

DATA SHEET

Part No.	AN29000A
Package Code No.	QFP056-9-1010B

SEMICONDUCTOR COMPANY
MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.

Contents

- Features 3
- Applications 3
- Package 3
- Application Circuit 4
- Pin Descriptions 5
- Absolute Maximum Ratings 6
- Operating Supply Voltage Range 6

AN29000A

Silicon Monolithic Bi - CMOS IC

■ Features

- IF - AMP1, IF - AMP2, DET, NOISE-SQ, RSSI, DATA - AMP, BATT - LOW, COMPANDER, SP - AMP, Half-Mute, OSC, PRESCALER, PROGRAMMABLE - COUNTER, Pre - AMP, Vol Control, Power Down, Splatter - Filter

■ Applications

- IC for Cordless Telephone (IF + COMPANDER + PLL)

■ Package

- Quad 56 pin Plastic Package

■ Pin Descriptions

Pin No.	Pin Description		Pin No.	Pin Description	
1	EN	Enable input	29	DET-IN	FM detector input
2	C-DET	COMP detection	30	IF2-OUT	IFamp2 output
3	SF-OUT	Splatter filter output	31	N-DET	Noise detection
4	SFC2	External splatter filter	32	RSSI-DET	RSSI detection
5	SFC1	COMP output	33	IF2-IN	IFamp2input
6	COMP-DC	COMP output V_{REF}	34	IF2- V_{REF}	IFamp2 V_{REF}
7	POFF	Power down input	35	IF1-OUT	IFamp1 output
8	MIC-OUT	Microphone amp output	36	V_{CC1}	V_{CC1}
9	MIC-IN	Microphone amp input	37	IF1-IN	IFamp1 input
10	BREF	Audio system reference output	38	GND1	Ground 1
11	PD-OUT	Power down output	39	RXV_{CC}	RX-counter V_{CC}
12	V_{CC2}	V_{CC2}	40	PDL	BL, PD threshold selection
13	DOUT	Data amp output	41	RXGND	RX-counter Gnd
14	GND2	Ground 2	42	FINR	RX-counter input
15	BTL	SP amp output 1	43	SIG-OUT	LD, RSSI, ND output
16	SP-OUT	SP amp output 2	44	Batt-Low	Battery low output
17	SP-IN	SP amp input	45	V_{SS}	Logic Gnd
18	TXDET	Half-mute detection	46	RX-PD	RX-phase comparator output
19	PE	ZAP write	47	PLLREG	Logic power source output
20	GND3	Ground 3	48	TX-PD	TX-phase comparator output
21	EXPOUT	EXP output	49	TXV_{CC}	TX-counter V_{CC}
22	DIN	Data amp input	50	FINT	TX-counter input
23	EDET	EXP detection	51	TXGND	TX-counter Gnd
24	PreAMP-OUT	Pre-amp output	52	OSCI	Crystal oscillator input
25	PreAMP-IN	Pre-amp input	53	OSCO1	Crystal oscillator output1
26	DET-OUT	FM detection output	54	OSCO2	Crystal oscillator output2
27	NFIN	Noise filter input	55	DATA	Serial data input
28	NFOUT	Noise filter output	56	CLK	Clock input

■ Absolute Maximum Ratings

No.	Parameter	Symbol	Rating	Unit	Note
1	Storage temperature	T_{stg}	-55 to +125	°C	*1
2	Operating ambient temperature	T_{opr}	-20 to +75	°C	*1
3	Operating ambient atmospheric pressure	P_{opr}	$1.013 \times 10^5 \pm 0.61 \times 10^5$	Pa	
4	Operating constant gravity	G_{opr}	9 810	m/S ²	
5	Operating shock	S_{opr}	4 900	m/S ²	
6	Supply voltage	$V_{CC1}, V_{CC2},$ RxV_{CC}, TxV_{CC}	6.5	V	*2
7	Supply current	I_{CC}	30	mA	*3
8	Power dissipation	P_D	195	mW	

Note) *1 : $T_a = 25^\circ\text{C}$ except storage temperature and operating ambient temperature.

*2 : Power supply terminal (V_{CC1} (pin 36), V_{CC2} (pin 12), RxV_{CC} (pin 39), TxV_{CC} (pin 49)) should be supplied with same supply voltage.

*3 : I_{CC} is define as total current consumption at above four power supply terminal.

■ Operating Supply Voltage Range

Operating supply voltage range	$V_{CC1}, V_{CC2}, RxV_{CC}, TxV_{CC}$	2.7 V to 5.5 V
--------------------------------	--	----------------

Request for your special attention and precautions in using the technical information and semiconductors described in this material

- (1) An export permit needs to be obtained from the competent authorities of the Japanese Government if any of the products or technical information described in this material and controlled under the "Foreign Exchange and Foreign Trade Law" is to be exported or taken out of Japan.
- (2) The technical information described in this material is limited to showing representative characteristics and applied circuits examples of the products. It neither warrants non-infringement of intellectual property right or any other rights owned by our company or a third party, nor grants any license.
- (3) We are not liable for the infringement of rights owned by a third party arising out of the use of the technical information as described in this material.
- (4) The products described in this material are intended to be used for standard applications or general electronic equipment (such as office equipment, communications equipment, measuring instruments and household appliances).
Consult our sales staff in advance for information on the following applications:
 - Special applications (such as for airplanes, aerospace, automobiles, traffic control equipment, combustion equipment, life support systems and safety devices) in which exceptional quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or harm the human body.
 - Any applications other than the standard applications intended.
- (5) The products and product specifications described in this material are subject to change without notice for modification and/or improvement. At the final stage of your design, purchasing, or use of the products, therefore, ask for the most up-to-date Product Standards in advance to make sure that the latest specifications satisfy your requirements.
- (6) When designing your equipment, comply with the guaranteed values, in particular those of maximum rating, the range of operating power supply voltage, and heat radiation characteristics. Otherwise, we will not be liable for any defect which may arise later in your equipment.
Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.
- (7) When using products for which damp-proof packing is required, observe the conditions (including shelf life and amount of time let standing of unsealed items) agreed upon when specification sheets are individually exchanged.
- (8) This material may be not reprinted or reproduced whether wholly or partially, without the prior written permission of Matsushita Electric Industrial Co., Ltd.