

SL1455

WIDEBAND LINEAR FM DETECTOR WITH THRESHOLD EXTENSION

The SL1455 is a wideband FM demodulator with threshold extension. It is intended for use in satellite receivers with an IF between 300MHz and 700MHz.

FEATURES

- 7dB Noise Threshold Obtainable
- Low External Component Count
- Negligible Differential Gain and Phase Error
- Wide Operating Frequency Range: 300 to 700MHz
- Demodulates FM Signals with up to 28MHz p-p Deviation
- Electrostatic Protection*

* Normal ESD handling precautions should be observed

APPLICATIONS

- DBS Receivers
- Wideband Data Communications Demodulation

ABSOLUTE MAXIMUM RATINGS

| | |
|-----------------------------|-----------------|
| Operating temperature range | -10°C to +80°C |
| Supply voltage | 7V |
| Input voltage | 2.5V p-p |
| Storage temperature | -55°C to +150°C |
| Junction temperature | +175°C |

ORDERING INFORMATION

- SL1455 NA DP (14-lead plastic DIL package)
- SL1455 NA MP (14-lead miniature plastic DIL package)

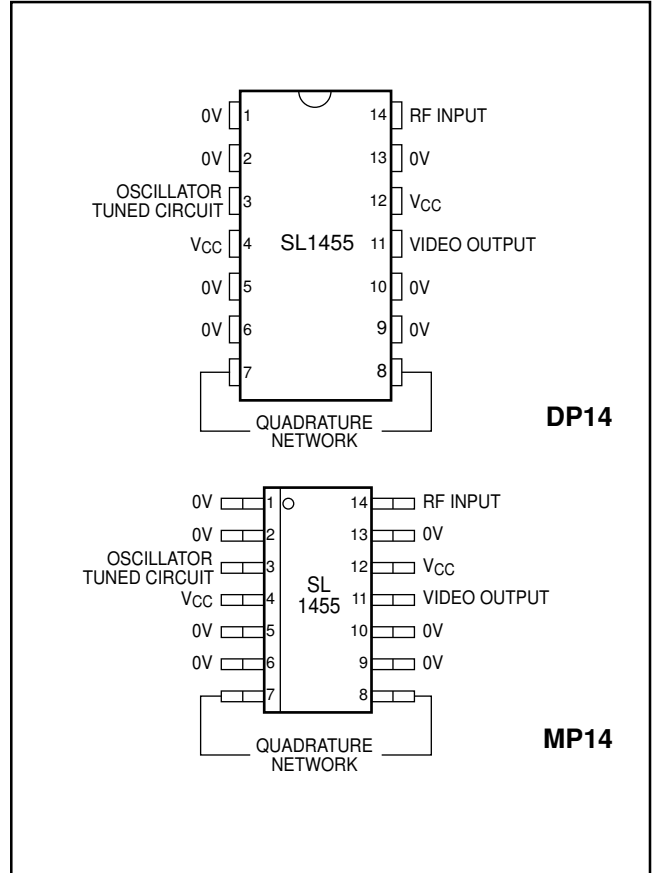


Fig. 1 Pin connections - top view (not to scale)

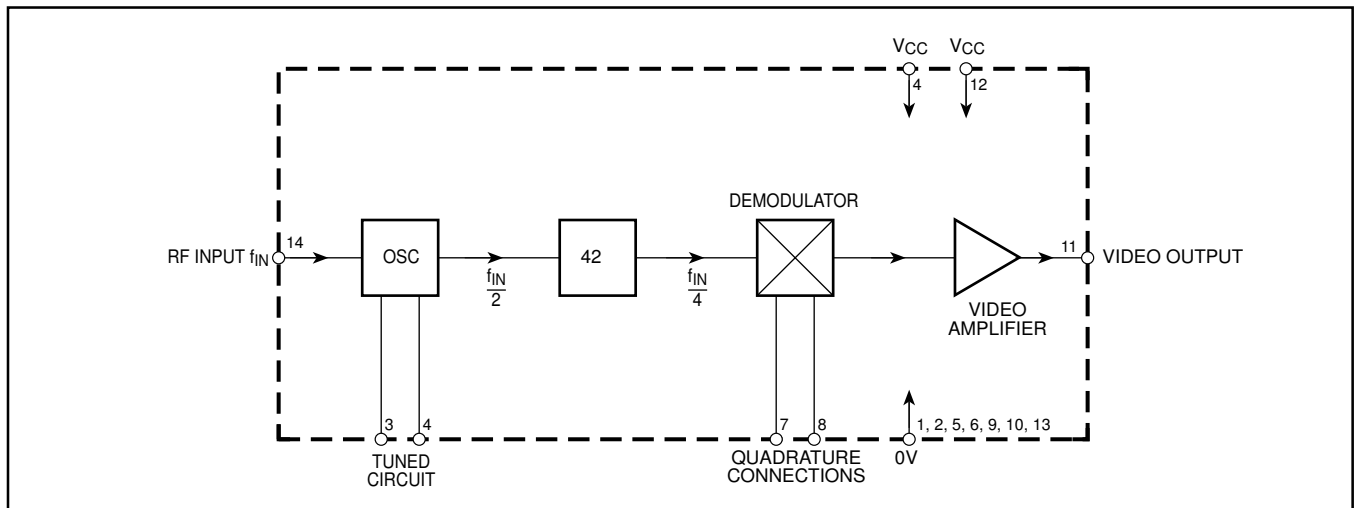


Fig. 2 Block diagram

ELECTRICAL CHARACTERISTICS

These characteristics are guaranteed over the following conditions (unless otherwise stated):

$$T_{AMB} = +25^{\circ}\text{C}, V_{CC} = +4.5\text{V to } +5.5\text{V}.$$

| Characteristic | Pin | Value | | | Units | Conditions |
|--------------------------|------|-------|-----------|------|-------|---|
| | | Min. | Typ. | Max. | | |
| Supply voltage | 12,4 | 4.5 | 5.0 | 5.5 | V | $V_{CC} = 5\text{V}$ $\Delta f = 21.4\text{MHz p-p}$. Demodulated staircase referred to input staircase before modulation. Demodulated colour bar waveform referred to waveform before modulation. |
| Supply current | 12,4 | 25 | 30 | 35 | mA | |
| Differential gain | | | $< \pm 1$ | | % | |
| Differential phase | | | $< \pm 1$ | | Deg | |
| IF range | | 300 | 610 | 700 | MHz | |
| Input level | 14 | | 22 | 400 | mVrms | |
| Noise threshold | | | 7 | | dB | |
| Output level | 11 | | 1.3 | | V p-p | |
| Intermodulation products | 11 | | -60 | | dB | |
| Video bandwidth | | | 10 | | MHz | |

NOTES

1. All characteristics from Noise Threshold to Video Bandwidth are measured using the application circuit Fig. 3.
2. Signal 1: 4.433MHz, deviation = 21.4MHz p-p.
Signal 2: 6MHz, deviation = 3MHz p-p (PAL and sound subcarriers).

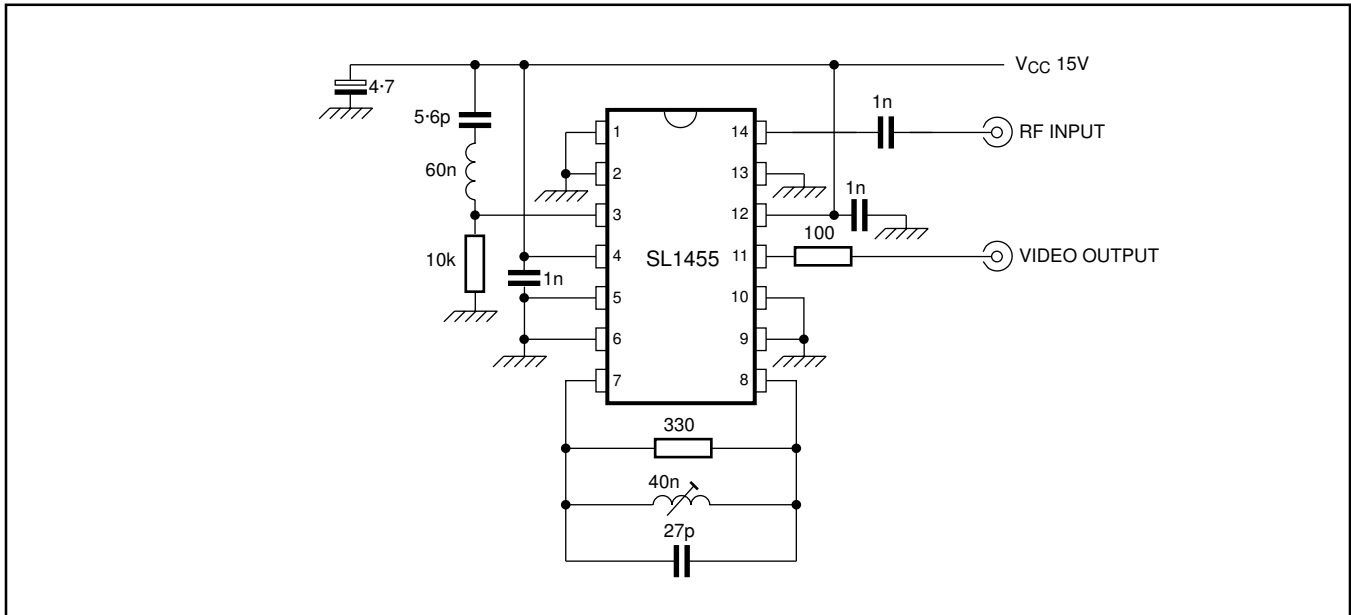
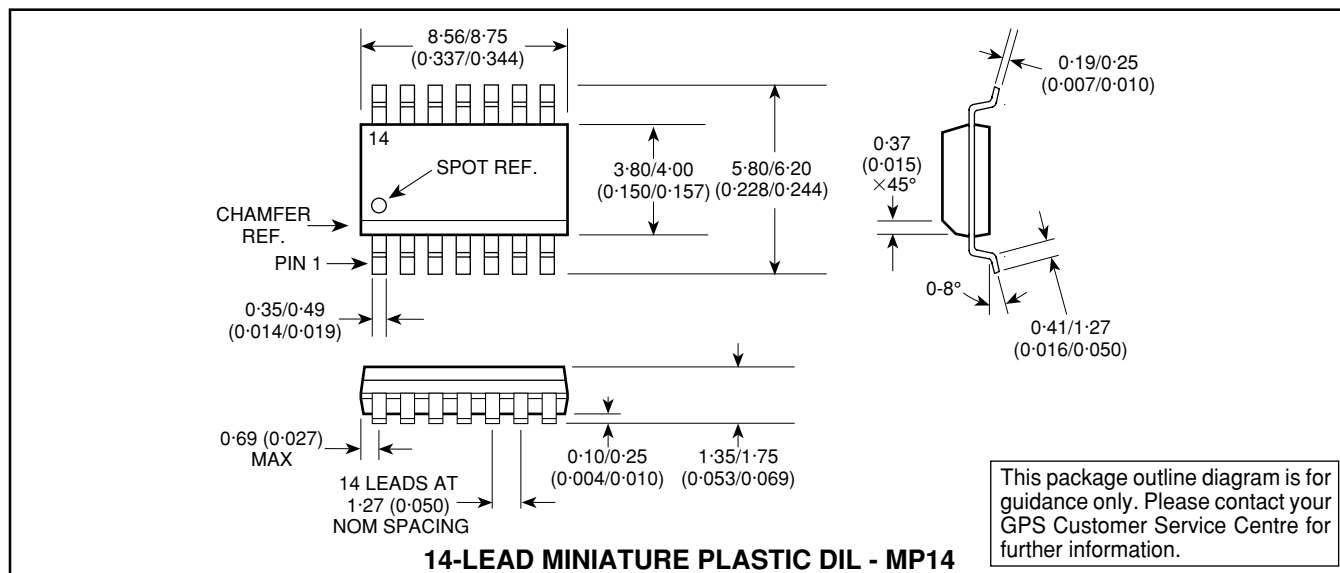
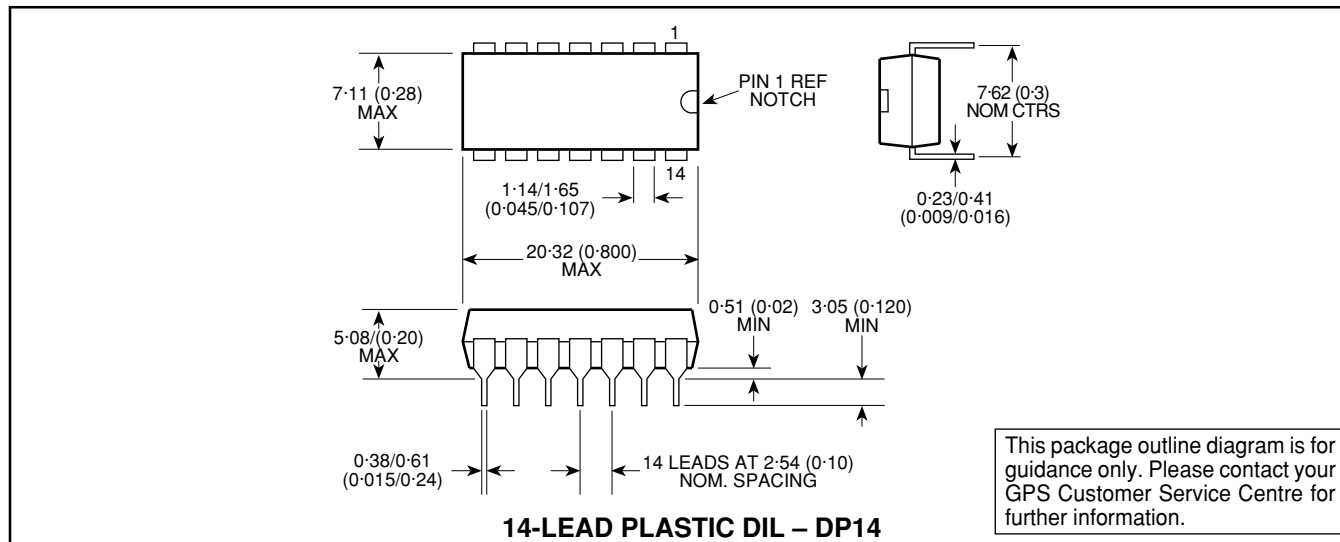


Fig. 3 Typical application: 612MHz threshold extended demodulator

NOTES

PACKAGE DETAILS

Dimensions are shown thus: mm (in)



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