

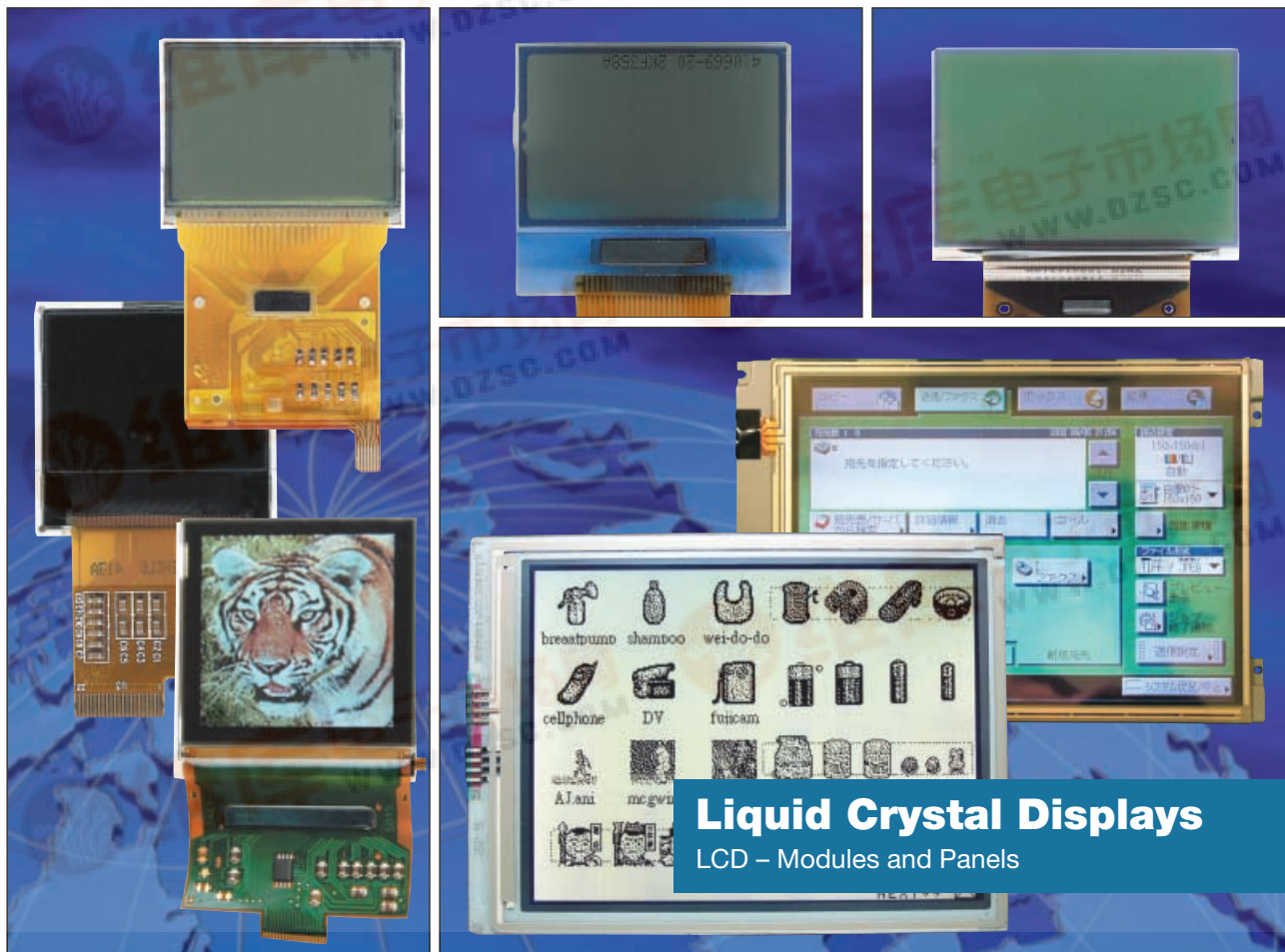
**Elektronik
Bauelemente**

BECK

Quality System

ISO 9001

The Whole World of Components



Liquid Crystal Displays

LCD - Modules and Panels



The Whole World of Components

Liquid Crystal Displays

Please ask our expert

Phone +49 (0)911-9 34 08-0

We are pleased to give you the requested information.



Dot Matrix Modules (Standard Programme)

Display Size (Characters/ Lines)	Model No.	Module Size (w x h x d1/d2) d1/d2 = without/with LED	Viewing Area	Character Size	Duty Rate	Technology				Backlight			Pack- age ¹⁾
						TN	STN grey	STN yellow	FSTN b/w	none	LED	EL	
10 x 3	PVC1003011WL	40.0 x 28.6 x ----/4.4	32.3 x 18.5	2.45 x 3.80	1/23	-	-	-	W	-	L	-	TCP
12 x 4	PVC1204011/2WL	40.0 x 28.6 x ----/4.4	34.0 x 18.5	2.30 x 2.80	1/28	-	-	-	W	-	L	-	TCP
16 x 1	PVC160101*□□	80.0 x 36.0 x 9.5/13.5	64.5 x 14.0	3.07 x 6.56	1/16	T	G	Y	-	N	L	E	PCB
16 x 1	PVC160104*□□	122.0 x 33.0 x 9.5/13.0	99.0 x 13.0	4.84 x 8.06	1/16	T	G	Y	-	N	L	E	PCB
16 x 2	PVC160202*□□	80.0 x 36.0 x 9.5/13.0	64.5 x 13.8	2.95 x 4.75	1/16	T	G	Y	-	N	L	E	PCB
16 x 2	PVC160203*□□	84.0 x 44.0 x 9.5/13.0	61.0 x 16.1	2.95 x 5.55	1/16	T	G	Y	-	N	L	E	PCB
16 x 2	PVC160204*□□	85.0 x 36.0 x 9.5/13.0	65.0 x 17.4	2.96 x 5.56	1/16	T	G	Y	-	N	L	E	PCB
16 x 2	PVC160205*□□	122.0 x 44.0 x 9.5/13.0	99.0 x 24.0	4.84 x 9.66	1/16	T	G	Y	-	N	L	E	PCB
16 x 2	PVC160206*□□	85.0 x 30.0 x 9.5/13.0	62.0 x 16.0	2.78 x 4.89	1/16	T	G	Y	-	N	L	E	PCB
16 x 4	PVC160401*□□	87.0 x 60.0 x 9.5/13.0	61.8 x 25.2	2.95 x 4.75	1/16	T	G	Y	-	N	L	E	PCB
20 x 2	PVC200202*□□	116.0 x 37.0 x 9.5/15.7	83.0 x 18.6	3.20 x 5.55	1/16	T	G	Y	-	-	L	E	PCB
20 x 2	PVC200203*□□	116.0 x 37.0 x 9.5/13.0	83.0 x 18.6	3.20 x 5.55	1/16	T	G	Y	-	N	L	E	PCB
20 x 4	PVC200401*□□	98.0 x 60.0 x 9.5/-----	76.0 x 25.2	2.95 x 4.75	1/16	T	G	Y	-	N	-	E	PCB
20 x 4	PVC200403*□□	98.0 x 60.0 x --- /14.0	76.0 x 25.2	2.95 x 4.75	1/16	T	G	Y	-	-	L	-	PCB
24 x 2	PVC240201*□□	118.0 x 36.0 x 9.5/-----	93.5 x 16.0	3.20 x 5.55	1/16	T	G	Y	-	N	-	E	PCB
24 x 2	PVC240202*□□	118.0 x 36.0 x 9.5/14.0	93.5 x 16.0	3.20 x 5.55	1/16	T	G	Y	-	N	L	E	PCB
40 x 2	PVC400201*□□	182.0 x 33.5 x 9.5/13.0	154.5 x 16.5	3.20 x 5.55	1/16	T	G	Y	-	N	L	E	PCB
40 x 4	PVC400401*□□	190.0 x 54.0 x 9.5/13.0	147.0 x 29.5	2.78 x 4.89	1/16	T	G	Y	-	N	L	E	PCB

Manufacturer: PICVUE ELECTRONICS, LTD.

1) PCB = Printed Circuit Board
TCP = Tape Carrier Package (controller-chip on carrier foil)

Model No.
Key:

PVC 16 01 ** □ □

| | | | |
 | | | | | Backlight Identification Character
 | | | | | Technology Identification Character
 | | | | | Series No.
 | | | | | Lines
 | | | | | Characters per line
 | | | | | PICVUE Character Module

**Elektronik
Bauelemente**

BECK

Dot Matrix Modules (Complementary Programme)



Display Size (Characters/ Lines)	Model No.	Module Size (w x h x d1/d2) d1/d2 = without/with LED	Viewing Area	Character Size	Duty Rate	Technology TN	STN grey	STN yellow	FSTN b/w	Backlight none	LED	EL	Fea- tures
						Identification Character				Ident. Character			
8 x 2	AC082A	58.0 x 32.0 x 10.0/13.8	35.0 x 15.0	2.95 x 5.55	1/16	N	G	Y	-	A	L	-	
8 x 2	TM82A	58.0 x 32.0 x 12.0/13.1	35.0 x 15.0	2.45 x 5.00	1/16	A	D	B	-	A	C	-	5.0V
16 x 1	AC161J	151.0 x 40.0 x -----/14.7	120.0 x 23.0	6.00 x 14.5	1/16	N	G	Y	-	A	L/Q	E	big
16 x 2	AC162A	85.0 x 29.5 x 10.0/14.5	64.0 x 17.2	2.95 x 5.55	1/16	N	G	Y	-	A	L/Q	E	3.3V*
16 x 2	AC162B	80.0 x 36.0 x 10.0/14.5	64.0 x 17.2	2.95 x 5.55	1/16	N	G	Y	-	A	L/Q	E	3.3V*
16 x 2	AC162C	80.0 x 36.0 x 10.0/14.5	64.0 x 17.2	2.95 x 5.55	1/16	N	G	Y	-	A	L/Q	E	3.3V*
16 x 2	AC162D	84.0 x 44.0 x 10.0/14.5	64.0 x 17.2	2.95 x 5.55	1/16	N	G	Y	-	A	L/Q	E	3.3V*
16 x 2	AC162E	122.0 x 44.0 x 10.5/14.5	99.0 x 24.0	4.84 x 8.06	1/16	N	G	Y	-	A	L/Q	E	3.3V*
16 x 2	TM162X	53.0 x 20.0 x 8.1/-----	36.0 x 10.0	1.85 x 3.15	1/16	A	D	B	-	A	-	-	mini
16 x 4	AC164A	87.0 x 60.0 x 11.0/14.0	61.4 x 25.0	2.95 x 4.75	1/16	N	G	Y	-	A	L	E	3.3V*
16 x 4	EDM1604B	115.0 x 70.0 x 10.0/-----	88.0 x 44.2	4.45 x 8.95	1/16	√	√	√	-	√	-	-	big
20 x 1	TM201A	182.0 x 33.5 x 12.7/15.0	154.3 x 15.3	6.70 x 11.5	1/16	A	D	B	-	A	C	-	big
20 x 2	AC202A	116.0 x 37.0 x 10.0/14.5	83.0 x 18.5	3.20 x 5.55	1/16	N	G	Y	-	A	L/Q	E	3.3V*
20 x 2	AC202B	180.0 x 40.0 x 9.5/15.0	149.0 x 23.0	6.00 x 9.66	1/16	N	G	Y	-	A	L/Q	E	3.3V*
20 x 2	AC202D	182.0 x 60.0 x -----/14.0	147.0 x 35.2	5.90 x 12.7	1/16	-	-	Y	-	-	L	-	big
20 x 4	AC204A	97.2 x 60.0 x 10.5/14.5	76.0 x 25.2	2.95 x 4.75	1/16	-	G	Y	-	-	L/Q	-	3.3V*
20 x 4	AC204B	146.0 x 62.5 x 10.5/14.5	123.0 x 42.5	4.84 x 9.22	1/16	-	G	Y	-	A	L	E	3.3V*
24 x 1	TM241A	118.0 x 36.0 x 11.0/15.0	93.5 x 15.8	3.20 x 8.20	1/16	A	D	B	-	A	C	-	big
24 x 4	EDM2404A	119.4 x 56.9 x 10.0/---	91.2 x 29.9	2.95 x 5.55	1/16	√	√	√	-	√	-	-	big
24 x 8	EDM2408A	120.5 x 81.5 x 10.0/---	91.8 x 52.3	3.20 x 5.55	1/36	-	√	√	-	√	-	-	big
80 x 4	EDM8004A	289.0 x 88.0 x 10.0/---	227.0 x 34.0	2.38 x 5.42	1/36	-	√	√	-	√	-	-	big

Manufacturer: AC/AD = AMPIRE CO., LTD.,
EDM = DALIAN DONGFU COLOR DISPLAY CO., LTD.,
TM = TIANMA MICROELECTRONICS CO., LTD.

Q = white or blue LED backlight (height 11.0 mm)
*optionally 3.3 V or 4.5 V



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Manufacturer: PICVUE ELECTRONICS, LTD.

PCB = Printed Circuit Board
TCP = Tape Carrier Package (controller IC on carrier foil)
DC/DC = with DC/DC converter available (single supply voltage)

Model No. PVG 12 06 ** * ☐☐

Key:

PVG 12 06 ** □ □

Backlight Identification Character
Technology Identification Character
Series No.

Lines
Columns

PICVUE Graphic Module

Graphic Modules (Complementary Programme)



Display Size (Columns/ Lines)	Model No.	Module Size (w x h x d1/d2) d1/d2 = without/with LED	Viewing Area	Duty Rate	Technology STN STN FSTN grey yellow b/w Ident. Character	Backlight LED EL CCFL Ident. Character	Controller	Comments
96 x 32	AF09632B	37.8 x 19.0 x 1.6/---	33.0 x 13.2	1/32	- - F	- - -	NT7501	COF, 3.3V
112 x 64	AF11264C	39.0 x 29.4 x ---/4.5	33.6 x 22.3	1/65	- - F	L - -	S6B1713	COF, 3.0V
122 x 32	AG12232A	84.0 x 44.0 x 10.5/15.5	60.5 x 18.5	1/32	G Y F	L E -	SED1520	dual power
122 x 32	AG12232B	65.8 x 27.1 x 4.7/8.4	60.5 x 18.5	1/32	G Y F	L E -	SED1520	dual power
122 x 32	TM12232A	84.0 x 44.0 x 9.5/13.5	60.0 x 18.5	1/32	D B C	L - -		dual power
122 x 32	TM12232E	69.2 x 31.8 x 8.0/11.0	57.2 x 17.2	1/32	D B C	L - -		dual power
128 x 64	AG12864E	75.0 x 52.7 x 6.8/9.0	60.0 x 32.5	1/64	G Y F	L/Q - -	KS0108	DC/DC
128 x 64	AO12864T	57.0 x 39.4 x 1.9/---	52.6 x 27.5	1/65	- - F	- - -	ST7565	COG, 3.3V
128 x 64	AT12864I	58.0 x 38.5 x 1.9/---	54.0 x 31.0	1/65	- - F	- - -	SED1565	TCP, 3.0V
128 x 64	AT12864M	65.9 x 46.6 x ---/5.5	60.0 x 39.0	1/65	- - F	L - -	SED1565	TCP, 3.0V
128 x 128	AF128128C2	36.3 x 38.9 x 1.4/---	30.5 x 32.0	1/128	- - F	- - -	HD66750	COF, 3.3V
128 x 128	AT128128H1	36.3 x 38.9 x 1.4/---	30.5 x 32.0	1/128	- - F	- - -	HD66750	TCP, 2.8V
128 x 128	AF128128K	72.4 x 70.0 x ---/5.5	54.0 x 50.0	1/128	- - F	L - -	HD66750	COF, 2.8V
128 x 160	AF128160A	57.8 x 42.0 x ---/2.2	37.0 x 48.6	1/160	- - F	- E -	UC1611	COF, 3.0V
132 x 65	AT13265B	54.2 x 33.8 x 2.4/---	50.0 x 28.3	1/65	- - F	- - -	SED1565	TCP, 3.0V
160 x 80	AG16080A/B	100.0 x 54.0 x 11.3/15.3	72.3 x 37.8	1/80	G Y F	L/Q E -	T6963C	DC/DC
160 x 128	AF160128A	55.8 x 46.9 x 2.5/2.5	51.8 x 40.4	1/128	- - F	- E -	SED15E06	COF, 2.7V
160 x 128	TM160128A	129.0 x 102.0 x 12.8/---	101.0 x 82.0	1/128	D B C	- - -	T6963	dual power
160 x 160	AT160160A	69.0 x 69.5 x 6.0/7.0	60.0 x 60.0	1/160	- - F	Q E -	SED1335*	Touch*, DC/DC
160 x 240	AT160240B1	70.0 x 90.5 x 4.8/---	58.9 x 77.8	1/240	- - F	- - -		dual power
240 x 128	AG240128A/C/G	144.0 x 104.0 x 12.0/15.0	114.0 x 64.0	1/128	G Y F	IL/Q E -	T6963C*	DC/DC
240 x 128	AG240128B	170.0 x 103.2 x 14.0/14.0	132.0 x 76.0	1/128	G Y F	- E C	T6963C	DC/DC
240 x 160	AT240160B	76.0 x 57.0 x 6.0/7.0	67.6 x 47.5	1/160	- - F	- E -	SED1335*	Touch*, DC/DC
240 x 160	AT240160D	83.8 x 56.2 x 2.5/3.3	61.6 x 42.5	1/160	- - F	- E -		Touch*, DC/DC
240 x 160	AF240160E	81.0 x 54.0 x ---/5.5	63.0 x 42.5	1/160	- - F	L - -	UC1611	COF, 2.8V
240 x 320	AT240320A	72.5 x 90.0 x 5.5 /---	62.0 x 81.8	1/240	- - F	- E -		TCP, dual power
320 x 240	AG320240A1	167.1 x 109.0 x 11.0/11.0	122.0 x 92.0	1/240	G Y F	- - C		Touch*
320 x 240	AG320240F	160.0 x 109.0 x 11.0/11.0	122.0 x 92.0	1/240	G Y F	- E C	SED1335*	Touch*, DC/DC
320 x 240	AT320240Q	93.3 x 73.0 x 6.4/9.1	62.0 x 81.8	1/240	- - F	Q E -	SED1335*	Touch*, 3.3V*
320 x 240	TM320240A	143.0 x 96.8 x 12.0/---	104.0 x 79.3	1/240	D B C	- - -		dual power

Manufacturer: AD/AG/AT = AMPIRE CO., LTD.,
TM = TIANMA MICROELECTRONICS CO., LTD.

TCP = Tape Carrier Package (controller IC on carrier foil)
COG = Chip On Glass
COF = Chip On Foil
DC/DC = with DC/DC converter available (single supply voltage)

Q = white LED backlight
*optionally



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PICVUE

Passive Colour LCD (Colour STN)

Display Format (Columns/ Lines)	Model No.	Active Area Size Diagonal	Module (w x h x d1/d2) d1/d2 = without/with LED	Viewing Area	Backlight	Comments
96 x 64	PVG090601HCL	1,06"	30,3 x 29,4	24,0 x 16,7	LED white	transflective, 4k colours, Ctrl. IST3101
240 x 160	PVG241601HCL	1,4"	67,6 x 34,1	32,8 x 25,4	LED white	transmissive, 4k colours
128 x 128	PVG121205HCL	1,6"	36,0 x 44,2	32,7 x 29,3	LED white	transmissive, 65k colours, S6B33B0
128 x 128	AR128128MCIQW-H	1,7"	40,4 x 40,3	32,7 x 32,7	LED white	transflective, 4k colours, S1D15G10
128 x 128	PVG121204HCL	1,75"	38,5 x 63,2	33,4 x 33,4	LED white	transmissive, 65k colours, S6B33B0
128 x 160	PVG121604HCL	1,8"	34,7 x 48,7	36,0 x 30,5	LED white	transmissive, 65k colours, S6B33B0
128 x 160	PVG1216061CL	1,88"	40,1 x 55,5	32,0 x 39,4	LED white	transmissive, 65k colours, S6B33B0
128 x 160	PVG1216011CL	1,88"	38,9 x 61,0	32,0 x 39,4	LED white	transflective, 65k colours, S6B33B0
128 x 160	PVG1216031CL-0511	1,9"	38,5 x 51,9	42,4 x 33,1	LED white	transflective, 4k colours, HM17CM4096
128 x 160	PVG1216031CL-0681	1,9"	38,5 x 51,9	42,4 x 33,1	LED white	transflective, 65k colours, AR3302
160 x 160	PVG161605HCL	2,6"	62,2 x 76,8	51,3 x 51,3	LED white	transflective, 65k colours, driver only
160 x 160	PVG161606HCL	2,7"	74,6 x 62,1	52,0 x 52,0	LED white	transflective, 65k colours, touch, driver only
240 x 320	PVG322403HCL	3,1"	60,0 x 78,8	49,0 x 71,3	LED white	transflective, 65k colours, touch, driver only
240 x 320	PVG3224051CC	4,0"	76,8 x 100,5	62,8 x 82,8	CCFL	transmissive, 65k colours, touch, driver only
320 x 240	AR320240GRTCW	5,7"	154,6 x 114,8	118,2 x 89,4	CCFL	transflective, 4k colours, driver only
320 x 240	PVG322406HCC	5,7"	154,6 x 114,8	118,0 x 89,4	CCFL	transmissive, 65k colours, driver only
640 x 480	PVG6448011CC	8,2"	203,0 x 142,5	167,0 x 125,3	CCFL	transmissive, 65k colours, touch, driver only

Manufacturer: AR = AMPIRE CO., LTD.

PVG = PICVUE ELECTRONICS, LTD.

Customer Specified Panels and Modules



LCD Technologies

• Monochrome:	TN	Twisted Nematic	For duty rate up to 1/16 (segment displays)
	HTN	High Twisted Nematic	For duty rate 1/8...1/16 (segment displays)
	STN	Super Twisted Nematic	For duty rate from 1/16 (graphic displays)
		"grey mode"	For white backlight (LED, CCFL, EL)
		"yellow mode"	For LED backlight (yellow-green)
	FSTN	Film Compensated STN	For displays with high resolution, fine structures
	TDF	"black/white mode"	For white backlight (LED, CCFL, EL)
		Transflective Diffusor Film	For displays with highest demands on readability
		"paper white"	
• Colour:	Colour STN		

Assembling Techniques Glass to Controller/ Driver

• Pins	For contact density from 2.0 mm
• Zebra	For contact density from 0.4 mm
• Heatseal	For contact density from 0.2 mm
• TCP (Tape Carrier Package, Controller on Carrier Foil)	Very compact design
• COG (Chip On Glass)	Very compact design
• COF (Chip On Foil)	Very compact, passive components included

Backlight

• LED (Light Emitting Diodes)	For small and middle displays – all colours, white
• EL (Electroluminescence Foil)	For small, middle and big displays
• CCFL (Cold Cathode Fluorescence Lamp)	For big displays

We find the optimal solution for each application – contact us with your concerns. Experienced experts are ready to advise you.