3.2" Front Light Panel

FLEx

Overview

The **FLEx Front Light Panel** optical film is designed to laminate to the front surface of **Sharp reflective display (LS032B7DD02)** to provide high quality on-demand display lighting. This thin plastic panel incorporates only a single LED which enables product designers to develop ultra-thin devices and minimize battery use.
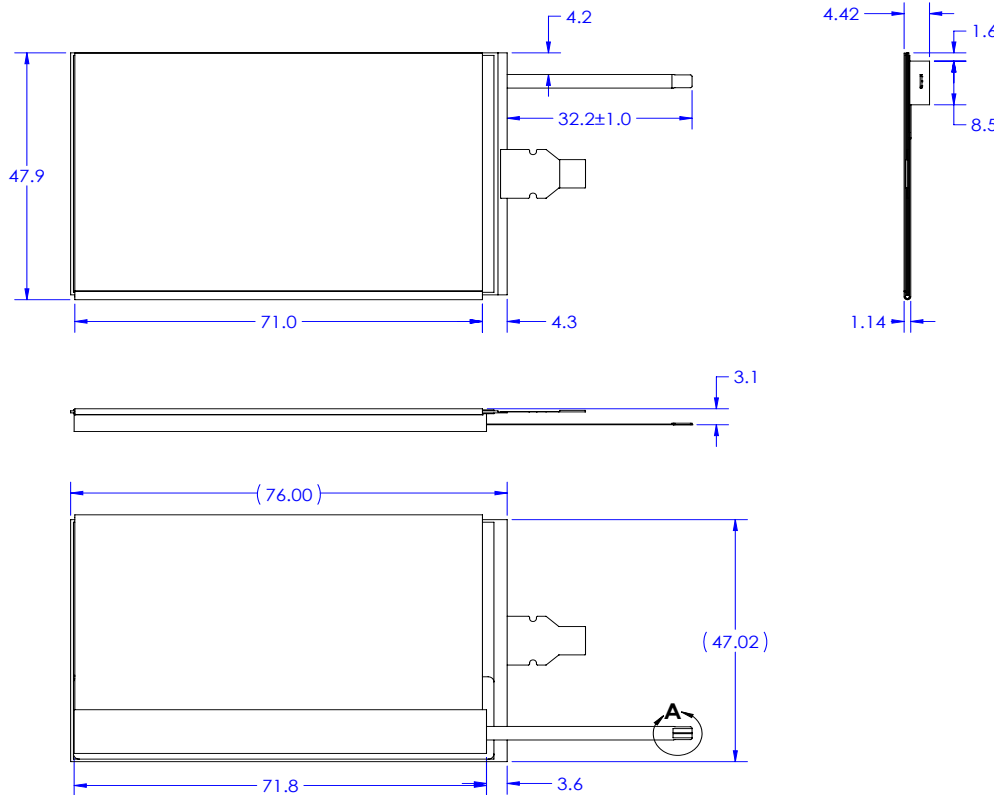
- One **low-power** LED (included in Front Light)
- Over **80x less power** compared to traditional backlighting
- 0.05 mm thick FLEx film is over **5x thinner** than alternative lightguides
- **Simple I/F** and **Connectivity** to System Board

SHARP
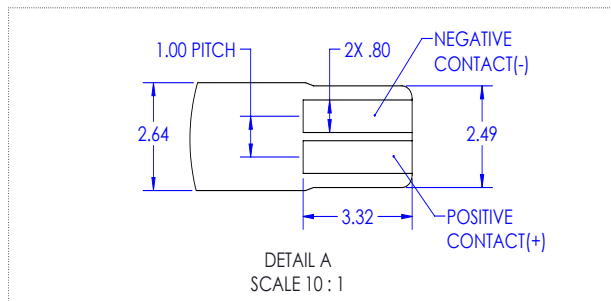*Approved*
Value-Added Partner

Mechanical

4.2
32.2±1.0
47.9
71.0
4.3

4.42
1.6
8.5
1.14

3.1
(76.00)
(47.02)
A
71.8
3.6

Flexible film allows for different placement options for the light source (examples below)

All dimensions in mm

PRELIMINARY

1.00 PITCH
2X .80
NEGATIVE CONTACT(-)
2.64
2.49
3.32
POSITIVE CONTACT(+)

DETAIL A
SCALE 10 : 1

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Electrical

Item	Symbol	Typical	Absolute Max	Unit
Forward Current	I_F	40	60	mA
Pulse Forward Current	I_{FP}	--	200	mA
Reverse Voltage	V_R	2.95	3.4	V

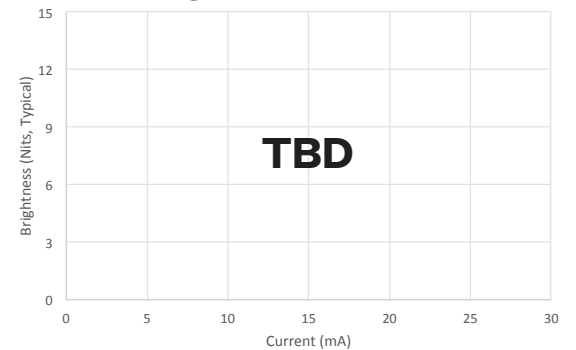**Example ZIF Connectors:**
- Molex 503480-0400
- Molex 52745-0497
- Molex 54550-0471
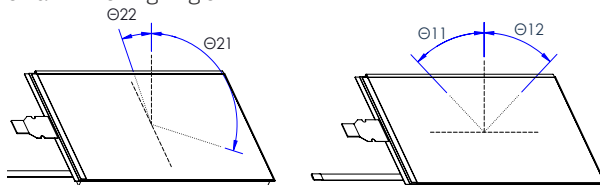- Molex 54548-0471 (bottom)
- Molex 505110-0492
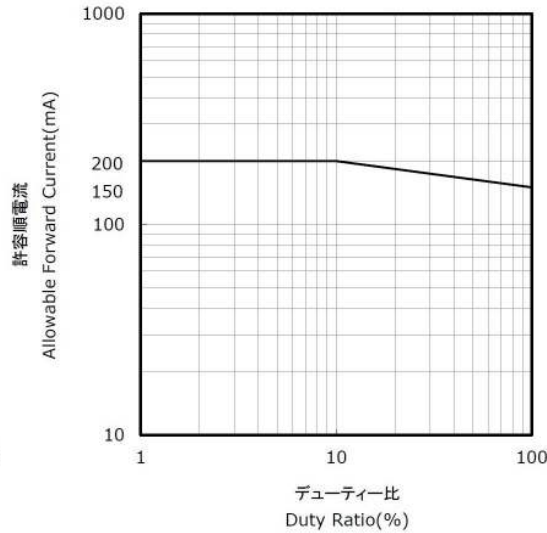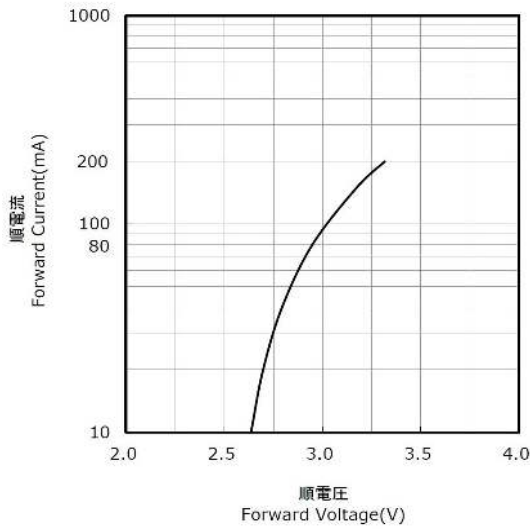
Optical (PRELIMINARY)

3.2" Sharp + Front Light (12936-01)				
Item	**Symbol**	**TYP.**	**Unit**	**Remark**
Viewing Angle CR >2	V	Θ 11 Θ 12	--	° (Degree)	[Remark 1]
	H	Θ 21 Θ 22	--	° (Degree)	
Contrast Ratio	Front light ON	CR	9	--	[Remark 2]

Brightness vs. Power

TBD

Brightness (Nits, Typical) vs Current (mA)

Remark 1: Viewing Angle

Ref Image 1

Remark 2: Definition of Contrast Ratio

$$\text{Contrast Ratio (CR)} = \frac{\text{Reflection intensity in white display}}{\text{Reflection intensity in black display}}$$

Measurements taken with a Minolta Chroma Meter CS-100 at a 17" view distance