Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

LCD- GRAPHIC MODULE 180x32

INCL. CONTROLLER PT6520 FOR 8-BIT BUS

EA DIP180B-5NLW
Dimension 102 x 27 mm

FEATURES

* HIGH CONTRAST LCD SUPERTWIST DISPLAY
* BLUE-WHITE WITH BRIGHT BACKLIGHT: EA DIP180B-5NLW
* CONTROLLER PT6520 OR COMPATIBLE IS BUILT-IN
* DIRECT INTERFACE TO 8-BIT DATA BUS
* POWER SUPPLY +5V / -3.3V max. 800µA
* LED BACKLIGTH WHITE max. 45mA@+25°C
* MORE MODULES MADE IN SAME TECHNOLOGY:
    - DOTMATRIX 1x8, 2x16, 4x20
    - GRAPHIC 122x32, 128x64 AND 240x128
* NO MOUNTING REQUIRED: JUST SOLDER INTO PCB
* DETACHABLE VIA SOCKET EA B200-9 (2 PCS. ARE REQUIRED)
* OPERATING TEMPERATURE RANGE -20..+70°C WITH
* BUILT-IN TEMPERATURE COMPENSATION

ORDERING CODE

LCD GRAPHIC MODULE 180x32 WITH LED BACKLIGHT	**EA DIP180B-5NLW**
SAME, BUT WITH TOUCHPANELK, ANALOG 4-WIRE	**EA DIP180B-5NLWTP**
9-PIN SOCKET 4.3mm, pitch 2.0mm (1 PC.)	**EA B200-9**
ZIF-STECKER 1.0MM TO CONNECT TOUCHPANEL	**EA WF100-04T**

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EA DIP180-5NLW
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PINOUT

Pin	Symbol	Level	Funktion	Pin	Symbol	Level	Funktion
1	VSS	L	Stromversorgung 0V (GND)	10	D3	H / L	Display Data
2	VDD	H	Stromversorgung +5V	11	D4	H / L	Display Data
3	VEE	-	Kontrastspg. (ca. -3,3V)	12	D5	H / L	Display Data
4	A0	H / L	Umschaltung Befehl / Daten	13	D6	H / L	Display Data
5	R/W	H / L	H=Read, L=Write	14	D7	H / L	Display Data, MSB
6	E1	H	Enable Spalte 1..60	15	E2	H	Enable Spalte 61..120
7	D0	H / L	Display Data, LSB	16	RES	L	Reset
8	D1	H / L	Display Data	17	E3	H	Enable Spalte 121..180
9	D2	H / L	Display Data	18	C	-	LED (ext. Vorwiderstand!)

CONTROLLER PT6520

The display EA DIP180-5 is featuring 3 controller PT65520 or compatible (for the left, middle and right third of display).

The PT6520 is a full graphic controller without text function. Various character set are supplied on the disc EA DISKFONT1520 which is available as an accessory.

Achtung !
Handhabungs-vorschriften beachten

Elektrostatisch gefährdete Bauelemente

A detailed descrition for the commands and the interface timing you can find in the useer manual for PT6520 / SED1520*).

Column address

0 - - - - - - - - - - - - - - - - 79

D0 ∼ D7	Page 0
D0 ∼ D7	Page 1
D0 ∼ D7	Page 2
D0 ∼ D7	Page 3

Instructions	Code											Function
	A0	RD	WR	D7	D6	D5	D4	D3	D2	D1	D0	
Display ON/OFF	0	1	0	1	0	1	0	1	1	1	0/1	Turns Display on or off. 0=OFF; 1=ON;
Display start line	0	1	0	1	1	0	Display start address (0 - 31)					Specifies RAM line corresponding to top of display.
Set page address	0	1	0	1	0	1	1	1	0	Page (0-3)		Sets display RAM page.
Set Column address	0	1	0	0	Column address (0 - 79)							Sets display RAM column address.
Read Status	0	0	1	BUSY	ADC	ON/OFF	RESET	0	0	0	0	Read the following status: BUSY: 1=Busy; 0=Ready; ADC: 1=CW output; 0=CCW output; ON/OFF: 1=Display off; 0=Display on; RESET: 1=Being reset; 0=Normal;
Write display data	1	1	0	Write data								Writes data into display RAM.
Read display data	1	0	1	Read data								Reads data from display RAM.
Select ADC	0	1	0	1	0	1	0	0	0	0	0/1	0=CW output; 1=CCW output;
Static drive ON/OFF	0	1	0	1	0	1	0	0	1	0	0/1	Selects static driving operation. 0=Normal driving; 1=Static drive;
Select duty	0	1	0	1	0	1	0	1	0	0	0/1	Select duty cycle. 0=1/16; 1=1/32;
Read-Modify-Write	0	1	0	1	1	1	0	0	0	0	0	Read-modify-write ON
End	0	1	0	1	1	1	0	1	1	1	0	Read-modify-write OFF
Reset	0	1	0	1	1	1	0	0	0	1	0	Software reset.

*) On internet at http://www.lcd-module.de/engpdf/zubehoer/pt6520.pdf

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CONTRAST ADJUSTMENT

Contrast voltage for EA DIP180-5 is ca. -3.3V. That means that with 5V operation the display do need an additional negative voltage.

An automatic temperature compensation is built-in. A manually realign of contrast while operation over various temperatures is no longer required. Furthermore the display is equipped with a Superfast-Liquid, which fast enough even at the very low temperature of -20°C. Response time is typ. 2.5 seconds only.

BACKLIGHT

The built-in backlight requires a current source or an external limiting resistor. Forward voltage for backlight is between 3.0V and 3.6V. Please consider that a current derating is necessary for operating und temperatures above +25°C.

Note that display cannot be read without backlight. But even with some single mA reading is possible. When ambient brightness grows, then backlight brightness need to grow also.
Attention: do never connect the backlight direct to 5V. This will damage the display immediately !

CHARACTER SETS AND FONT EDITOR (ACCESSORY)

With the ordering code EA USBSTICK-FONT a memory stick comes with various character sets. An import function additionally allows to use Windows fonts. With the FontEditor it is easy to generate for example Cyrillic, Greek and Arabic fonts.
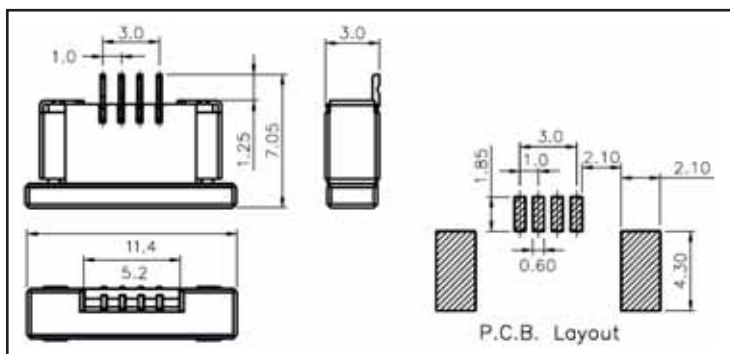
TOUCH PANEL DISPLAY EA DIP180-5LWTP

An analog touch panel is available as an accessory. It has a self-adhesive material on its rear surface and is simply stuck onto the display. The connection is made by means of a 4-pin flexible cable for a ZIF connector (e.g. EA WF100-04T) with a grid of 1.0 mm. Bending radius is defined with min. 5mm.

Interfacing to a processor can be either done by an external touch panel controller or with a controller that is featured with analogue input. The touch panel is similar to a potentiometer: connecting a voltage of e.g. 5V to the pins *Top-Bottom* makes it possible to read out a voltage on pin *Left* or *Right* which is linear to the Y-coordinate of the pressed point. The X-coordinate will result when the voltage will be supplied to *Left-Right* and measurement is done at *Top* or *Bottom*.
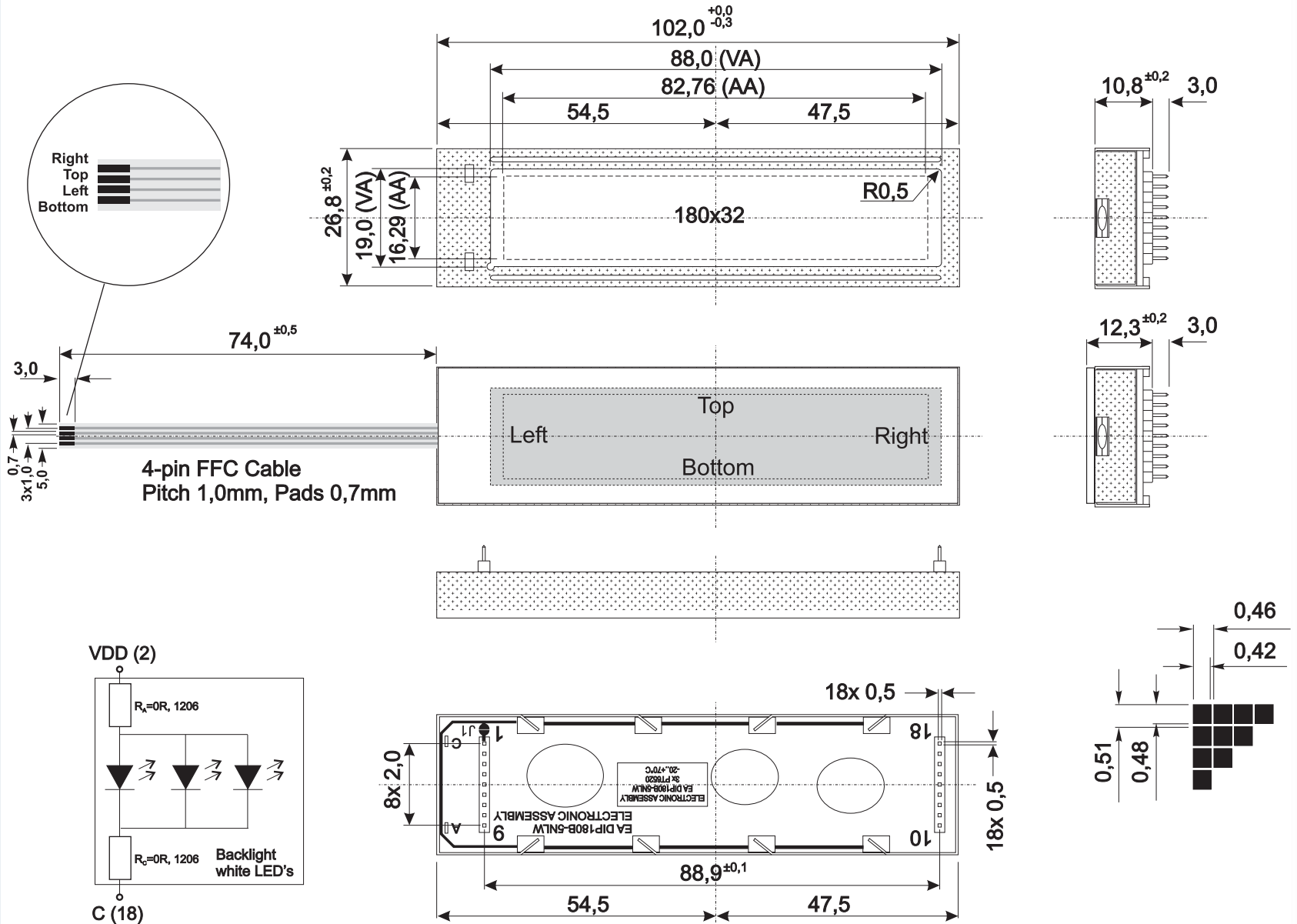The pinout of the connecting cable is shown in the drawing.

Specification			
Specification	min	max	Unit
Top-Bottom	50	200	Ω
Left-Right	250	1000	Ω
Voltage	3	12	V
Current	5	25	mA
Linearity		1,5	%
Force	45	65	g
Contact Bounce	5	10	ms
Op. Temperatur	-20	+60	°C
Stor. Temperatur	-20	+70	°C
Transmission	75	85	%
Life Time	100000		Cycles

P.C.B. Layout

ZIF CONNECTOR EA WF100-04S

As an accessory for the touch panel we do provide a ZIF connector (4 pins) with pitch 1.0mm (SMD type). This connector „bottom side contact" type.

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DIMENSION

Right
Top
Left
Bottom

102,0 +0,0 -0,3

88,0 (VA)

82,76 (AA)

54,5

47,5

10,8 ±0,2   3,0

26,8 ±0,2

19,0 (VA)

16,29 (AA)

R0,5

180x32

12,3 ±0,2   3,0

74,0 ±0,5

3,0

0,7
3x1,0
5,0

4-pin FFC Cable
Pitch 1,0mm, Pads 0,7mm

Top

Left   Right

Bottom

VDD (2)

R_A=0R, 1206

R_C=0R, 1206

Backlight
white LED's

C (18)

18x 0,5

18

8x 2,0

J1

A

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ELECTRONIC ASSEMBLY
EA DIP180B-5NLW
3x PT6520
-20...+70°C

ELECTRONIC ASSEMBLY
EA DIP180B-5NLW

1

10

18x 0,5

88,9 ±0,1

54,5   47,5

0,46

0,42

0,51

0,48

all dimensions are in mm

Note:
- LC-displays are not suited for wave soldering or reflow soldering. Temperatures above +80°C may damage lcd-module.
- Surfaces of display is with protection foil protected against scratching. Please remove before use.