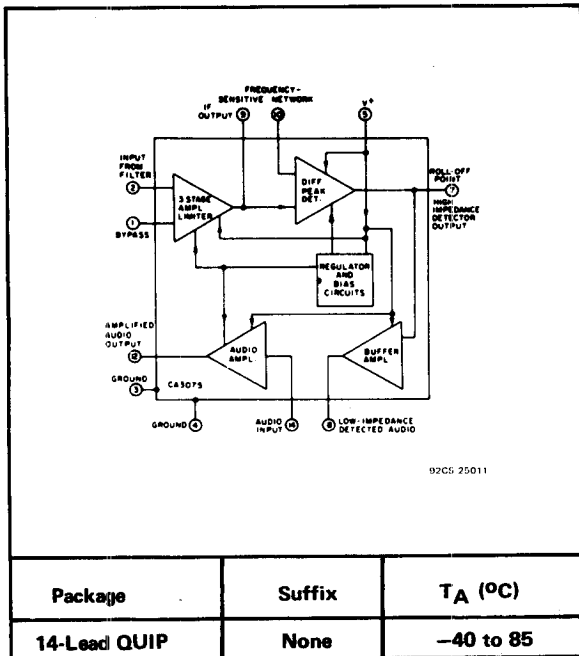


IF Subsystems

| IF SUBSYSTEMS FOR FM RECEIVERS | | | | | |
|---------------------------------|--------------------|---------------------------------|------------------------|-------------------|-------------------|
| Features | Type Numbers | | | | |
| | CA2111A | CA3089E | CA3075 | CA3043 | CA3013 CA3014 |
| No. of Limiter-Amplifier Stages | 3 | 4 Push-Pull | 3 | 4 | 3 |
| Type of FM Detector | Quadrature Det. | Quadrature Prod. Det. | Differential Peak Det. | Ratio Det. | Ratio Det. |
| Audio Amplifier | Emitter Follower | Squelch Controlled Output | 21 db Voltage Gain | Darlington Output | Darlington Output |
| AFT Output | Buffered from Det. | Separate Output Bal. Capability | Buffered From Det. | From Det. | From Det. |
| Squelch or Mute | No | Yes | No | No | No |
| Meter Circuit | No | Yes—log summing | No | No | No |
| Recovered Audio | 500 mV | 425 mV | 1500 mV | 110 mV | 110 mV |
| 10.7-MHz Limiting Knee | 400 μ V | 12 μ V | 250 μ V | 50 μ V | 500 μ V |
| Package | 14-Lead Dip & Quip | 16-Lead Dip | 14-Lead Quip | 12-Lead TO-5 | 10-Lead TO-5 |

FM IF Amplifier-Limiter/Detector/Audio Preamplifier

CA3075



Applications and Features

- Internal Zener-diode regulation for if amplifier section
- Low total harmonic distortion (THD)
- Differential peak detection: permits simplified single-coil tuning
- Minimum number of external parts required

Typical Electrical Characteristics at $T_A = 25^\circ C$

| | | |
|------------------------------------|-----|--------------|
| Audio Preamplifier Voltage Gain | 21 | dB typ. |
| Input Limiting Voltage at 10.7 MHz | 250 | μ V max. |
| Recovered AF Voltage (Term. 12) | 1.5 | V typ. |
| AM Rejection at 10.7 MHz | 55 | dB typ. |

| Package | Suffix | T_A ($^\circ$ C) |
|--------------|--------|---------------------|
| 14-Lead QUIP | None | -40 to 85 |

File No. 429*

FM IF Amplifier-Limiter/Quadrature Detector

CA2111A

For data, see TV IF Sound Systems, Page 51

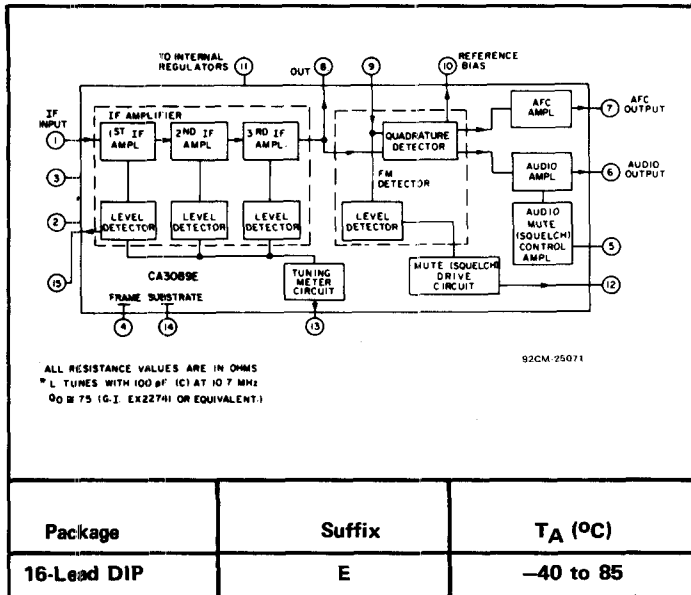
*Refer to indicated File No. for data bulletin and where given to indicated ICAN No. for application note.

⑥ FM Receiver Circuits - continued

IF Subsystems - continued

FM IF System Includes -- IF Amplifier, Quadrature Detector, AF Preamp, and Specific Circuits for AGC, AFC, Muting (Squelch), and Tuning Meter

CA3089



Applications and Features

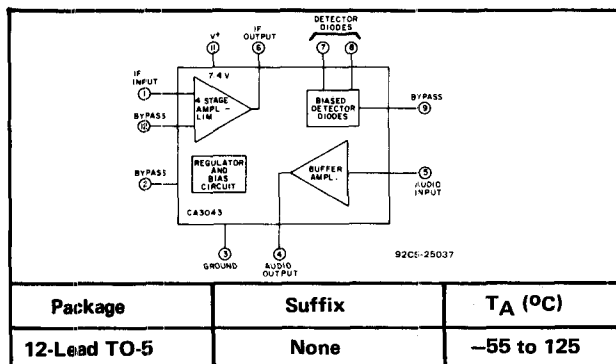
- For FM if amplifier in high-fidelity automotive, and communications receivers
- Provides specific signal for control of interchannel muting (squelch)
- Exceptional limiting sensitivity: 12 μ V typ. at -3dB point
- Provides specific signal for direct drive of a tuning meter
- Low distortion: 0.1% typ. (with double-tuned coil)
- Provides delayed agc voltage for rf amplifier
- Single-coil tuning capability
- Provides a specific circuit for flexible afc
- High recovered audio: 425 mV typ.
- Internal supply-voltage regulators

Typical Electrical Characteristics

| | | |
|-------------------------------------|-----|---------|
| Input Limiting Voltage (-3dB point) | 12 | μ V |
| AM Rejection | 43 | dB |
| Recovered AF Voltage | 425 | mV |
| Total Harmonic Distortion: | | |
| Single Tuned | 0.5 | % |
| Double Tuned | 0.1 | % |
| Signal plus Noise to Noise Ratio | 67 | dB |

File No. 561*

FM IF Amplifier/Limiter/FM Detector/AF Preamp/Driver CA3043



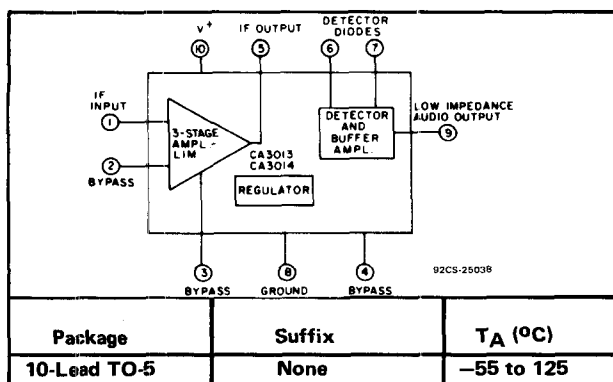
Applications and Features

- For FM if amplifier applications in communications receivers and high-fidelity FM receivers up to 20MHz
 - Inherent high stability, internally shielded
 - Internal Zener-diode regulated voltage supply
 - Low total harmonic distortion (THD)
 - Wide frequency range: < 100kHz to > 20MHz
 - Typical Electrical Characteristics at $T_A = 25^\circ\text{C}$
- | | | |
|-------------------------------|-----|-------------|
| Voltage Gain | 80 | dB |
| Input Limiting Voltage (knee) | 50 | μ V rms |
| Recovered AF Voltage | 110 | mV rms |
| AM Rejection | 58 | dB typ. |

File No. 331*

Wide-Band Amplifier/Limiter/FM Detectors

CA3013
CA3014



Applications and Features

- For FM and sound if applications
- The CA3013 is like the CA3014 except for Max. DC Supply Voltage: CA3013, 7.5V; CA3014, 10V
- Wide frequency capability: 100kHz to > 20MHz

Typical Electrical Characteristics at $T_A = 25^\circ\text{C}$

| | | |
|---|-----|---------|
| Voltage Gain: | | |
| At 1MHz | 71 | dB |
| At 4.5MHz | 67 | dB |
| At 10.7MHz | 60 | dB |
| Input Limiting Voltage (Knee) at 4.5MHz | 300 | μ V |
| Recovered AF Voltage at 4.5MHz | 188 | mV |
| AM Rejection at 4.5MHz | 50 | dB |

File No. 129*

ICAN-5269, 5380*

*Refer to indicated File No. for data bulletin and where given to indicated ICAN No. for application note.