

Philips Components

Data sheet	
status	Product specification
date of issue	July 1990

# LTD221

## Liquid crystal display

T-41-38

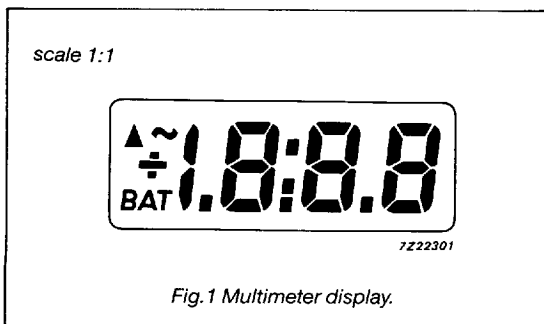
**DEVICE DESCRIPTION**

The LTD221 is a 3 1/2-digit, 7-segment multi-function LCD with additional indicators. Typical applications include multimeters and panelmeters.

**QUICK REFERENCE DATA**

Viewing area dimensions	46.8 x 18.4 mm
Overall glass dimensions	50.8 x 30.4 mm
Thickness	2.7 +/- 0.4 mm
Digit height	12.7 mm
Preferred viewing direction	6 o'clock
Driving method	direct drive

**DISPLAY MODE**



**TYPE DEPENDENT CHARACTERISTICS (1)**

TYPE	ILLUMINATION MODE	CONNECTION METHOD	RELIABILITY GRADE	FAMILY (2) CHARACTERISTICS	OPERATING VOLTAGE
LTD221R-11	reflective	for conductive rubber	commercial	TR0	3.5 - 6.5
LTD221R-12	reflective	with fixed pins	commercial	TR0	3.5 - 6.5
LTD221F-12	transflective	with fixed pins	commercial	TF0	3.5 - 6.5
LTD221R-22	reflective	with fixed pins	extended	TR2	3.4 - 6.5
LTD221F-22	transflective	with fixed pins	extended	TF2	3.5 - 6.5

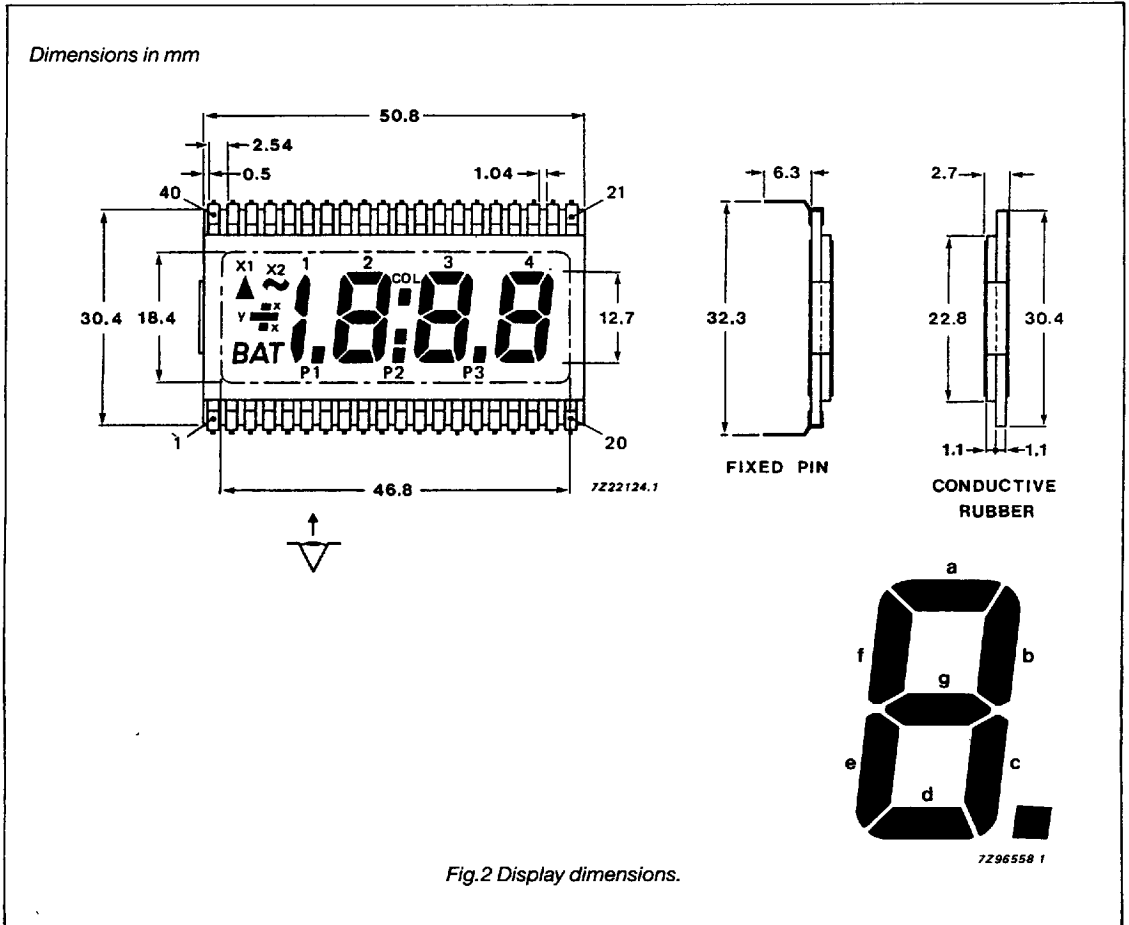
Note: (1) drive method = direct drive for all types

(2) see chapter "Family Characteristics for complete specification"

Liquid crystal display

LTD221

MECHANICAL DATA



## Liquid crystal display

LTD221

## PIN DESCRIPTION

PIN NO.	SEGMENT	PIN NO.	SEGMENT
1	comm	21	a3
2	y	22	f3
3	x3	23	g3
4	nc	24	b2
5	nc	25	a2
6	nc	26	f2
7	nc	27	g2
8	p1	28	col
9	e1	29	b1
10	d1	30	a1
11	c1	31	f1
12	p2	32	g1
13	e2	33	nc
14	d2	34	nc
15	c2	35	nc
16	p3	36	nc
17	e3	37	x2.
18	d3	38	x1.
19	c3	39	x
20	b3	40	BAT

## RATINGS

Limiting values in accordance with Absolute Maximum System (IEC 134)

Maximum voltage between any two contacts (see note)

 $V_{max}$ 

15 V RMS

Note: maximum DC component = 0.1 V

TYPE	RELIABILITY TESTS		
	Damp heat steady state $T_{amb}/R.H./duration$	Low temperature storage $T_{amb}/duration$	High temperature storage $T_{amb}/duration$
LTD221R-11	+40 °C/90%/21 days	-25 °C/21 days	+70 °C/21 days
LTD221R-12	+40 °C/90%/21 days	-25 °C/21 days	+70 °C/21 days
LTD221F-12	+40 °C/90%/21 days	-25 °C/21 days	+70 °C/21 days
LTD221R-22	+80 °C/90%/21 days	-40 °C/21 days	+85 °C/21 days
LTD221F-22	+80 °C/90%/21 days	-40 °C/21 days	+85 °C/21 days