

AN6141S, AN6141SB

Cordless Telephone Compander IC

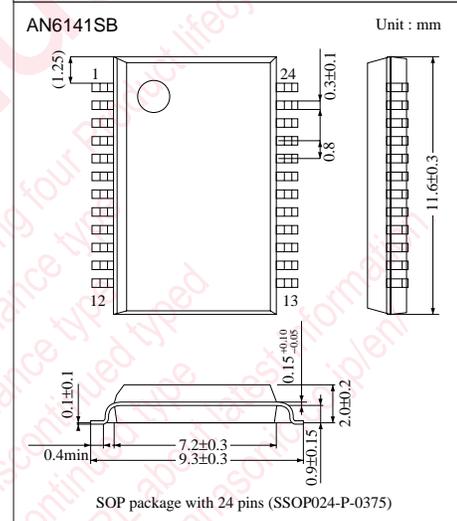
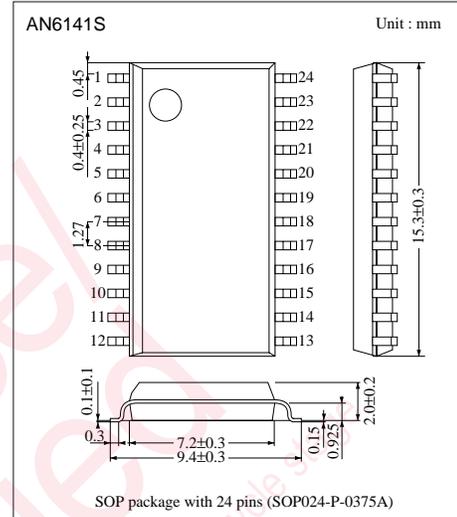
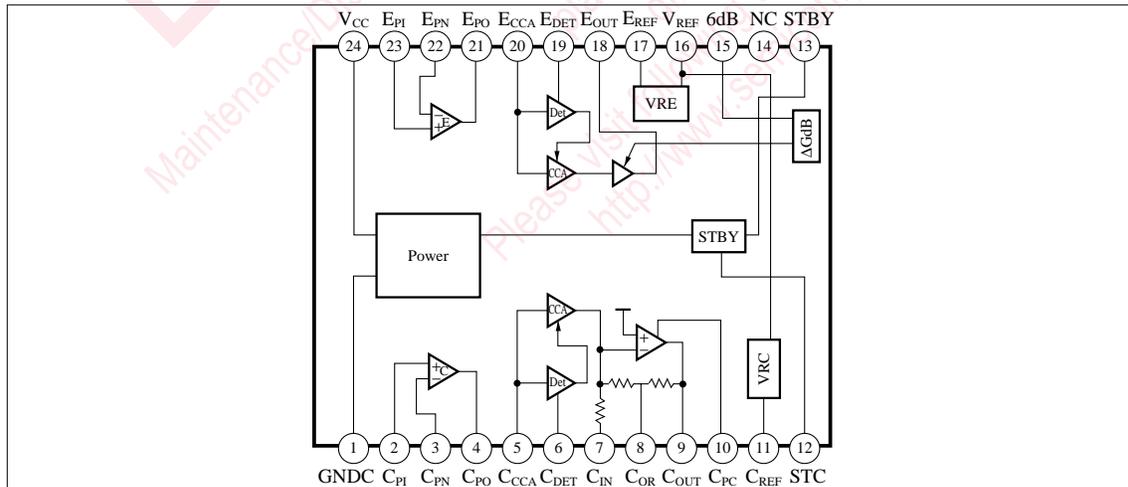
Overview

The AN6141S and AN6141SB are compander ICs for cordless telephones incorporating standby and received-signal amplifying functions. Their noise compressor circuit has such an improved linearity as to remarkably reduce radio transmission noise. These ICs provide a cordless telephone with a high-quality transmission performance.

Features

- Compander IC designed for cordless telephones
- The noise compressor circuit has an improved linearity of 10 dB.
- The compressor/expander circuitry incorporates preamplifiers to make level and frequency adjustments easier.
- The standby circuit provides for a low-power consumption cordless telephone.
- The expander has a 6-dB amplifier to allow received-signal amplification.
- SOP package with 1.27 or 0.8mm pitch pins

Block Diagram



■ Pin Descriptions

| Pin No. | Symbol | Description | Pin No. | Symbol | Description |
|---------|--------|------------------------|---------|-----------------|------------------------|
| 1 | GNDC | Compander CND | 13 | STBY | Standby |
| 2 | CPI | COMP preamp. input (+) | 14 | N.C | ———— |
| 3 | CPN | COMP preamp. input (-) | 15 | ΔG | EXP 6-dB amplification |
| 4 | CPO | COMP preamp. output | 16 | VREF | VREF for compander |
| 5 | CCCA | COMP-CCA input | 17 | EREF | EXP-VREF |
| 6 | CDET | COMP detection | 18 | EOUT | EXP output |
| 7 | CIN | COMP signal input | 19 | EDET | EXP detection |
| 8 | COR | COMP output VREF | 20 | ECCA | EXP-CCA input |
| 9 | COUT | COMP signal output | 21 | EPO | EXP preamp. output |
| 10 | CPC | COMP phase adjustment | 22 | EPN | EXP preamp. input (+) |
| 11 | CREF | COMP-VREF | 23 | EPI | EXP preamp. input (-) |
| 12 | STC | Standby adjustment | 24 | V _{CC} | Power supply |

■ Absolute Maximum Ratings (T_a=25°C)

| Parameter | Symbol | Rating | Unit |
|-------------------------------|------------------|------------------------|------|
| Supply voltage | V _{CC} | 7.5 | V |
| Supply current | P _D | 280 ^{Note.1)} | mW |
| Operating ambient temperature | T _{opr} | -20 to +75 | °C |
| Storage temperature | T _{stg} | -55 to +125 | °C |

Note.1) T_a=75°C

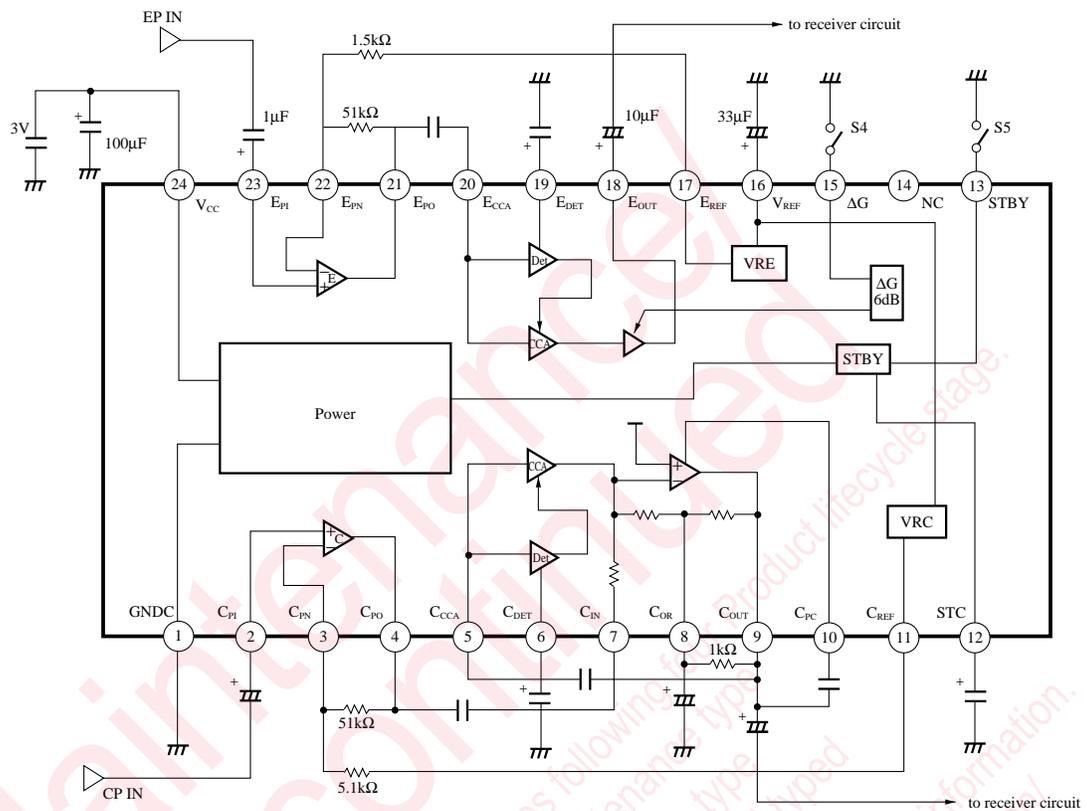
■ Recommended Operating Range

| Parameter | Symbol | Range |
|--------------------------------|-----------------|----------|
| Operating supply voltage range | V _{CC} | 2V to 5V |

■ Electrical Characteristics (T_a=25°C)

| Parameter | Symbol | Condition | min | typ | max | Unit |
|-------------------------------|------------------|---|-------|-----|-------|------|
| Current consumption | I _{CC} | V _{CC} =3V, no signal | 1.5 | — | 6 | mA |
| Standby current | I _{CS} | Standby pin (H) | — | — | 10 | μA |
| COMP ref. output | V _{ORC} | V _{IRC} (ref. input) = -20dBV | -13 | -11 | -9 | dBV |
| Δ Gain (1) | $\Delta C1$ | V _{IN} =V _{IRC} -20dB, $\Delta C1$ =V _{ORC} -V _{OC1} | -11 | -10 | -9 | dB |
| Δ Gain (2) | $\Delta C2$ | V _{IN} =V _{IRC} -40dB, $\Delta C2$ =V _{ORC} -V _{OC2} | -22 | -20 | -19 | dB |
| EXP ref. output | V _{ORE} | V _{IRE} (ref. input) = -20dBV | -32 | -29 | -26 | dBV |
| Δ Gain(1) | $\Delta E1$ | V _{IN} =V _{IRE} -10dB, $\Delta E1$ =V _{ORE} -V _{OE1} | -21 | -20 | -19 | dB |
| Δ Gain (2) | $\Delta E2$ | V _{IN} =V _{IRE} -20dB, $\Delta E2$ =V _{ORE} -V _{OE2} | -41.5 | -40 | -38.5 | dB |
| Received signal amplification | ΔGE | Received signal amp. pin (L) | 4 | 6 | 8 | dB |

■ Application circuit



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