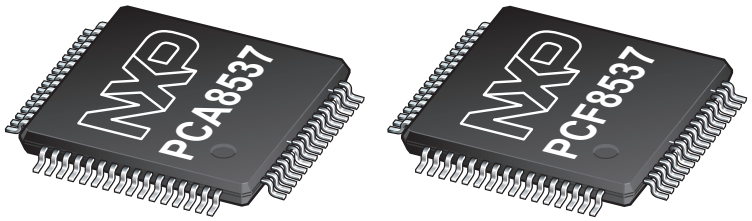


NXP LCD drivers PCA8537 and PCF8537 for 352 segments

Low-power, single-chip LCD controller/ drivers for automotive and industrial

These fully featured LCD drivers are specifically designed for high-contrast vertical alignment (VA) LCDs with multiplex rates up to 1:8.

Key features

- Up to 352 elements for driving up to
  - 44 seven-segment numeric characters
  - 22 fourteen-segment alphanumeric characters
- AEC-Q100 compliance (PCA8537)
- Selectable backplane driver configuration: static, 2, 4, 6, or 8 backplane multiplexing
- Software-programmable internal charge pump for on-chip LCD voltage generation with internal capacitors
- 400 kHz I^2C (AH versions) or 5 MHz SPI (BH versions) interface
- Programmable temperature compensation of V_{LCD} in four regions
- Selectable display bias configurations
- Wide range of digital power supply: 1.8 to 5.5 V
- Wide LCD supply range: from 2.5 V for low-threshold LCDs up to 9.0 V for high-threshold nematic and VA LCDs
- Display memory bank switching in static, duplex, and quadruplex drive modes
- 352-bit RAM for display storage
- Programmable frame frequency from 60 to 300 Hz in steps of 10 Hz (factory calibrated)
- Integrated temperature sensor with temperature readout
- On-chip calibration of internal oscillator frequency and V_{LCD}
- Manufactured in silicon gate CMOS process

Applications

- Industrial
  - White goods
  - Handheld electronics
  - Battery operated equipment
  - Machine control systems
  - Measuring equipment
  - Information boards
  - Panels
  - Consumer
  - Industrial
  - Medical and health care
  - General purpose display modules
- Automotive
  - Instrument cluster
  - Car radio
  - Climate control units

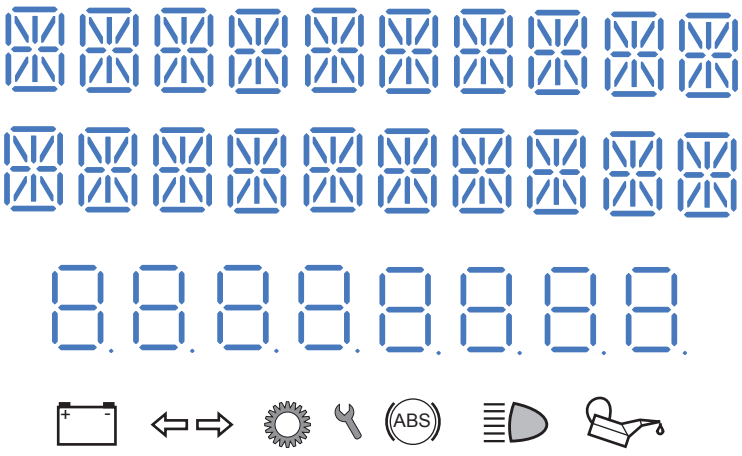
The NXP PCF8537 and PCA8537 generate the drive signals for any static or multiplexed LCD with up to eight backplanes, 46 segments, and 352 elements. The PCA8537 is AEC-Q100 compliant for automotive applications.

Both devices feature an internal charge pump with internal capacitors for on-chip generation of the LCD driving voltage. To ensure an optimal and stable contrast over the full temperature range, they offer programmable temperature compensation of the LCD supply voltage. A two-line I²C bus (in AH versions) or a three-line SPI bus (in BH versions) make the drivers easy to connect to a standard microcontroller.

Ordering information

Type number	Interface type	Application	Package			12NC	Minimum order quantity
			Name	Description	Version		
PCF8537AH	I²C	Industrial	TQFP64	Plastic thin quad flat package; 64 leads; body 10 x 10 x 1.0 mm	SOT357-1	9352 978 97518	1500
PCF8537BH	SPI	Industrial				9352 978 98518	
PCA8537AH	I²C	Automotive				9352 978 95518	
PCA8537BH	SPI	Automotive				9352 978 96518	

The 352 PCx8537 segments (alphanumeric, numeric, and icons)



20 x 14-segment displays
= 280 segments

8 x 7-segment displays + dots
= 64 segments

8 icons

352 segments

www.nxp.com

Date of release: June 2012
Document order number: 9397 750 17304
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