

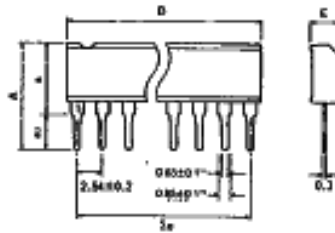
**ICs for Audio Applications**
**• CD Amplifiers**

Type	Function	Package		Features	Reference Catalog
		Configuration	No. of pins		
BA6280AF	PWM driver for CD players	MF	22	Two BA6280AF form a motor driver with the focus tracking, spindle and thread servo functions required by CD players.	—
BA6281F	PWM driver for CD players	MF	24	Usable with 3V equipment when used with the TA6270 transistor array.	—
BA6290A	BTL driver for CD players	SIP-P	12	Single-power supply BTL, 2-channel driver. This driver makes it possible to compose the driver of a CD player using two BA6290A units.	No.3121
BA6292	BTL driver for CD players	SIP-P	12	Version of the BA6290A, allowing external adjustment of frequency response.	No.3121
BA6294	BTL driver for CD players	SIP-P	10	10-pin power SIP version of BA6290	—
BA6351S	CD preserve amplifier	DIPS	42	Has all servo amplifier switches built-in. Operates on a $\pm 5V$ power supply.	No.3121
BA6353S	CD preserve amplifier	DIPS	42	Has all servo amplifier switches built-in. Operates on a $\pm 5V$ power supply.	No.3121
BA6295F	BTL driver for CD players	MFP	28	Automobile CD driver in mini-flat package BTL driver 2ch	—

**• Low-Frequency, Small-Signal Amplifiers**

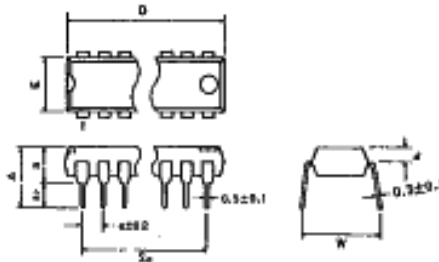
BA301	Multi-purpose preamplifier (with Emitter-follower)	SIP	7	Wide supply voltage range (6–20V). Low distortion (0.06%, Typ.) and high gain (79dB, Typ.)	No.2700
BA311	High-voltage multi-purpose preamplifier	SIP	7	Wide supply voltage range (20–42V). Low distortion (0.03%, Typ.) and high gain (90dB, Typ.)	No.2700
BA3112	Multi-purpose dual line amplifier	SIP	8	Dual line amplifier ( $G_{VC}=10dB$ fixed).	No.2700
BA3113	Multi-purpose dual line amplifier	SIP	8	Dual line amplifier ( $G_{VC}=15dB$ fixed).	No.2700
BA3114	Multi-purpose dual line amplifier	SIP	8	Dual line amplifier ( $G_{VC}=20dB$ fixed).	No.2700
BA3116	Dual line amplifier	SIP	8	Dual line amplifier ( $G_{VC}=30$ fixed)	No.3121
BA3118L	Multi-purpose dual-line amplifier	LF	18	$G_{VC}=6$ to 20dB variable without external resistance	No.3121
BA3120/BA3120F/BA3120N	Ground isolation amplifier	DIP/MF/SIP	8	Few external components (CMRR=54dB Typ.)	—
BA340	Multi-purpose preamplifier	SIP	8	Wide supply voltage range (6–16V). Few external components.	—
BA328/BA328F	Car stereo dual preamplifier	SIP/MF	8	High input impedance (200k $\Omega$ , Typ.). Low noise (0.9 $\mu V$ , Typ.)	No.3121
BA3304/BA3304F	3V dual preamplifier	LF/MF	16	For use with 3V headphone stereos. Does not require an input coupling capacitor. Low current consumption (1.5mA). Operates on as low as 1.2V supply voltage.	No.3121
BA3306	Dual preamplifier (with ALC)	SIP	9	Low power consumption. Few external components.	No.3121
BA3306/BA3306F	Dual preamplifier (with ALC)	SIP/MF	9/14	A version of the BA3306 containing rectification diode(s)	No.3121
BA3310N	Dual preamplifier (with ALC)	SIP	10	Few external components and features high gain up to high frequencies.	No.3121
BA3312N	Dual preamplifier (with ALC)	SIP	10	A version of the BA3310N containing rectification diode(s)	No.3121
BA313	Preamplifier (with ALC)	SIP	9	Wide supply voltage range (3–12V). Low distortion (0.12%, Typ.) and high gain (70dB, Typ.).	No.3121
BA333	Preamplifier (with ALC)	SIP	9	Wide supply voltage range (2.5–16V). Pop noise occurring at the time power is applied is prevented.	No.3121
BA343	Dual preamplifier (with ALC)	DIP	16	A dual preamplifier with ALC and a drive output for a sound monitor.	No.3121
BA3402/BA3402F	Car stereo dual auto-reverse preamplifier	LF/MF	16	Built-in input switching. DC control is used to provide auto-reversing without pop noise.	No.3121
BA3404L/BA3404F/BA3404FS	3V dual auto-reverse preamplifier	LF/MF/MFS	16	Playback auto-reverse preamplifier for use in 3V headphone stereos. Built-in direction display and LED drivers.	No.3121
BA3406AL/BA3406AF	Car stereo dual preamplifier	LF/MF	16	Built-in transistor for metal switching and muting.	No.3121
BA3408F	Car stereo dual auto-reverse preamplifier	MF	16	Equipped with LED driver, auto-reverse.	No.3121
BA3410AF	3V REC/PLAY system preamplifier	MF	16	3V power supply, with LED driver, REC/PLAY switchless, with ALC.	No.3121
BA3412K	3V dual REC/PLAY system preamplifier	QFP	32	3V power supply, with LED driver, auto-reverse 2 independent channels of ALC circuits.	No.3121
BA3413F/BA3413FS	1.5V dual auto-reverse preamplifier	MF/MFS	16	For use with 1.5V headphone stereos. Auto-reverse and metal tape selection functions.	No.3121
BA3416BL	Dual playback preamplifier for radio double cassette recorders	LF	18	Compatible with double-deck equipment with metal tape position.	No.3121
BA3420AL	Dual REC/PLAY preamp. for radio cassette recorders	LF	18	Internal input selector switch to select radio, mic., and tape.	No.3121

Dimensions (Unless otherwise specified, dimensions are shown in Typ. values.)

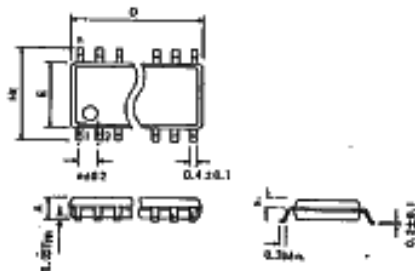
**SIP**

**• SIP Dimensions (Unit: mm)**

Package	A	a	a <sub>2</sub>	D	Σa	E
SIP 5	9.7	6.2	3.5	12.0	10.16	2.4
SIP 7	9.7	6.2	3.5	17.0	15.24	2.8
SIP 8	10.5	7.0	3.5	19.5	17.78	2.8
SIP 9	10.5	7.0	3.5	22.0	20.32	2.8
SIP 10	10.5	7.0	3.5	25.2	22.86	2.8

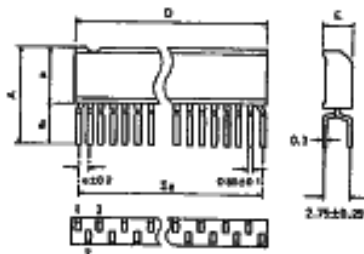
\*1 SIP 10pin: 0.6 \*2 SIP 10pin: 0.8

**DIP/DIPS**

**• DIP Dimensions (Unit: mm)**

Package	A	a	a <sub>1</sub>	a <sub>2</sub>	D	e	Σa	E	W
DIP 8	6.8	3.6	1.1	3.2	9.3	2.54	7.62	6.5	8.8
DIP 14	6.94	3.65	1.65	3.29	19.4	2.54	15.24	6.5	8.8
DIP 16	6.94	3.65	1.65	3.29	19.4	2.54	17.78	6.5	8.8
DIP 18	6.94	3.65	1.65	3.29	22.9	2.54	20.32	6.5	8.8
DIP 20	7.09	3.65	1.65	3.44	26.3	2.54	22.86	6.5	8.8
DIP 22	7.09	3.65	1.65	3.44	26.3	2.54	25.40	6.5	8.8
DIP 24	7.51	4.22	1.8	3.29	32.0	2.54	27.94	13.8	16.5
DIP 28	7.51	4.22	1.8	3.29	37.1	2.54	33.02	13.8	16.5
DIP 40	7.7	4.5	1.8	3.2	62.3	2.54	48.26	13.8	16.5
DIPS 18	7.35	3.65	1.65	3.7	19.4	1.778	14.224	6.5	8.8
DIPS 22	7.35	3.65	1.65	3.7	19.4	1.778	17.78	6.5	8.8
DIPS 24	7.4	4.0	1.7	3.4	22.8	1.778	19.558	6.5	8.8
DIPS 30	7.9	4.7	1.7	3.2	28.0	1.778	24.892	8.4	11.4
DIPS 32	7.9	4.7	1.7	3.2	28.0	1.778	26.67	8.4	11.4
DIPS 42	7.7	4.5	1.8	3.2	37.1	1.778	35.56	13.8	16.5

**MF/MFS/MFP**

**• MF Dimensions (Unit: mm)**

Package	A	a <sub>1</sub>	D	H <sub>c</sub>	e	E
MF 8	1.5	0.65	5.0	6.2	1.27	4.4
MF 14	1.5	0.65	8.7	6.2	1.27	4.4
MF 16	1.5	0.65	10.0	6.2	1.27	4.4
MF 18	1.8	0.8	11.2	7.8	1.27	5.4
MF 20	1.8	0.8	12.5	7.8	1.27	5.4
MF 22	1.8	0.8	13.7	7.8	1.27	5.4
MF 24	1.8	0.8	15.0	7.8	1.27	5.4
MF 26	2.2	1.0	18.5	9.9	1.27	7.5
MFS 16	1.5	0.65	6.6	6.2	0.8	4.4
MFS 20	1.8	0.8	8.7	7.8	0.8	5.4
MFS 24	1.8	0.8	10.0	7.8	0.8	5.4
MFP 24	1.9	0.8	13.7	7.8	0.8	5.4
MFP 28	2.2	0.95	18.5	9.9	0.8	7.5

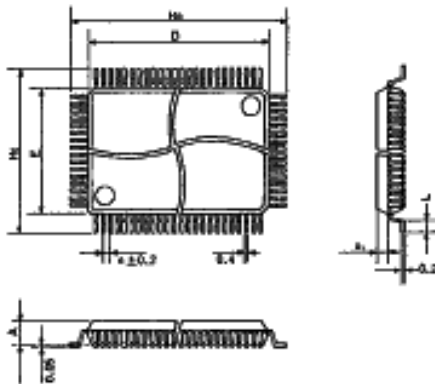
**LF/LFS**

**• LF Dimensions (Unit: mm)**

Package	A	a	a <sub>2</sub>	D	Σa	e	E
LF 9	9.8	5.0	4.8	12.0	10.16	1.27	2.4
LF 12	9.8	5.0	4.8	17.0	13.97	1.27	2.8
LF 16	9.9	5.8	4.1	19.5	19.05	1.27	2.8
LF 18	9.9	5.8	4.1	22.0	21.58	1.27	2.8
LFS 24	10.0	5.8	4.2	22.0	20.447	0.889	2.8

\*LFS 24: 2.54±0.25

T-90-20

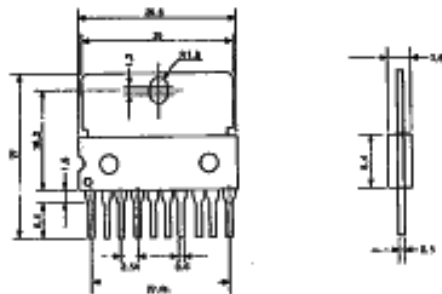
## QFP/QFPS



## • QFP Dimensions (Unit: mm)

Package	A	a <sub>1</sub>	D	e	E	H <sub>t</sub>	H <sub>b</sub>	L
QFP 32	1.45	0.65	7.0	0.8	7.0	9.0	9.0	0.4
QFP 44	2.15	1.0	10.0	0.8	10.0	14.0	14.0	1.2
QFP 64	2.15	1.0	20.0	1.0	14.0	18.0	24.0	1.2
QFP 80	2.7	1.275	20.0	0.8	14.0	18.0	24.0	1.2
QFPS 56	2.15	1.0	10.0	0.65	10.0	12.4	12.4	0.5
QFPS 80	2.7	1.275	14.0	0.65	14.0	16.4	16.4	0.5
QFPS 100	2.7	1.275	20.0	0.65	14.0	18.0	24.0	1.2

## SIP-P 10 pin



## SIP-P 12 pin

