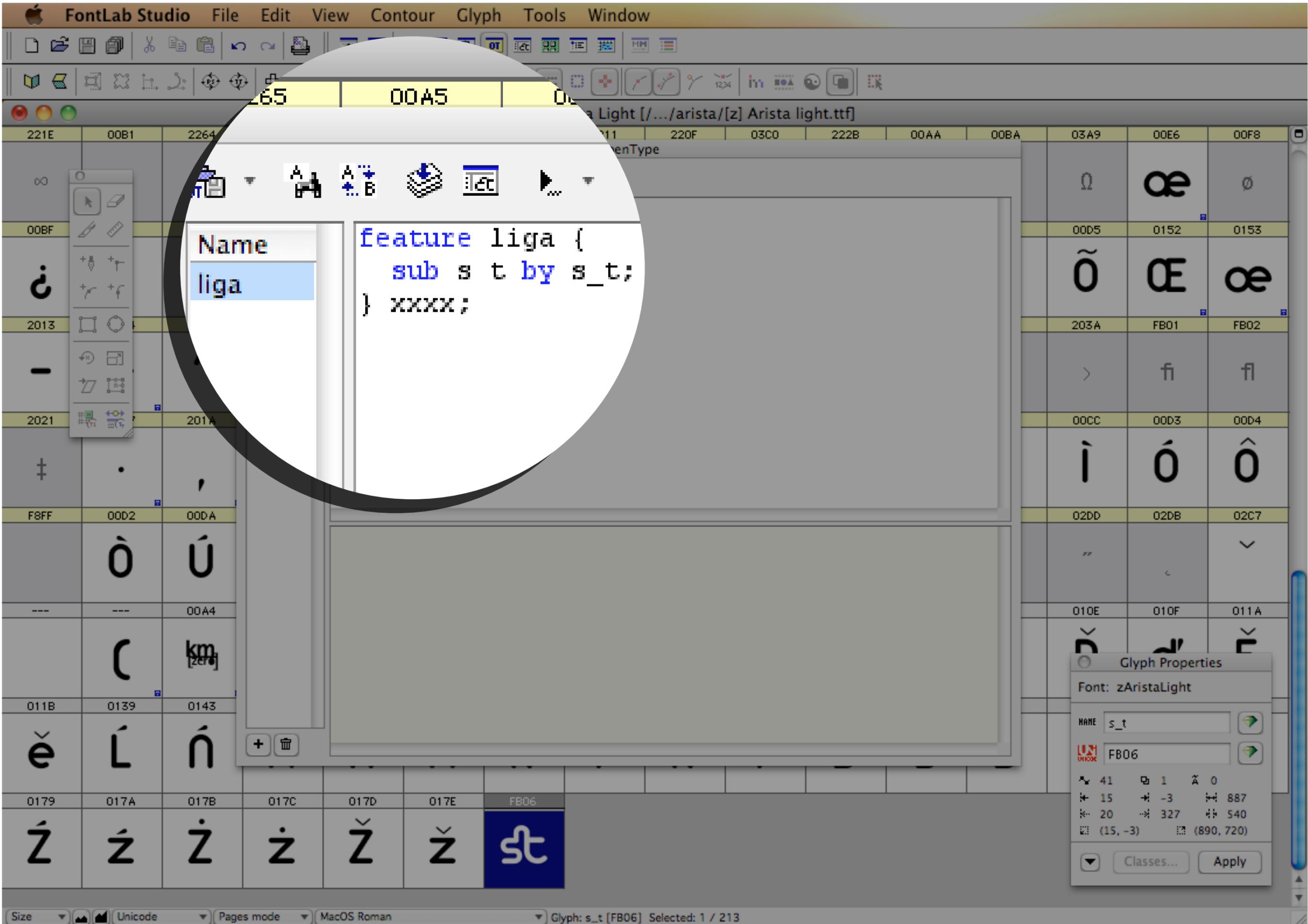
41 1 Å 0

15 + -3 887

20 - 327 540

(15, -3) (890, 720)

Classes... Apply



Name  
liga

```
feature liga {  
  sub s t by s_t;  
} xxxxx;
```

Glyph Properties

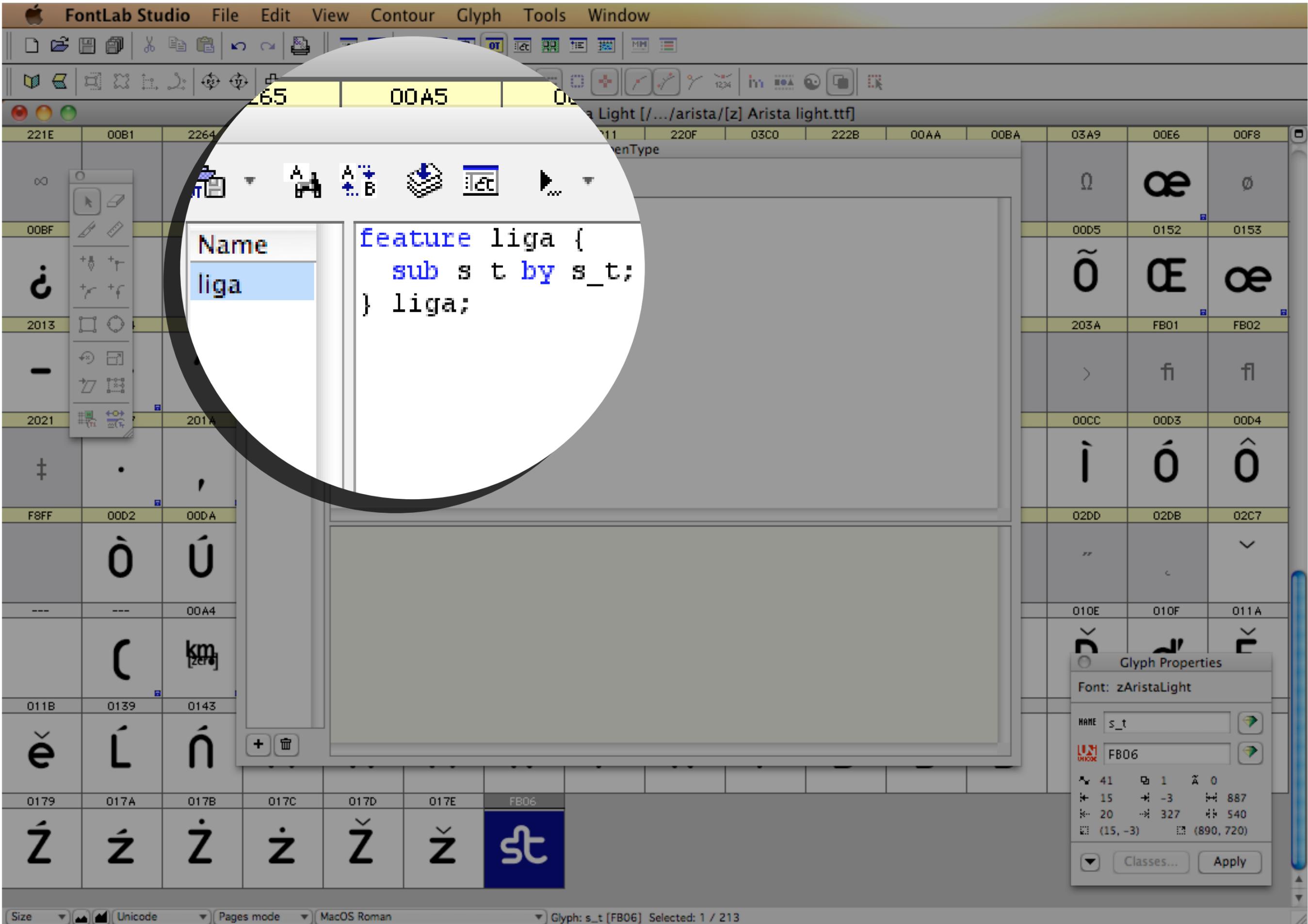
Font: zAristaLight

NAME: s\_t

UNICODE: FB06

41 1 Å 0  
15 -3 887  
20 327 540  
(15, -3) (890, 720)

Classes... Apply



Name

liga

```
feature liga {  
  sub s t by s_t;  
} liga;
```

Glyph Properties

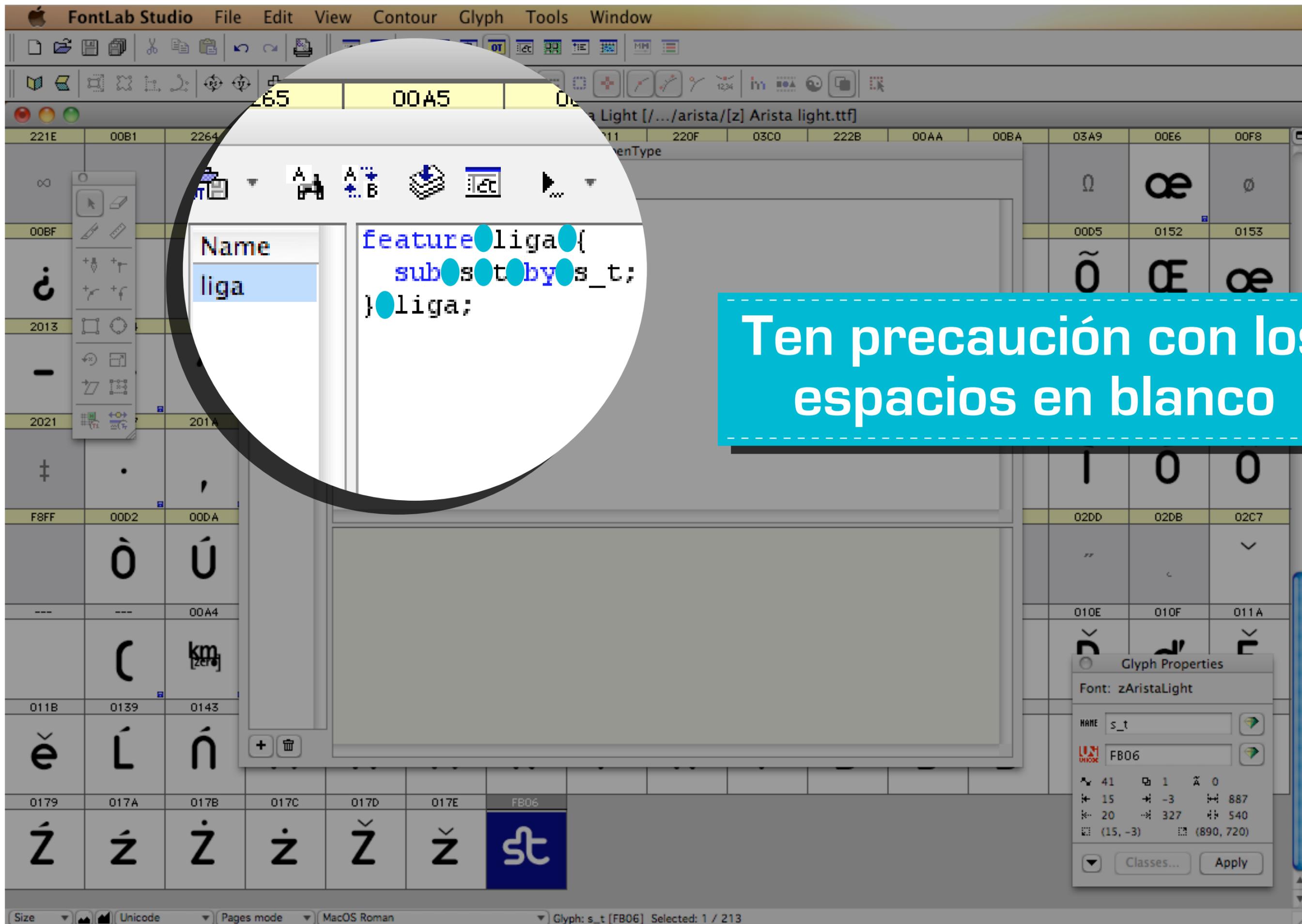
Font: zAristaLight

NAME s\_t

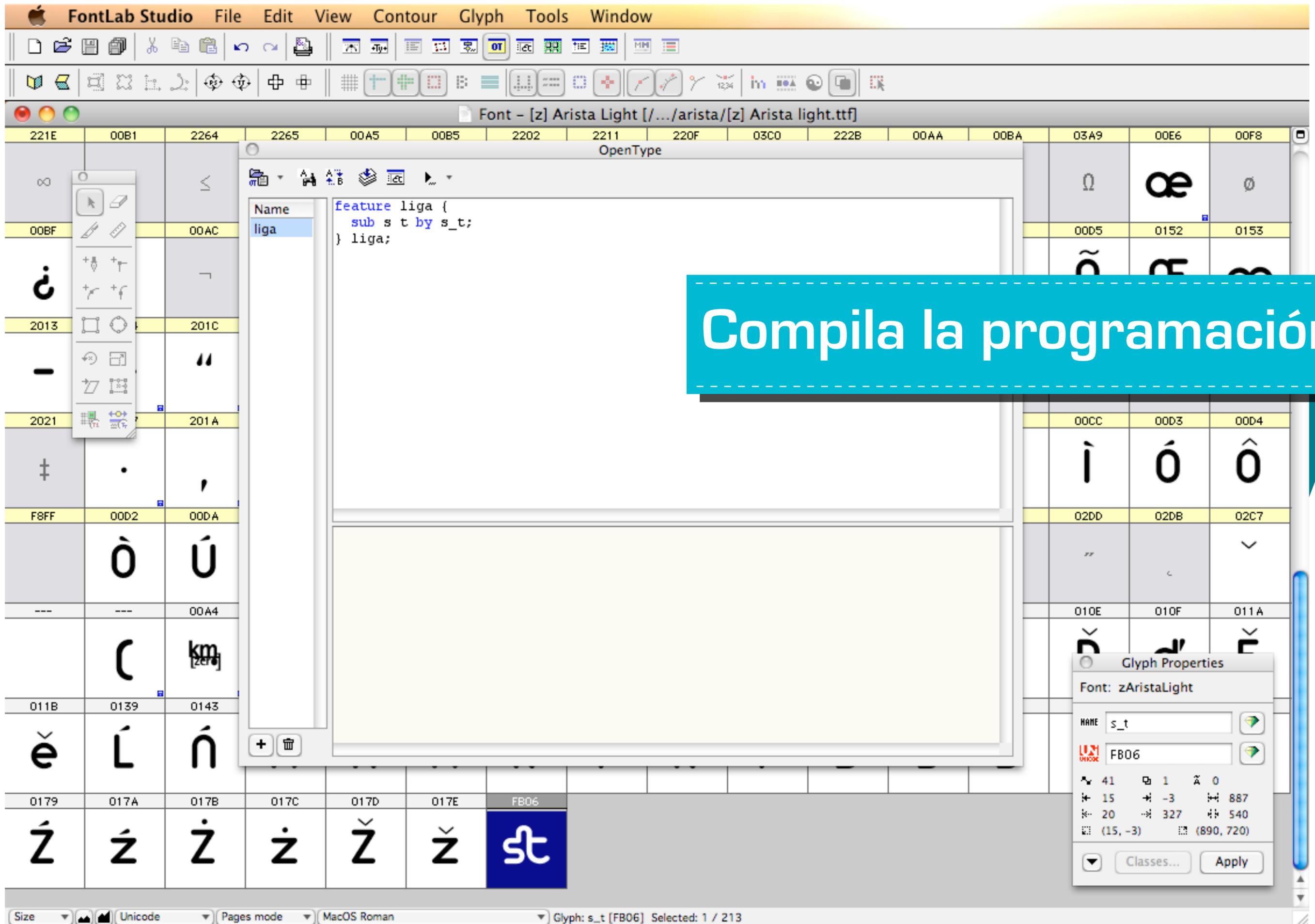
FB06

41 1 Å 0  
15 -3 887  
20 327 540  
(15, -3) (890, 720)

Classes... Apply



Ten precaución con los espacios en blanco



Compila la programación



FontLab Studio File Edit View Contour Glyph Tools Window

New Glyph Window  
New Metrics Window ⌘⇧M

Panels  
Workspace

Cascade  
Tile Horizontally  
Tile Vertically  
Close All

Font -  
Glyph - s\_t from  
Windows...

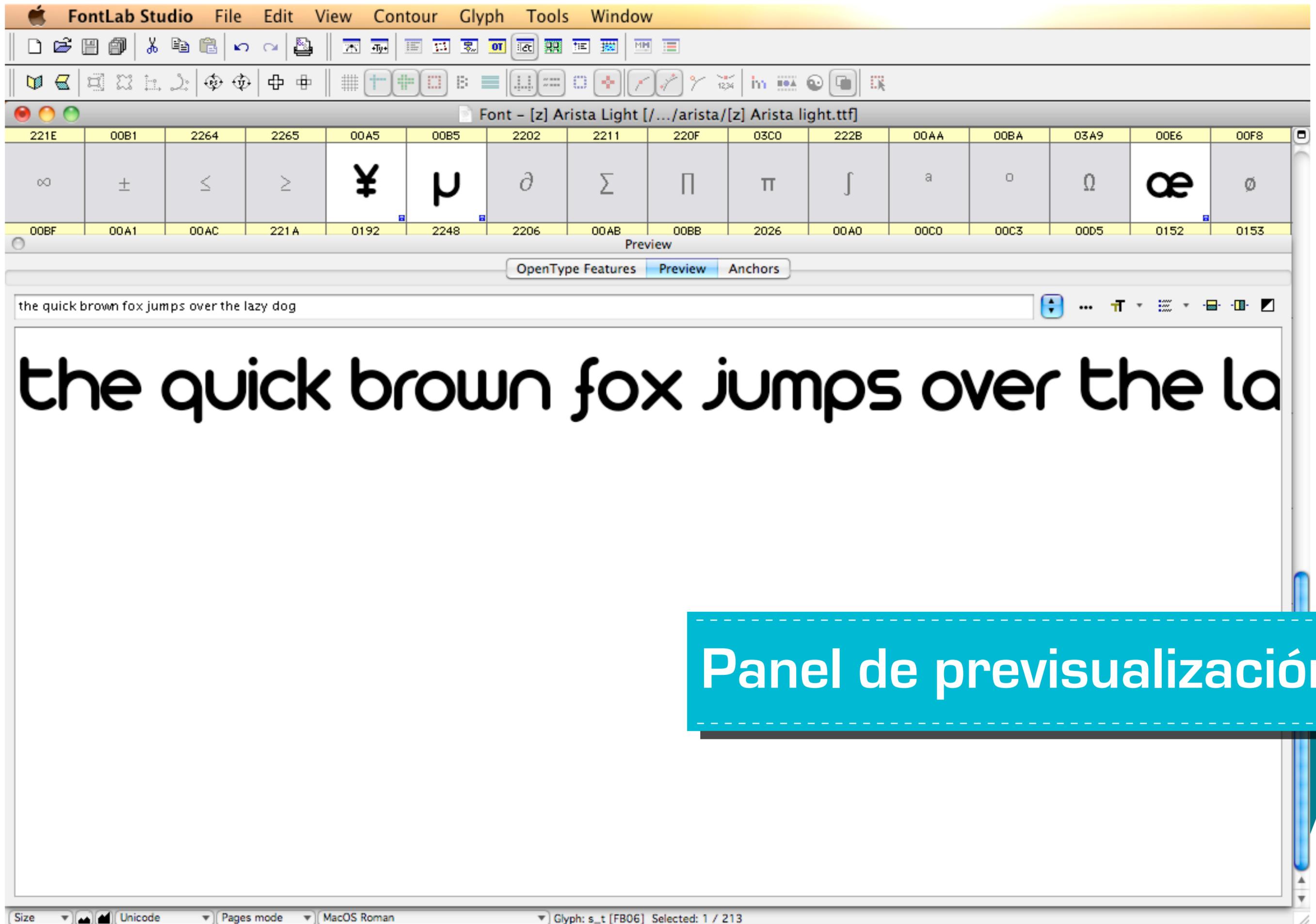
Editing Layers  
Transformation  
Edit Macro  
OpenType  
Output  
Preview  
Classes  
Fonts  
Font Map  
Smart Shapes

Axis  
Masters

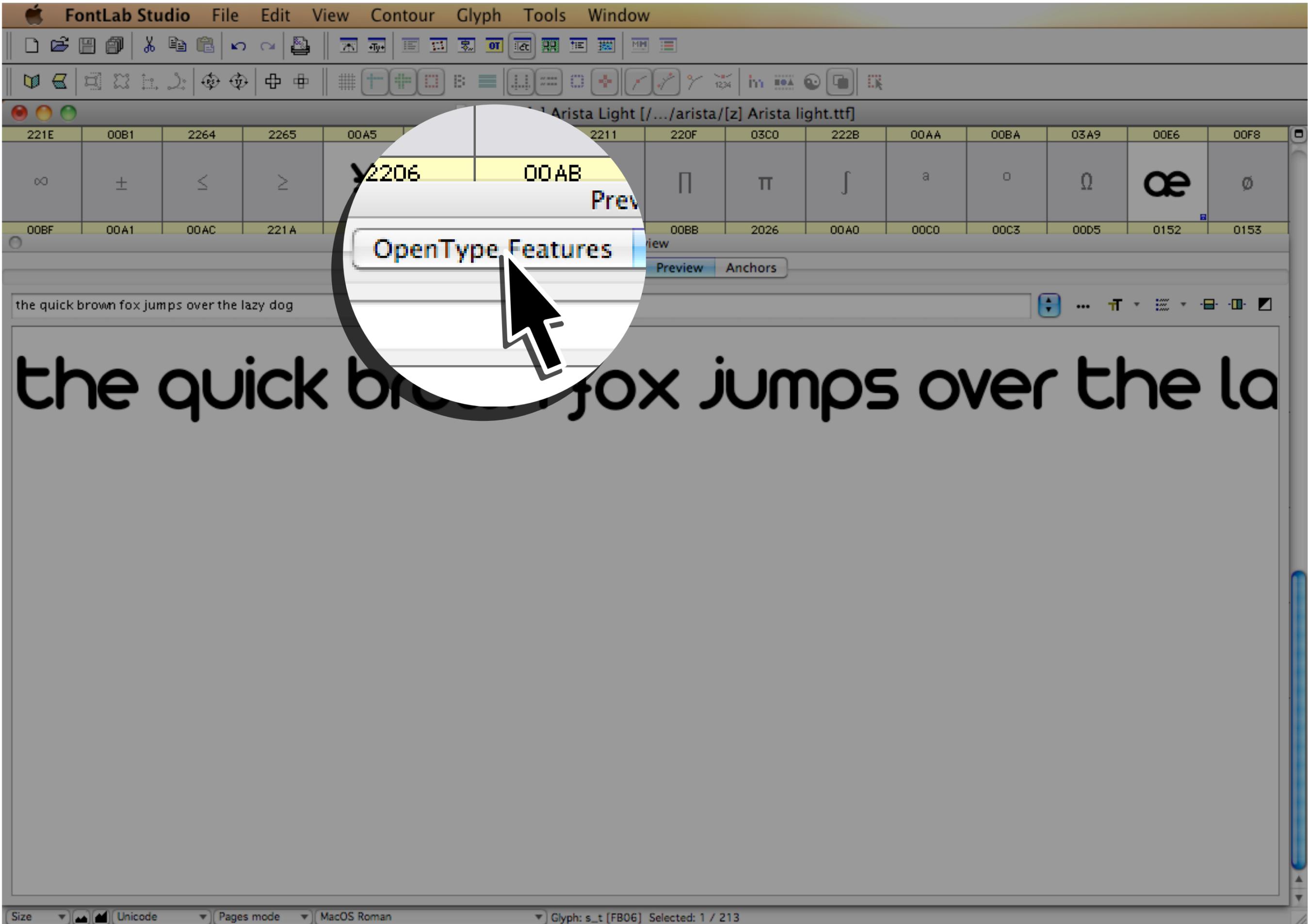
Solo nos falta probar si la ligadura funciona

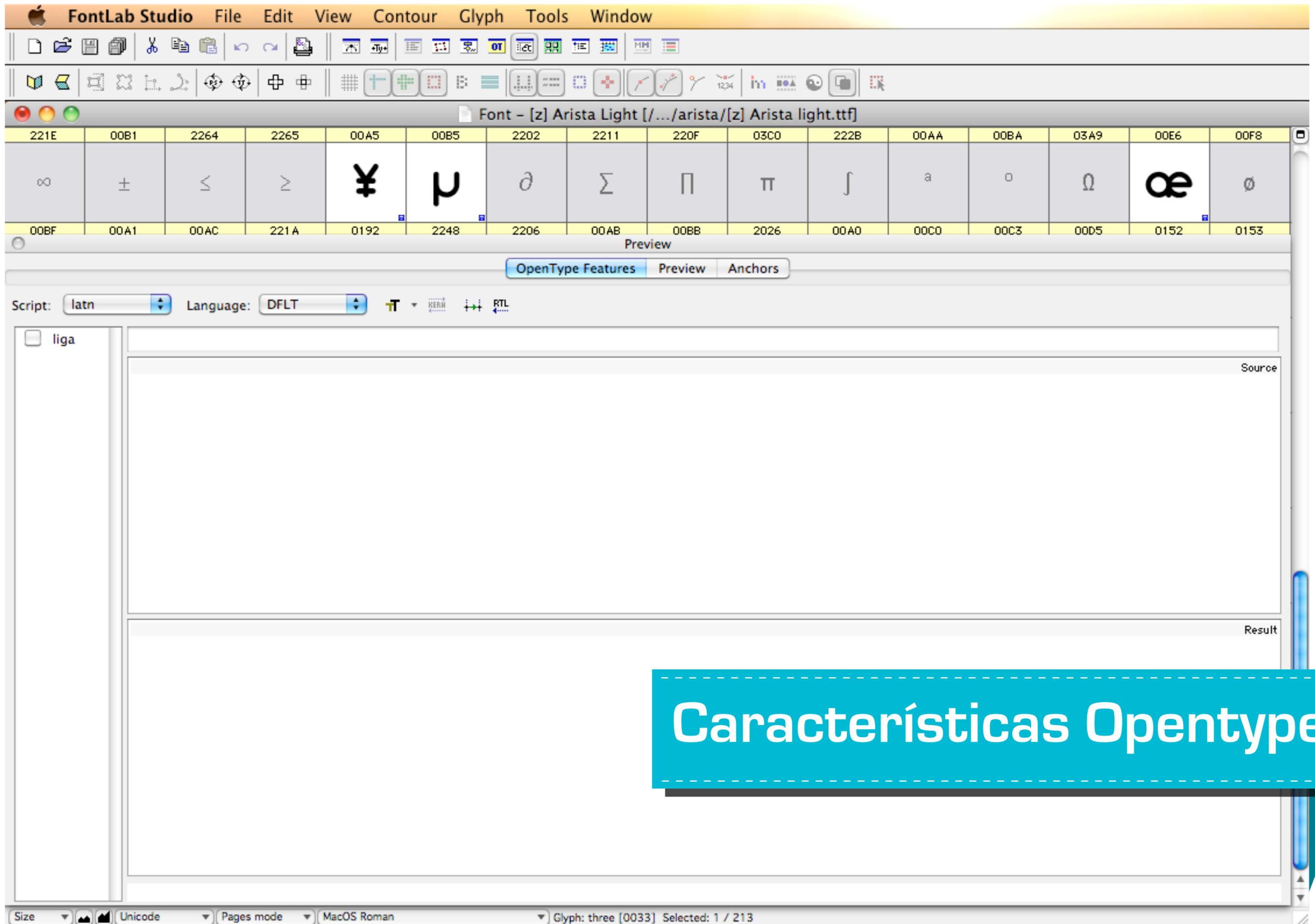
Font: zAristaLight  
NAME s\_t  
FB06  
41 1 0  
15 -3 887  
20 327 540  
(15, -3) (890, 720)  
Classes... Apply

Size Unicode Pages mode MacOS Roman Glyph: s\_t [FB06] Selected: 1 / 213

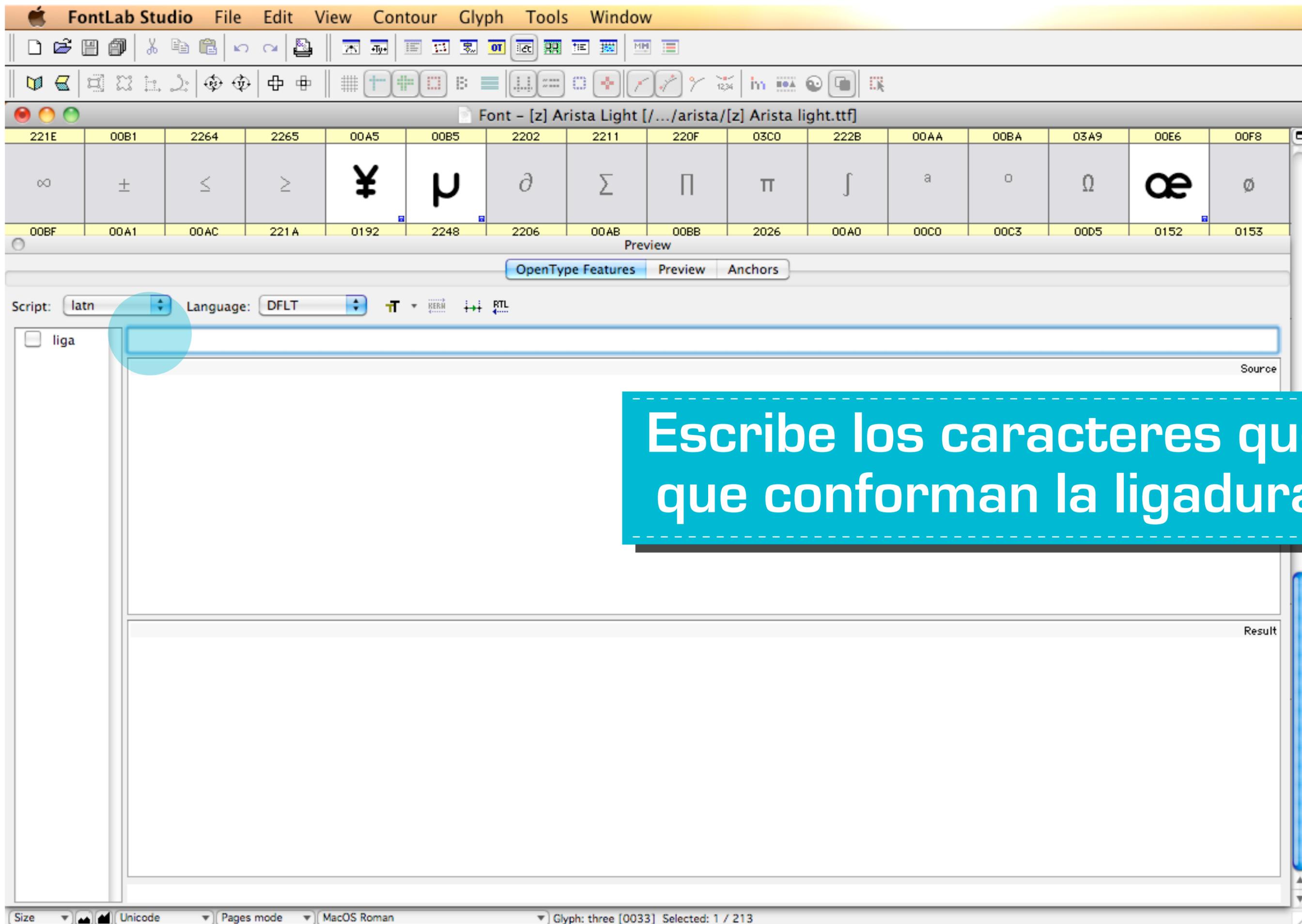


Panel de previsualización





# Características Opentype





221E	00B1	2264	2265	00A5	00B5	2202	2211	220F	03C0	222B	00AA	00BA	03A9	00E6	00F8
∞	±	≤	≥	¥	μ	∂	Σ	Π	π	∫	ª	º	Ω	æ	ø
00BF	00A1	00AC	221A	0192	2248	2206	00AB	00BB	2026	00A0	00C0	00C3	00D5	0152	0153

Preview

OpenType Features Preview Anchors

Script: latn Language: DFLT

liga

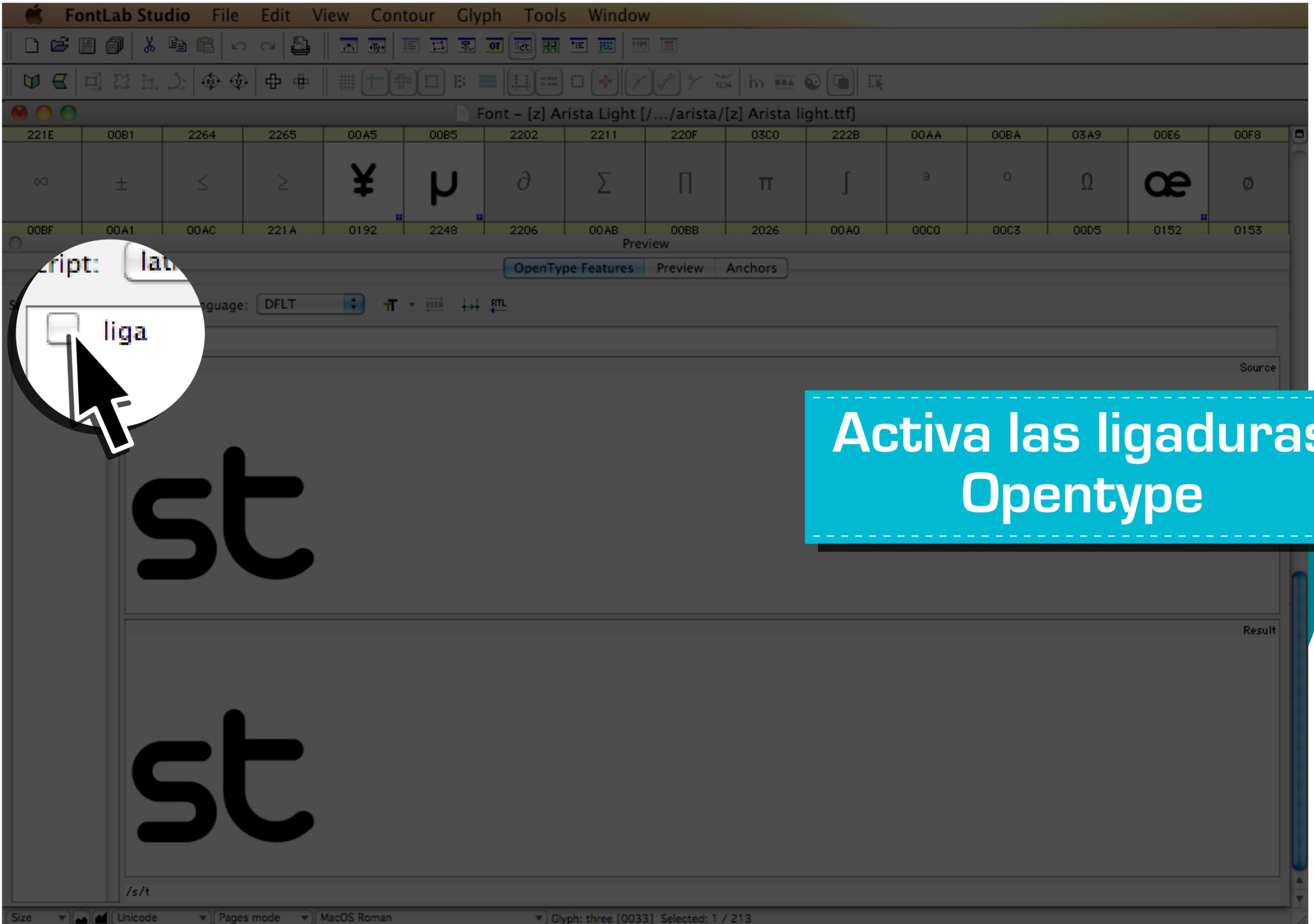
st

Source

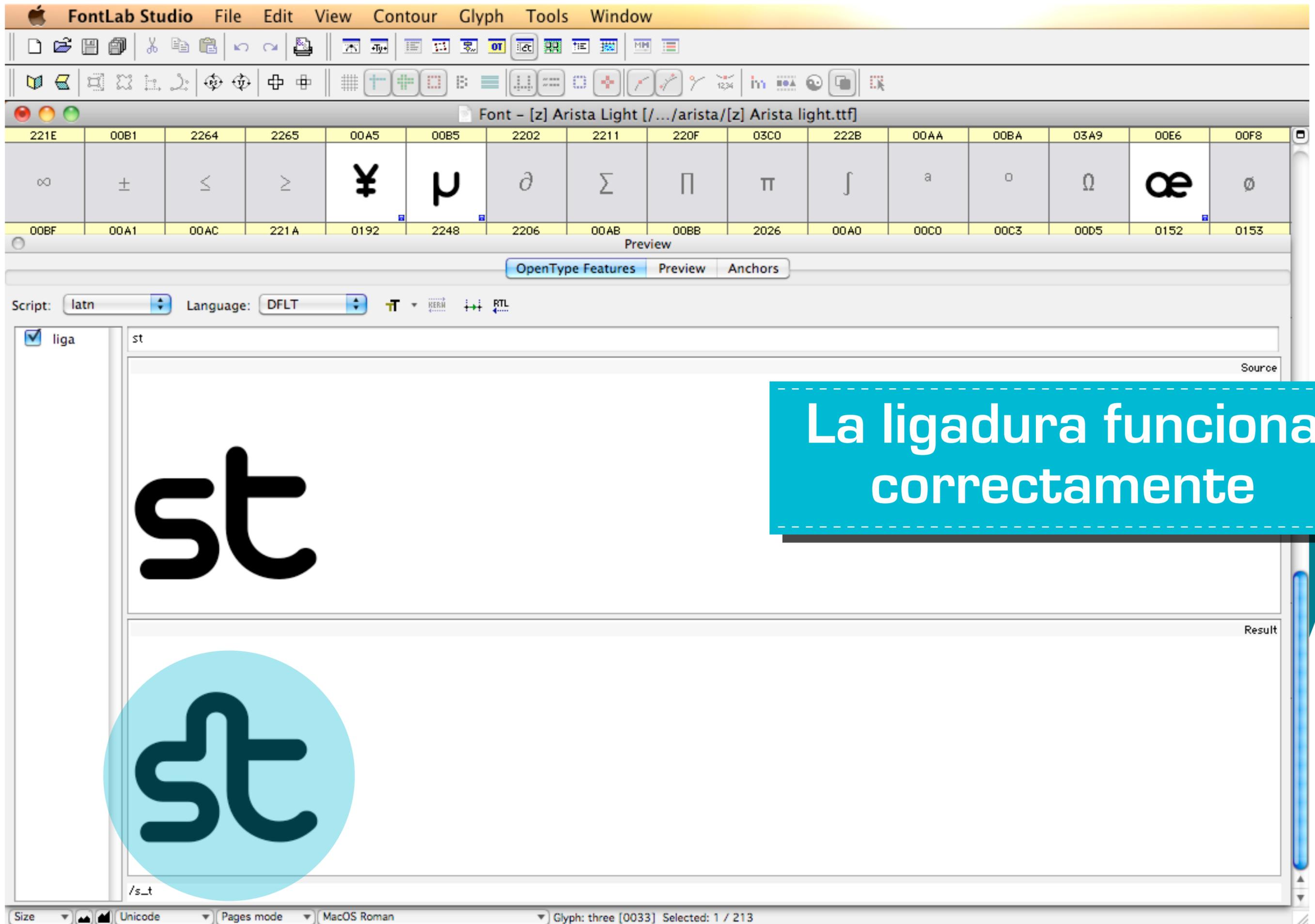
st

Result

/s/t



Activa las ligaduras  
Opentype



La ligadura funciona correctamente

# FUENTES

\* Video sobre creación de ligaduras, youtube



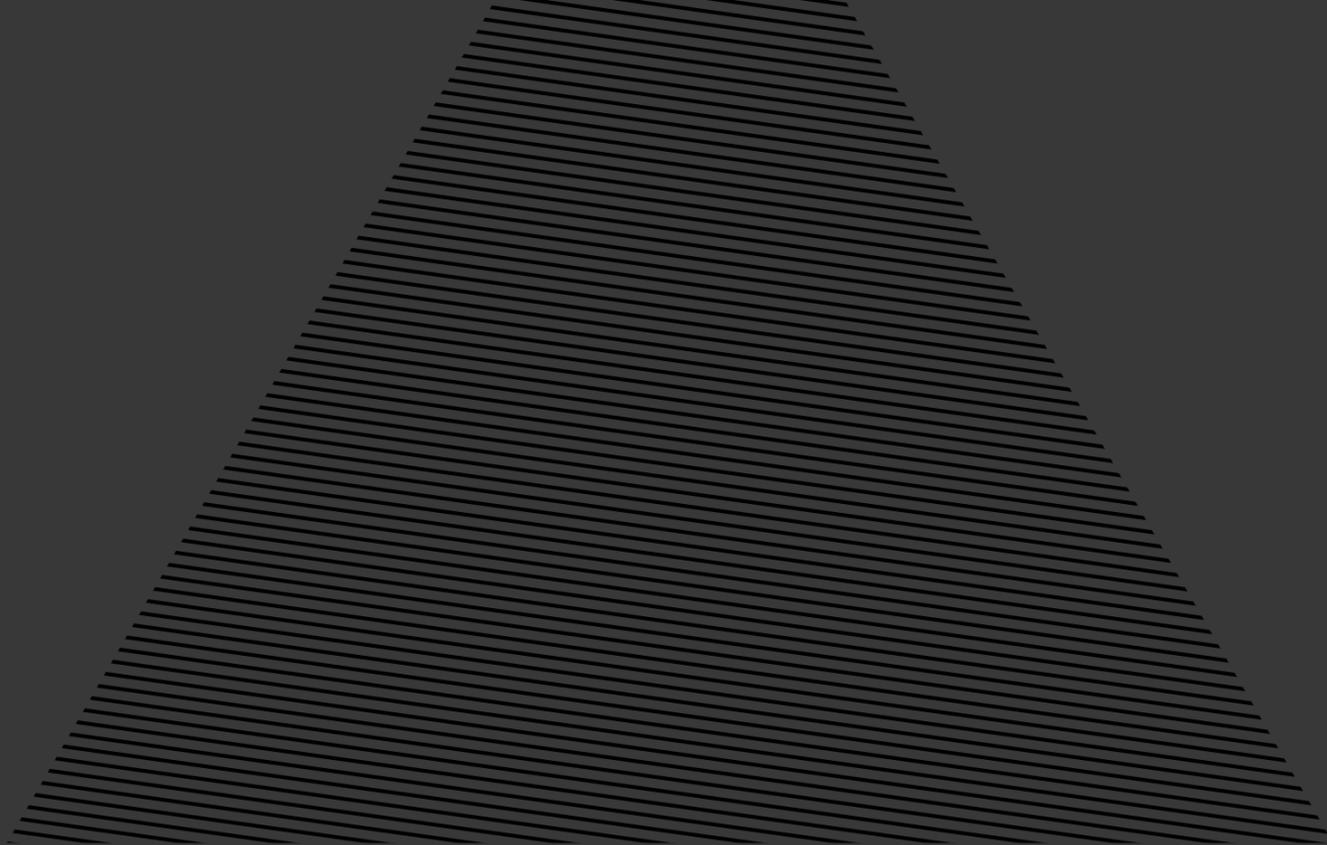
\* Manual Fontlab 5

\* Tipografía usada: Arista Light, KM [zero]

---

\* Otra visión de las ligaduras, por David Schwen





*Tutorial creado con el fin de contribuir al aprendizaje y formación profesional de personas interesadas en el dominio de nuevas tecnologías en Tipografía.*

*Este tutorial puede ser usado sólo citando a su autor. Trabajo licenciado con Creative Commons.*

