# imall

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!



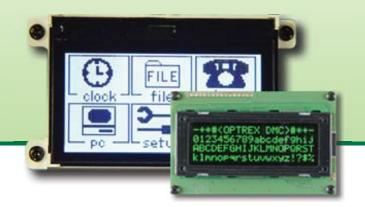
## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832 Email & Skype: info@chipsmall.com Web: www.chipsmall.com Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





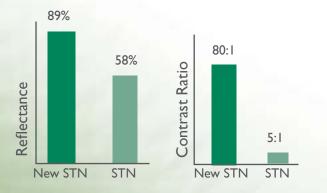
## Monochrome Graphic & Character LCDs



Kyocera passive LCD products deliver remarkable readability in any ambient light environment condition, with exceptional performance over a wide operating temperature range. Multiple LED colors are available to choose from to meet your application needs.

#### A Higher Standard for STN

- Wide operating temperature (-20 to +70°C) standard
- High contrast ratio up to 80:1
- High brightness up to 100 nits
- High ambient-light legibility
- Built-in controllers
- Selectable interface



#### **ODV** and **ABN**

These technologies achevied superior front screen performance, such as very high contrast ratio (500:1), and wide viewing angle, that is comparable to VFD (Vaccum Fluorescent Displays).

#### **Range of Colors**

A wide variety of colors are available to suit every application.

#### **RoHS Compliant\***

All modules are built in complete compliance with the European Union's RoHS (Reduction of Hazardous Substances) directive that restricts the use of certain substances such as lead, mercury and cadmium in electronic equipment.

## **Technology in Passive LCDs**

ODV and ABN acheive superior front screen performance that is comparable to VFD, but have advantage of low power consumption and high resolution.



## **ODV(Omni-Directional View)**

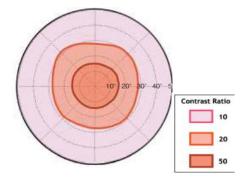
High contrast LCD with black background and high visibility from any direction.

ODV achieves high light shielding and dramatically improved color performance comparing to TN/STN.

High contrast and wide viewing angle enables sophisticated design for varieties of application.

#### Features:

- Improvement of light shielding on background and achromatic enables to pure black background.
- High contrast from every direction
- Minimum color shift from low temp to high temp, achieved the high performance.



#### **Applications**

audio, automotive, measurement, electric appliance, meters, POS.

### 20 x 2 Character Module

#### ABCDEFGHIJKLMNOPQRST 01234567890123456789

High contrast LCD with black background and high visibility from any direction.

Part #	C-55605GNFU-LW-ADN
Dot size (mm)	0.59 (W) × 1.15 (H)
Font size (mm)	I character = 7 x 9 dots, 4.43 (W) x 10.75 (H)
Active area (mm)	10.76 (W) × 26.5 (H)
Outline dimention (mm)	131.8 (W) × 48.8 (H) × 8.3 (D)
Interface	8-bit 68- 80- system parallel interface

## **ABN (Advanced Black Nematic)**

Pursued black background. extremely high contrast type LCD.

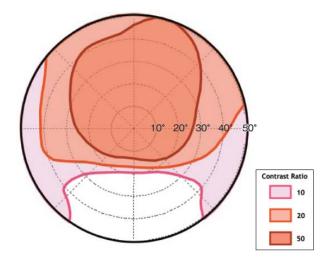
ABN as KYOCERA new development LCD mode achieves light shielding and achromatic color compared to TN/STN. Very high contrast from perpendicular and it enables highest performance in visibility.

#### Features:

- Improvement of light shielding on background and achromatic enables to pure black background.
- High contrast from perpendicular.
- Minimum color shift from low temp to high temp, achieved the high performance.

#### Example of Applications

Audio, automotive, measurement, electric appliance, meters, POS, etc.



#### **Development:**

Started from segment type ODV, ABN. In order to meet mareket needs, KYOCERA has been seveloping higher resolution and higher performance LCD.



Seven Segment LCD

Character LCD

Graphic LCD

### KYOCERA Display America, Inc.

Graphic LCDs				F-55472		240×64 Dots ? Copy :	
Part #	Size	Color Background	Dot Format	Brightness (nits)	Dimension (mm)	Temperature (C)	Interface
MG780	2.4"		120 × 32	25-60	78.0 × 33.2 × 8.5	0 to 70	8- bit Parallel
F-51320	2.8"		128 × 64	60-100	89.7 x 49.8 x 11.8	0 to 50	Parallel
F-55472	2.8"		128 × 64	60 -200	89.7 x 49.8 x 6	0 to 70	8-bit Parallel or Serial
F-51854	4.7	Phone J	160 x 128	40	129.0 × 102.0 × 13.5	-20 to 70	8-bit Parallel
DMF-5001	4.7"		160 x 128	40	129.0 × 102.0 × 12.8	0 to 50	8-bit Parallel
F-51477	4.7"		320 × 240	150*	116.4 × 94.0 × 6.0	0 to 50	4-bit Parallel
F-55471	5.2"		240 × 64	60 -100	135.2 × 51.7 × 9.8	-20 to 70	8-bit Parallel
F-51405	5.2"		240 × 64	50 - 200	135.2 × 51.7 × 9.8	-20 to 70	8-bit Parallel
F-55157	5.7"		320 × 240	150	143.3 × 109.0 × 11.0	0 to 60	4-bit Paralle
DMF-50840	5.7"		320 × 240	50-60	67.  x  09.0 x   .0	0 to 60	4- bit Paralle

\*" Brightness is measured at the backlight surface

**Character LCDs** 

-++#COPTREX DMC>#++-	
B123456789abcdef9h13 ABCDEFGHIJKLMNOPORST	
KINDPARSCUUMX92178%	



C-51847

C-51505

**Detailed Product Information** 

www.Kyocera-display.com/products

Part #	Format	Size	Color	Module Dimension (mm)	Interface
C-51848	16 x 2	4.0"	W G B	122.0 x 44.0 x 14.6	8-bit Parallel
DMC-16202	16 x 2	2.5"	Y	84.0 × 45.0 × 15.1	8- bit Parallel
C-51505	20 × 2	3.3"	W G B B B	116.0 × 37.0 × 15.7	8-bit Parallel
DMC-20261	20 × 2	3.3"	Y	116.0 × 37.0 × 15.7	8-bit parallel
C-51847	20 × 4	3.0"	W G B	98.5 × 61.0 × 15.6	8-bit Parallel
C-51850	40 x 2	6.0"	W G B	182.0 × 34.5 × 15.1	8-bit Parallel
C-51849	40 x 4	5.9"	W G B	190.0 × 54.0 × 14.6	8-bit Parallel

KYOCERA Display America, Inc. 46723 Five Mile Road Plymouth, Michigan 48170

Telephone: (734) 416-8500 Fax: (734) 416-8520

Released Sept 2011| Copyright © 1998-2012 KYOCERA Display America, Inc.

These specifications are subject to change without notice. Please check with KYOCERA Display America prior to designing equipment using this

\* RoHS compliance is based upon KYOCERA Display America's understanding of RoHS and KYOCERA America's knowledge of the materials used by the manufacturer in its products.

All trademarks are the property of their respective owners.

#### www.kyocera-display.com

Page 4