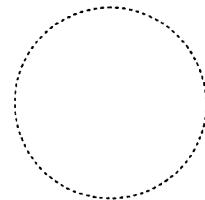


REFERENCE DATA

SPECIFICATION

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1. Purpose

This part drawing defines the requirements for TK10659M.
(Noise Reduction System)

2. TOKO Part Number

TK10659M

3. Function

Noise Reduction System (Compandor)

4. Applications

Cordless Phones, Amateur Radio Transceiver, Inter phone

5. Structure

The structure is a silicon monolithic bipolar circuit

6. Package Outline

14Lead—Small Outline Package :SOP-14 (MFP14)

7. Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit	Condition
Supply Voltage	VCC MAX	10	V	
Power Dissipation	Pd	600	mW	※
Operating Voltage Range	VOP	1.8 ~ 7.0	V	
Storage Temperature Range	Tstg	-55 ~ +150	°C	
Operating Temperature Range	TOP	-20 ~ +75	°C	
Input Frequency	f MAX	100	kHz	

※ Pd must be derated at rate of 4.8mW/°C for operation at 25°C.

8. Electrical Characteristics

Condition : Ta=25°C, VCC=3.0V, fin=1.0kHz, RL=10k Ω

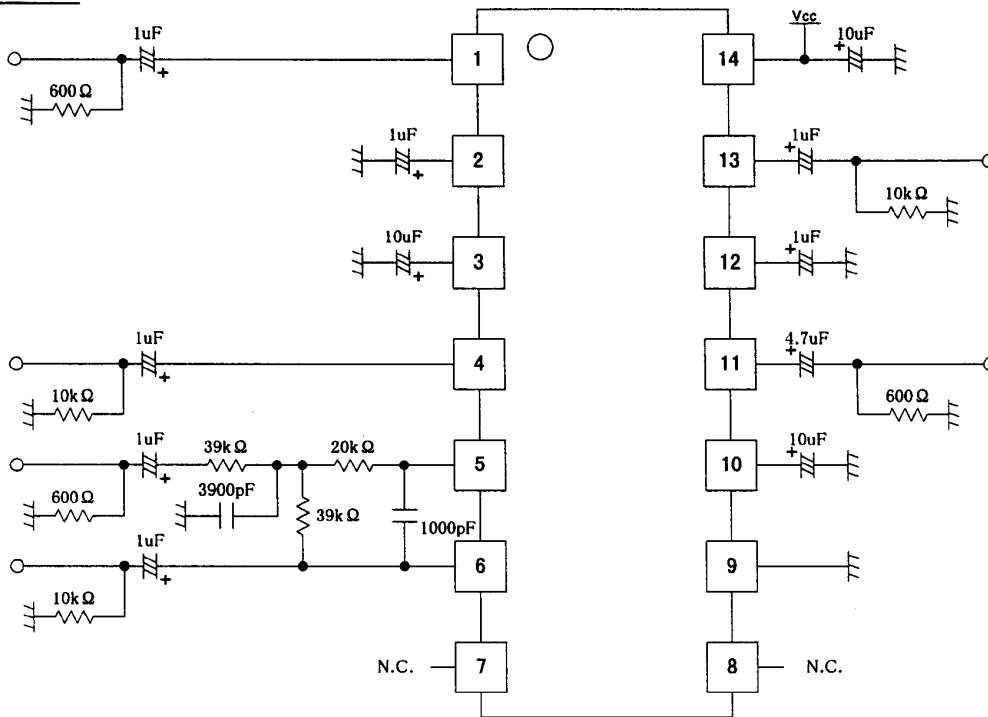
Parameter	Symbol	Value			Unit	Condition
		MIN	TYP	MAX		
Supply Current	Icc	—	3.0	4.5	mA	No signal
Compressor						
Standard Input Voltage	Vinc	-21.5	-20.0	-18.5	dBV	Vin=-20dBV=0dB
Gain Error 0	ΔGc 0	-0.5	0.0	+0.5	dB	ΔVin=+10dB
Gain Error 1	ΔGc 1	-0.5	-0.1	+0.5	dB	ΔVin=-20dB
Gain Error 2	ΔGc 2	-1.0	0.0	+1.0	dB	ΔVin=-40dB
Total Harmonic Distortion	THDc	—	0.3	1.0	%	Vin=-20dBV
Output Noise Voltage	Vnoc	—	1.0	3.0	mVrms	Rg=600 Ω
Maximum Output Voltage	VOMc	0.4	0.5	—	Vrms	THD=10% Point
Buffer Amp.						
Voltage Gain	GvB	-0.7	-0.2	+0.3	dB	Vin=-20dBV
Frequency Characteristics 1	Δf 1	—	-3.6	—	dB	fin=3.0kHz ※
Frequency Characteristics 2	Δf 2	—	-40	—	dB	fin=30kHz ※
Total Harmonic Distortion	THDB	—	0.02	0.10	%	Vin=-20dBV
Maximum Output Voltage	VOMB	0.8	1.0	—	Vrms	THD=10% Point
Expander						
Standard Output Voltage	Voe	-21.0	-19.0	-17.0	dBV	Vin=-20dBV=0dB
Gain Error 0	ΔGe 0	-1.0	-0.2	+1.0	dB	ΔVin=+5dB
Gain Error 1	ΔGe 1	-1.0	-0.1	+1.0	dB	ΔVin=-10dB
Gain Error 2	ΔGe 2	-1.0	-0.3	+1.0	dB	ΔVin=-20dB
Total Harmonic Distortion	THDe	—	0.3	1.0	%	Vin=-20dB
Output Noise Voltage	Vnoe	—	15	50	uVrms	Rg=600 Ω
Maximum Output Voltage	VOME	0.8	1.0	—	Vrms	THD=10% Point

Note : AC characteristics evaluated by Band Pass Filter. (BW=400Hz~30kHz)

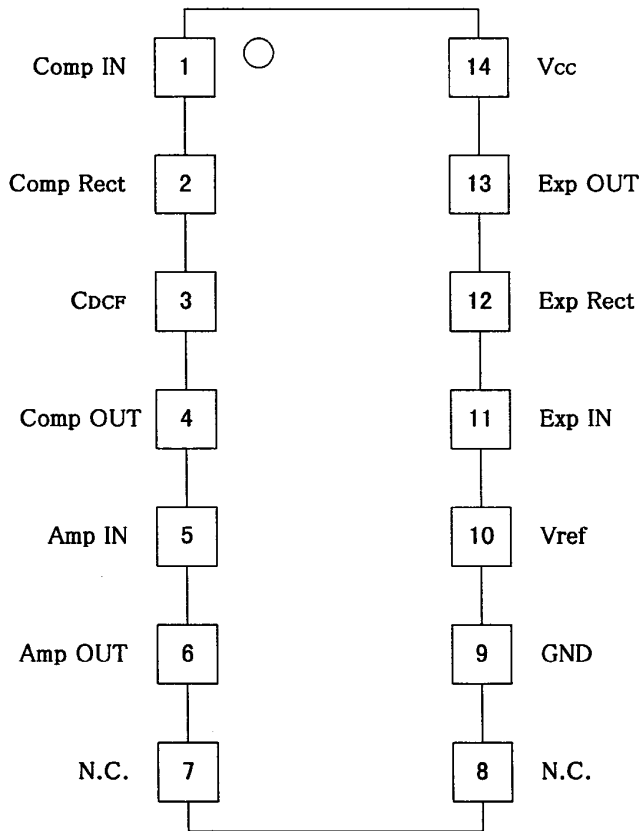
Exclusion of ※ mark.

AC characteristics of ※ mark evaluated by 400Hz High Pass Filter.

9. Test Circuit

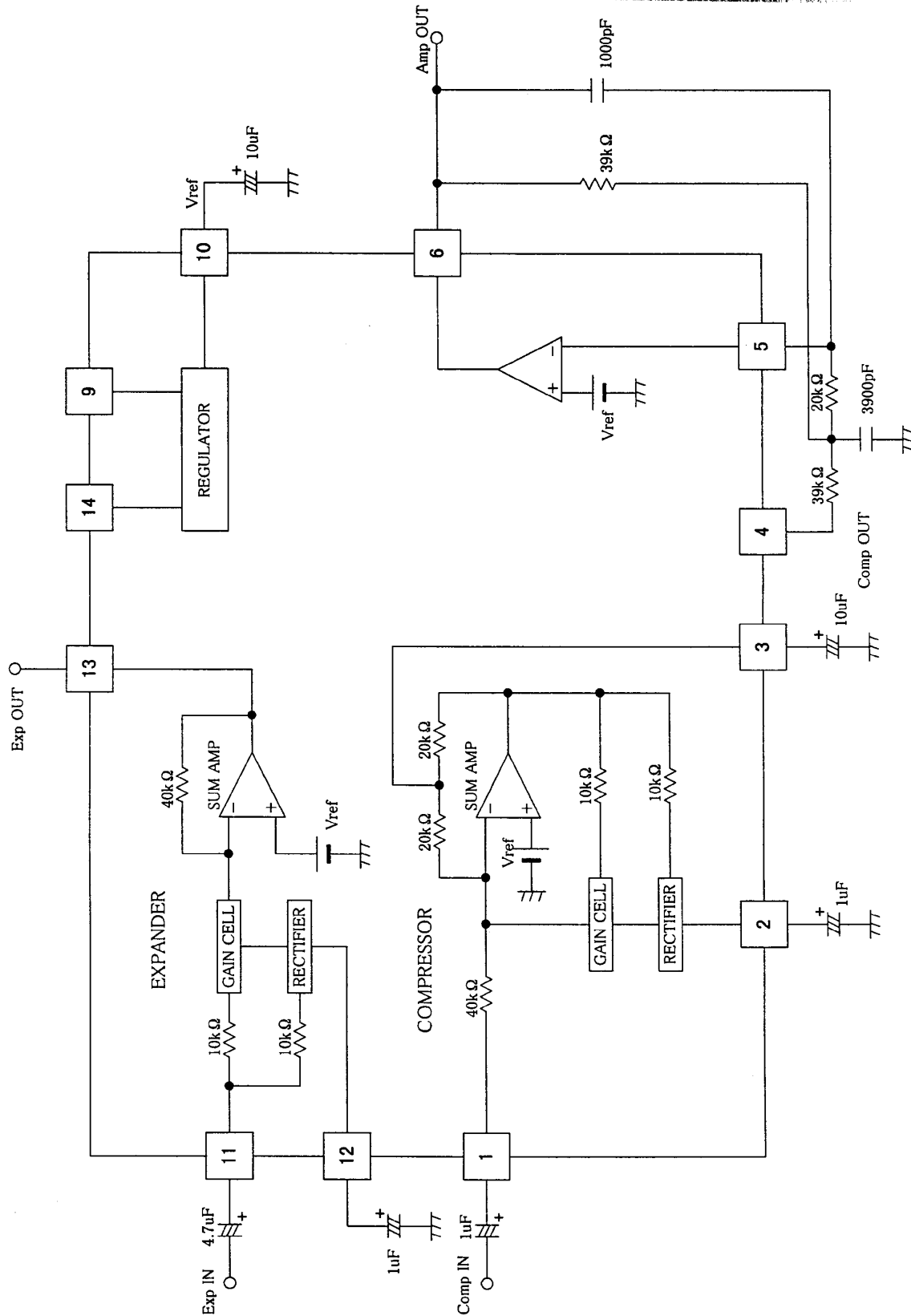


10. Pin Assignment



REFERENCE DATA

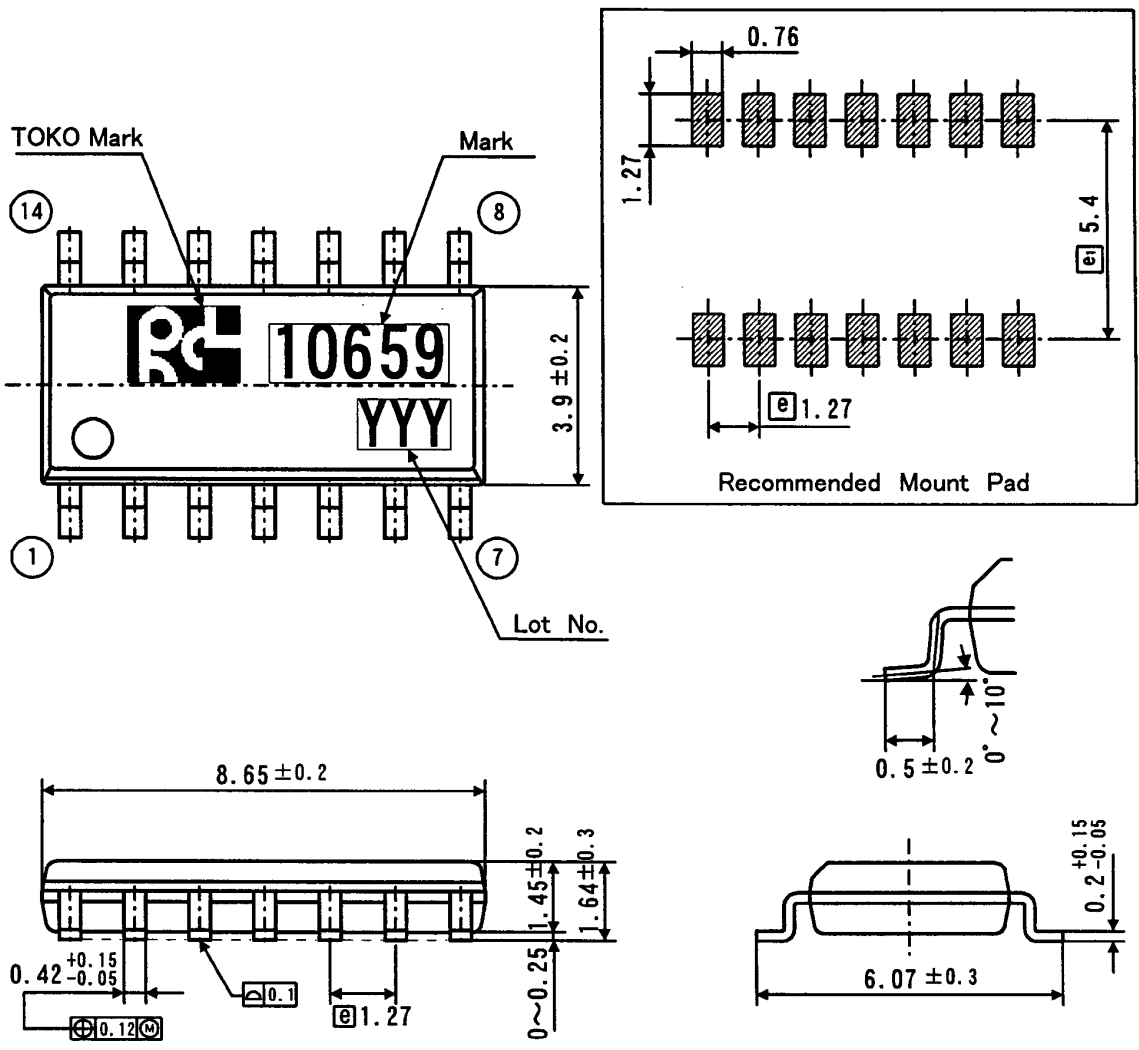
11. Block Diagram



REFERENCE DATA

12. Package Outline Dimensions/Marking

SOP-14 (MFP14)



- Molded Resin : Epoxy Resin
- Lead Frame : Copper Alloy
- Terminal Treatment : Solder Plating(5~15 μ m)
- Mark Method : Ink
- Country of Origin : Korea
- Weight : 0.13g

Unit : mm
 General Tolerance : ± 0.2

13. Cautions

13-1. 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.

13-2. 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.

13-3. This part is not designed for anti-nuclear radiation structure.

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

13-4. We may not accept the return of parts damaged by careless handling.

14. Others

14-1. No Ozone Depleting Substances were used in the manufacture of these parts.

14-2. No material used in this part contains brominated PBBs or PBBs as the flame-retardant.

14-3. In the event of any confusion concerning this "Specifications", both parties shall settle such confusion through reasonable discussions.

14-4. The announcement number of CISTEC list is as follows.

TK10659***** No. :0002500010000009 Announcement time : September 1992

14-5. For the cautions to storage and device mounting, please refer to the Quality Specification

No. QH7-B112.

14-6. For the package, please refer to the Package Specification No. DP3-F015.