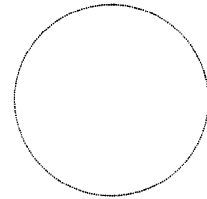


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SPECIFICATION

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| SIGNATURE | DATE |
|--|--------------|
| DRAWN BY <i>I. Fukami</i> | 13 Jan, 1998 |
| CHECKED BY <i>Hirosaki Honda</i> | 16 Jan, 1998 |
| APPROVED BY <i>M. Tanaka</i> | 19 Jan, 1998 |
| QC. APPROVED BY <i>Hideo Wakasugi</i> | 17 Jan, 1998 |

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| REFERENCE DATA |
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1. Purpose

TK10930V is designed for the telecommunication's apparatus and applied for the FM-IF Part with independent AM Detector.

2. TOKO Part Number

TK10930V

3. Function

Narrow Band FM/AM IF System

4. Applications

Cordless Phones, Amateur Radio Transceivers.

5. Structure

The structure is a silicon monolithic bipolar circuit

6. Package Outline

24Lead—Shrink Small Outline Package :SSOP-24

7. Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Rating | Unit | Condition |
|-----------------------------|---------|------------|------|-----------|
| Supply Voltage | VCC MAX | 10 | V | |
| Power Dissipation | PD | 400 | mW | ※ |
| Operating Voltage Range | VOP | 2.5 ~ 8.0 | V | |
| Storage Temperature Range | Tstg | -55 ~ +150 | °C | |
| Operating Temperature Range | TOP | -30 ~ +75 | °C | |
| Input Frequency | f MAX | ~ 60 | MHz | |
| | | | | |

※ PD must be derated at rate of 3.2mW/°C for operation at 25°C.

REFERENCE DATA

8. Electrical Characteristics

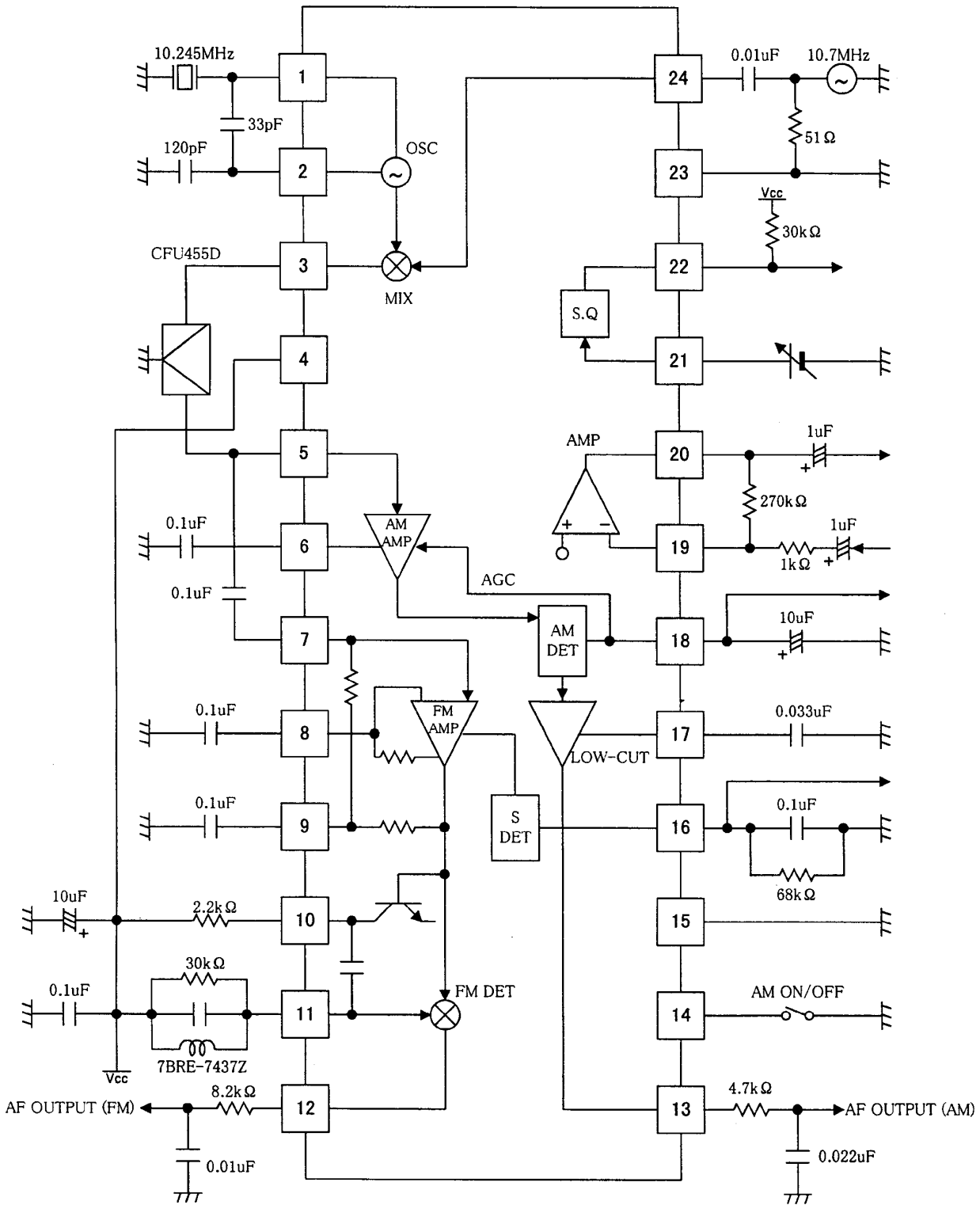
Condition : Ta=25°C, Vcc=3.0V

| Parameter | Symbol | Value | | | Unit | Condition |
|-----------------------------|--------|-------|------|------|------------|---------------------------------------|
| | | MIN | TYP | MAX | | |
| Supply Current 1 | Icc 1 | | 6.8 | 8.9 | mA | Non Input, AM ON |
| Supply Current 2 | Icc 2 | | 3.9 | 5.3 | mA | Non Input, AM OFF |
| Mixer Conversion Gain | Mg | | 20 | | dB | |
| Mixer Input Resistance | Mz | | 3.6 | | k Ω | DC Measurement |
| FM PART | | | | | | |
| Limiting Sensitivity | Limit | | 2.0 | 8.0 | μ V | -3dB |
| Output Voltage | Vo | 85 | 150 | 230 | mVrms | 10mVin \pm 3kHz DEV |
| Total Harmonic Distortion | THD | | 1.0 | 2.0 | % | 10mVin \pm 3kHz DEV |
| Output Impedance | Zo | | 800 | | Ω | 10mVin |
| Filter Amp Gain | Gf | 30 | 38 | | dB | f=30kHz, Vo=100mV |
| SCAN Control High Level | SH | 2.3 | | | V | Squelch Input 2.5V |
| SCAN Control Low Level | SL | | | 0.3 | V | Squelch Input 0V |
| Squelch Hysteresis | Hys | | 30 | | mV | |
| RSSI Output Voltage | S0 | | 0.05 | 0.5 | V | Vin=0mV, Rs=68k Ω |
| RSSI Output Voltage | S1 | 0.05 | 0.5 | 0.9 | V | Vin=0.01mV, Rs=68k Ω |
| RSSI Output Voltage | S2 | 0.7 | 1.2 | 1.7 | V | Vin=0.1mV, Rs=68k Ω |
| RSSI Output Voltage | S3 | 1.2 | 1.8 | 2.5 | V | Vin=1mV, Rs=68k Ω |
| RSSI Output Voltage | S4 | 1.6 | 2.3 | 2.9 | V | Vin=10mV, Rs=68k Ω |
| RSSI Output Voltage | S5 | 1.8 | 2.4 | 2.9 | V | Vin=100mV, Rs=68k Ω |
| AM PART | | | | | | |
| Sensitivity | US | 20 | 15 | | dBu | Input Level when Output Level=20mV |
| Output Voltage | Vo 1 | 60 | 120 | 180 | mVrms | 1kHz 30%, Vin=1mV |
| Total Harmonic Distortion 1 | THD 1 | | 1.0 | 2.0 | % | 1kHz 30%, Vin=1mV |
| Total Harmonic Distortion 2 | THD 2 | | 2.0 | 4.0 | % | 1kHz 80%, Vin=1mV |
| S/N | S/N | 40 | 48 | | dB | 1kHz 30%, Vin=1mV |
| AM OFF | VOFF | -0.3 | | +0.3 | V | SW Port Open : AM OFF, GND : AM ON |

NOTE : Specification given herein are subject to change without notice.
Please confirm when ordering.

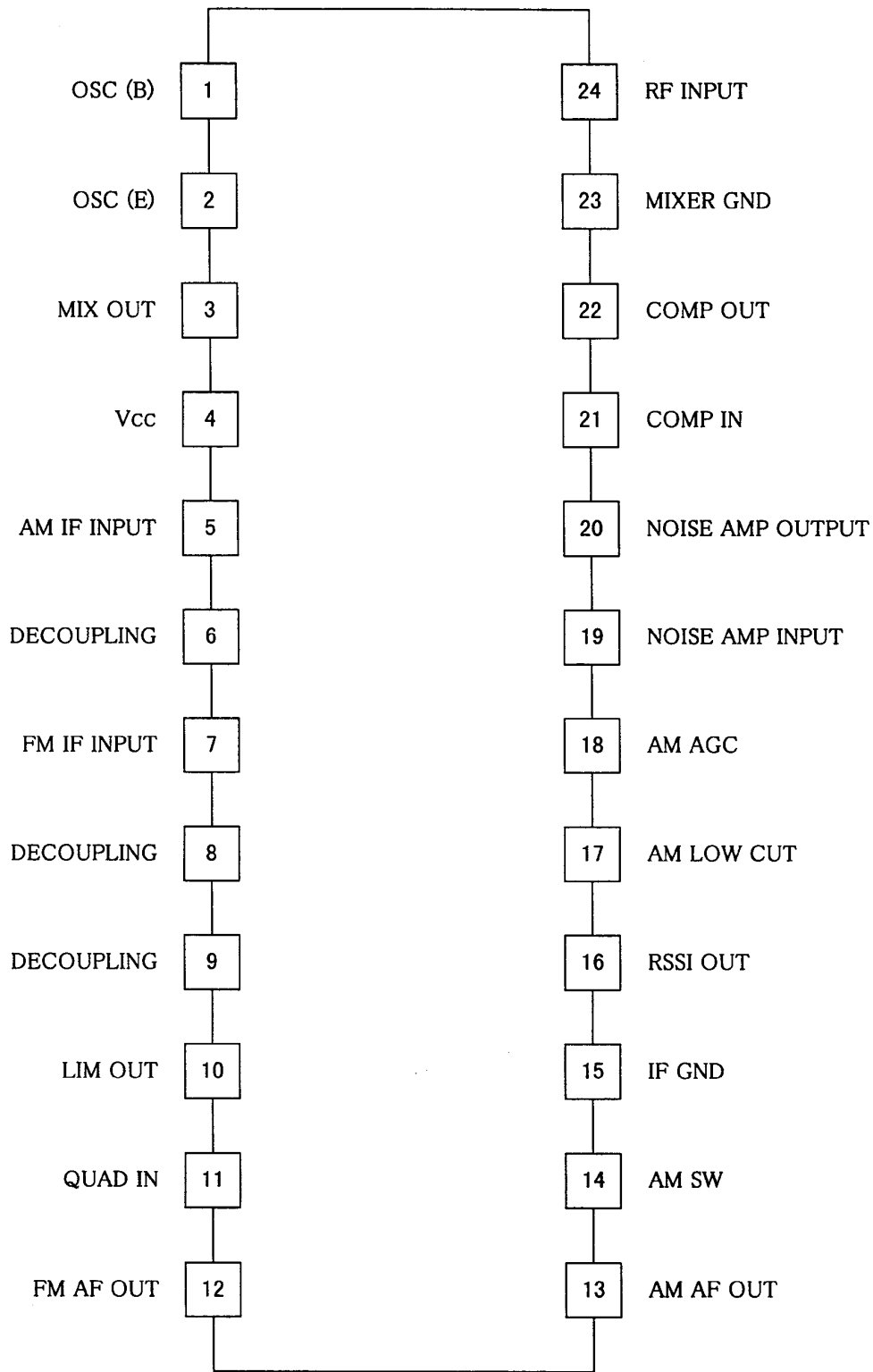
REFERENCE DATA

9. Test Circuit / Block Diagram



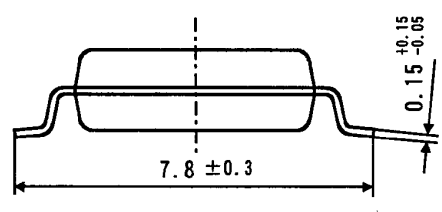
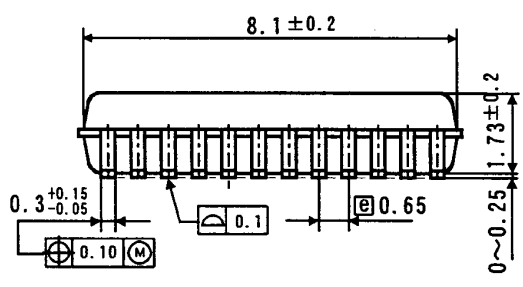
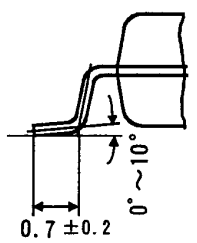
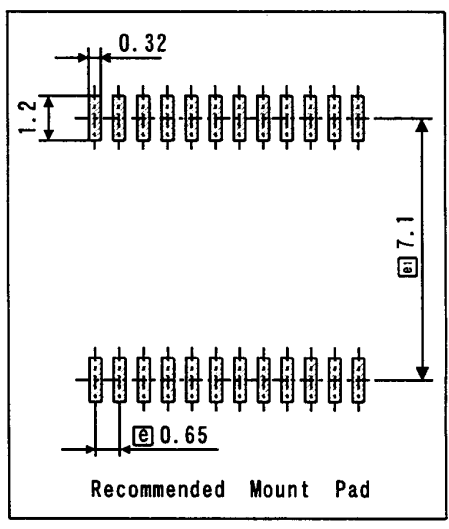
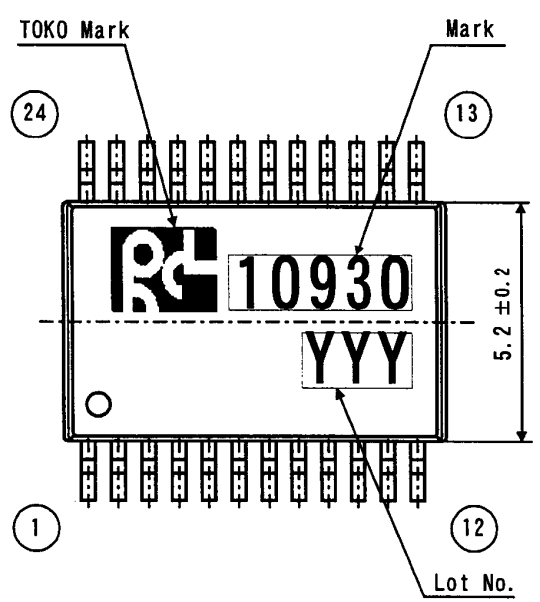
10. Pin Assignment

REFERENCE DATA



11. Package Outline Dimensions/Marking

SSOP-24



- Molded Resin : Epoxy Resin
- Lead Frame : Copper Alloy
- Terminal Treatment : Solder Plating(5~15 μ m)
- Mark Method : Ink
- Country of Origin : Philippines
- Weight : 0.17g

Unit : mm
 General Tolerance : ± 0.2

12. Cautions

12-1. WARNING - Life support applications policy

TOKO,INC. products shall not be used within any life support systems without the specific written consent of TOKO,INC. A life support system is a product or system intended to support or sustain life which, if it fails, can be reasonably expected to result in a significant personal injury or death.

12-2. Examples of characteristics given here are typical for each product and being technical data, these do not constitute a guarantee of characteristics or conditions of use.

The circuits shown in this specification are intended to explain typical applications of the products concerned. Accordingly, TOKO is not responsible for any circuit problems, nor for any infringement of third party patents or any other intellectual property rights that may arise from the use of these circuits. Moreover, this catalog does not signify that TOKO agrees implicitly or explicitly to license any patent rights or other intellectual property rights which it holds.

12-3. This part is not designed for anti-nuclear radiation structure.

Please do not use this part in an environment where nuclear radiation may occur.

12-4. We may not accept the return of parts damaged by careless handling.

13. Others

13-1. No Ozone Depleting Substances were used in the manufacture of these parts.

13-2. No material used in this part contains brominated PBBs or PBBs as the flame-retardant.

13-3. In the event of any confusion concerning this "Specifications", both parties shall settle such confusion through reasonable discussions.

13-4. The announcement number of CISTEC list is as follows.

TK10930***** No. : 0002500010000012 Announcement time : September 1992

13-5. For the cautions to storage and device mounting, please refer to the Quality Specification No. QH7-B008.

13-6. For the package, please refer to the Package Specification No. DP3-F021.