

ICs/LSIs for Audio

■ For Compact Disc Player

Type No.	Operating Voltage (V)	Process	Functions	Package	No.
MN6650A	4.5 ~ 5.5	CMOS	Digital servo processor	44-QFP	L46
MN6617	4 ~ 5.5		Digital signal processing LSI, digital signal processing LSI for intermediate/leader audio	84-QFP	L59
MN6622	4 ~ 5.5		Digital signal processing LSI, digital signal processing LSI for intermediate/high-end audio	84-QFP	L59
MN6625	4.0 ~ 5.5		Digital signal processing LSI, digital signal processing LSI for intermediate/leader audio	64-QFP(a)	L51
MN6626	3.4 ~ 5.5		Digital signal processing LSI (16KRAM, PLL built-in), low voltage	64-QFP(b)	L52
MN66261	4.5 ~ 5.5		Digital signal processing LSI (16KRAM, PLL built-in), double speed	64-QFP(b)	L52
MN66271	4.5 ~ 5.5		Digital signal processing, digital servo processor DF, post filter built-in, D/A converter	80-QFS	L57
MN66271RA	4.5 ~ 5.5		Digital optical servo processor, audio data signal processor, 8 times oversampling MASH+, D/A converter	80-QFS	L57
MN662710RA	4.5 ~ 5.5		Further to MN66272RA specifications, double-speed playback function is added. (Digital data reproduction only, D/A converter assures normal reproduction.)	80-QFS	L57
MN662712RA	4.5 ~ 5.5		Further to MN66271RA specifications, audio data output function after 4 times oversampling is added.	80-QFS	L57
MN66271RAFA	4.5 ~ 5.5		MN66271RA's package derivative	84-QFP	L57
MN6618A	4.5 ~ 5.5		Digital filter LSI	42-QFP	L45
MN66181	4.5 ~ 5.5		Digital filter LSI	42-QFP	L45
MN6471	4.5 ~ 5.5		DF built-in D/A converter (interior resolution 18 bit) clock 768fs (MASH*)	40-QFP(b)	L44
MN6474A	4.5 ~ 5.5		DF built-in D/A converter (interior resolution 18 bit) clock 768fs (MASH*)	40-QFP(b)	L44
MN6475A	4.5 ~ 5.5		DF, post filter built-in, D/A converter (interior resolution 16 bit) clock 768/384fs with double speed mode (MASH*)	SO-24D	L38
MN64751	3.2 ~ 5.5		DF, post filter built-in, D/A converter (interior resolution 16 bit) clock 768/384fs (MASH*)	SO-24D	L38
MN64761	4.5 ~ 5.5		DF, D/A converter (interior resolution 16 bit) clock 768/384fs (MASH*)	42-QFP	L45
MN6479	4.75 ~ 5.25		DF, post filter built-in, D/A converter (interior resolution 16 bit) clock 384fs with double speed mode (MASH*)	USO-28D	—
MN64791	3.2 ~ 5.5		DF, post filter built-in, D/A converter (interior resolution 16 bit) clock 384fs (MASH*)	USO-28D	—
AN7097SB	3 ~ 6	Bipolar	2ch headphone amplifier	USO-28D	B83
AN8083S	3		Low voltage DC-DC converter IC	SO-16D	B67
AN8086S	3		Low voltage DC-DC converter IC	SO-16D	B67
AN8290NS	4.5 ~ 20		Spindle PWM driver, 3 phase full wave	SO-24D	B74
AN8377N	5.5 ~ 16		3 ch linear driver	16-DIP(F)	B41
AN8387S	3.5 ~ 9		2 ch linear driver for portable CD	SONF-20D	B72
AN8388S/SR	4.5 ~ 18		4 ch linear driver	HSOP-24D HSOP-24D(BH)	B76 B77
AN8800SC	5		Head amp. for digital servo (1 beam system)	VSO-42D	B86
AN8801SC	5		Head amp. for digital servo (3 beam system)	VSO-42D	B86
AN8802SC	5		Head amp. for digital servo (1 beam system)	VSO-22D	B84
AN8803SB/NSB	5		Head amp. for digital servo (3 beam system)	USONF-36D	B85
AN8389S/SR	4.5 ~ 18		4 ch linear driver	HSOP-24D HSOP-24D(BH)	B76 B77

* MASH is the trademark registered by NTT.

■ For DAT

Type No.	Operating Voltage (V)	Process	Functions	Package	No.
MN6460A	4.75 ~ 5.25	CMOS	DF built-in A/D converter (interior resolution 16 bit) clock 512fs (MASH*)	VSO-42D	L41
MN6470	4.5 ~ 5.5		DF built-in D/A converter (interior resolution 18 bit) clock 512fs (MASH*)	40-QFP(b)	L44
MN6624	4.5 ~ 5.5		Digital signal processing	124-QFP	L63
AN3841SR	4.5 ~ 5.5	Bipolar	Motor drive, 3 phase full wave	HSOP-24D	B76
AN6607NS	8 ~ 16		DC motor forward/reverse 2-speed electronic governor	SONF-16D	B68
AN7030S	$V_{cc1} = 4.5 \sim 5.5$ $V_{cc2} = 4.5 \sim 9.5$		RF signal recording/playback, head amp. equalizer	VSO-42D	B86
AN7035SC	4.5 ~ 5.5		Bit clock playback PLL, envelope detection	VSO-32D	B84
AN7036FHP	3 ~ 6		Bit clock playback PLL, envelope detection	48-QFH(d)	B96
AN8320NFA	4.5 ~ 7.5		Servo interface	48-QFP(a)	B97

* MASH is the trademark registered by NTT.

(Package Symbol) DIP = Dual-In-Line Plastic Package SSIP = Shrunk Single-In-Line Plastic Package, QFP = Quad Flat Plastic Package,
QFH = Quad Flat L-Leaded High Package, SO = Small Outline Package (PANA FLAT PACKAGE),
VSO = Very Short Pitch Small Outline Package, (F) = with Fin

ICs/LSIs for Audio

■ ICs for FM/AM Tuner

● Car Radio

Type No.	Operating Voltage (V)	Process	Functions					Package	No.
			Front End	IF	NC	MPX	AM		
AN7286S	7.2 ~ 9.0	Bipolar					●	SO-20D	B71
AN7243S	6.5 ~ 9.6		●					SO-14D	B66
AN7254	6.5 ~ 9.8		●					9-SIP	B13
AN7280S	6.8 ~ 9.2		●					SO-20D	B71
AN7283S	7.2 ~ 9.2		●					SO-20D	B71
AN7259S	7.3 ~ 9.6			●				SO-20D	B71
AN7414	6 ~ 14					●		18-ZIP	B32
AN7418S	5 ~ 9					●		SO-18D	B70
AN7463S	6 ~ 10				●	●		SO-28D	B80
AN7464S	6 ~ 10				●	●		VSO-32D	B84
AN7465K/S	6 ~ 10				●	●		28-SDIP/SO-28D	B57, B80
AN7291SC/FBP	7.2 ~ 9.6			●	●	●		VSO-42D/48-QFH(b)	B86, B94
△AN7291NSC/NFBP	7.2 ~ 9.6			●	●	●		VSO-42D/48-QFH(b)	B86, B94
AN7292SC/FBP	7.2 ~ 9.6			●	●	●		VSO-42D/48-QFH(b)	B86, B94
△AN7292NSC/NFBP	7.2 ~ 9.6			●	●	●		VSO-42D/48-QFH(b)	B86, B94
△AN7298FBP	7.2 ~ 9.6			●	●	●		48-QFH(b)	B94
△AN7297S			IF + diversity					VSO-32D	B84

△ Preliminary

● For Radios/Radio Cassette Tape Recorder

Type No.	Operating Voltage (V)	Process	Functions					Package	No.
			Front End	IF	MPX	AM	Power		
AN7017S/SB	1 ~ 2	Bipolar	●					SO-16D/USO-16D	B67, B69
AN7202S	1 ~ 4		●					SO-10D	B65
AN7203	1.8 ~ 7		●					9-SIP	B13
AN7204	2.7 ~ 7		●					9-SIP	B13
AN7205	1.5 ~ 7		●					9-SIP	B13
AN7220	2 ~ 6.5			●		●		18-DIP	B42
AN7221S	2 ~ 6			●		●		SO-18D	B70
AN7223	2.8 ~ 12			●		●		18-DIP	B42
AN7224	2.8 ~ 9.6			●		●		18-DIP	B42
AN7230S	1 ~ 4			●		●		SO-18D	B70
AN7420	3.5 ~ 12				●			9-SIP	B13
AN7421	1.8 ~ 6				●			9-SIP	B13
AN7024	3 ~ 7			●	●	●		18-ZIP	B32
AN7025K/S	1.8 ~ 6.6			●	●	●		22-SDIP/SO-24D	B54, B74
AN7232SB	0.95 ~ 2			●	●	●		USO-28D	B83
AN7238K/S	3.6 ~ 7			●	●	●		22-SDIP/SO-24D	B54, B74
AN7002K/S	1.8 ~ 6 1.8 ~ 4.5					●	●	22-SDIP/SO-24	B54, B74
AN7006NS	1.8 ~ 5		●	●		●		SO-28D	B80
AN7007S/S(U)	1.8 ~ 4		●	●		●		SO-28D/VSO-28D	B80, B83
AN7008K	1 ~ 2					●	●	22-SDIP	B54
AN7009S	1.8 ~ 4.5					●	●	SO-24D	B74
AN7235S	1.8 ~ 5		●	●	●	●		SO-24D	B74

● For Hi-Fi

Type No.	Operating Voltage (V)	Process	Functions					Package	No.
			Front End	IF	DET	MPX	AM		
AN7273	3 ~ 12	Bipolar		●	●		●	18-DIP	B42
AN7470	9 ~ 14					●		16-DIP(c)	B40
AN7472S	4.5 ~ 9					●		SO-28D	B80

(Package Symbol) SIP = Single-In-Line Plastic Package, ZIP = Zigzag In-Line Plastic Package, SO = Small Outline Package (PANA FLAT PACKAGE),

SDIP = Shrink Dual-In-Line Plastic Package, VSO = Very Short Pitch Small Outline Package, USO = Ultra Small Outline Package

ICs/LSIs for Audio

■ For Cassette, Cassette Deck

● Equalizer Amp.

Type No.	Operating Voltage (V)	Process	Functions	Package	No.
AN3991NS	4 ~ 9	Bipolar	Recording/playback amplifier circuit for tape recorder, VCR (with microphone amp.)	SO-20D	B71
AN6221S	1.8 ~ 4.5		Pre-amplifier circuit with AGC for low voltage	SO-20D	B71
AN7015S	1.8 ~ 7.5		Low voltage dual pre-amplifier circuit	SO-22D	B73
AN7310N	5 ~ 14		Dual pre-amplifier circuit	9-SIP	B13
AN7311	5 ~ 14		Dual pre-amplifier circuit	9-SIP	B13
AN7312	5 ~ 14		Dual pre-amplifier circuit	14-DIP(a)	B36
AN7316	3.5 ~ 12		Recording/playback amp. for radio cassette	16-DIP(a)	B38
AN7317	3.5 ~ 12		Recording/playback amp. for radio cassette (with REC mute)	16-DIP(b)	B39
AN7318S	5 ~ 14		Dual pre-amplifier circuit	SO-16D	B67
AN7351K/SC	$\pm 4.5 \sim \pm 7$		Hi-Fi W cassette deck recording/playback pre-amp.	42-SDIP/VSO-42D	B59, B86
AN7352S	$\pm 4.5 \sim \pm 6.5$		VCA, TPS built-in W cassette deck recording/playback pre-amp.	SO-28D	B80
AN7353S	$\pm 4.5 \sim \pm 6.5$		Record amplifier for EQ control	SO-24D	B74

● Noise Reduction

Type No.	Operating Voltage (V)	Process	Functions	Package	No.
AN6290S	1.8 ~ 9	Bipolar	dbx system compander	SO-20D	B71
AN6291/S	1.8 ~ 14		Cassette deck, radio cassette dbx NR	22-DIP/SO-22D	B46, B73
AN7354SC	$\pm 4.5 \sim \pm 6.5$		Line mute/Level meter drive built-in Dolby B/CNR	VSO-42D	B86
▲AN7355SC	$\pm 4.5 \sim \pm 6.5$		Line mute/Level meter drive built-in Dolby B NR	VSO-32D	B84
AN7367K	$\pm 5 \sim \pm 7$		Dolby dbx Nr	28-SDIP	B57
AN7368K	$\pm 5 \sim \pm 7$		Dolby dbx Nr	28-DIP	B57
AN7374K	9 ~ 13		Dual dolby B/C NR for cassette deck	28-SDIP	B57
AN7375N/NS	1.8 ~ 4.5		Dolby B type NR for low voltage cassette tape recorder	18-DIP/SO-18D	B42, B70

▲ Under development

● Low Freq. Pre-Power Amp. (1-Chip)

Type No.	Operating Voltage (V)	Process	Single	Dual	BTL	Conditions		Output Power (mW)				Package	No.
						V _{CC} (V)	R _L (Ω)	< 30	> 30	> 100	> 300		
AN7082K	1.8 ~ 6	Bipolar		●		3	32			●	○	22-SDIP	B54
AN7085NS	1.8 ~ 4.5		●		●	3	8			●	○	SO-20D	B71
AN7086S	1.8 ~ 4.5		●			3	8				●	SO-24D	B74
AN7105	4.2 ~ 9			●		6	8				●	18-DIP	B42
AN7106K	1.8 ~ 4.5			●		3	4			●		24-SDIP	B55
AN7108	1.8 ~ 6			●		3	32		●	○		16-DIP(b)	B39
AN7109S	1.8 ~ 4.5			●		3	32		●			SO-28D	B80

● Standard ○ Application available

● Others (Tape Index Detection, Reverse Control, etc.)

Type No.	Operating Voltage (V)	Process	Functions	Package	No.
AN6230S	1.8 ~ 6	Bipolar	Low freq. power amp. circuit for cassette tape recorder (450mW)	SO-18D	B70
AN6262N	4.5 ~ 16		Tape index detection circuit for tape sensor of radio cassette tape recorder/cassette deck (Output of tape index = Low)	9-SIP	B13
AN6263N	4.5 ~ 16		Tape index detection circuit for tape sensor of radio cassette tape recorder/cassette deck (Output of tape index = High)	9-SIP	B13

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SO = Small Outline Package (PANA FLAT PACKAGE), VSO = Very Short Pitch Small Outline Package

ICs/LSIs for Audio

■ ICs for Audio Common Use

● DC Volume, Graphic Equalizer

Type No.	Operating Voltage (V)	Process	Functions	Package	No.
AN7332S	3 ~ 14.4	Bipolar	2 channel 4 elements graphic equalizer (Quasi 5 elements)	SO-24D	B74
AN7333K/S	4 ~ 14		4 elements graphic equalizer for radio, radio cassette tape recorder	24-SDIP/SO-24D	B55, B74
AN7337N	± 4 ~ ± 18		7 elements graphic equalizer	20-DIP(b)	B45
AN7381	5.4		Tone control circuit	9-SIP	B13
AN7382	24		DC volume, tone control circuit	18-SIP	B31
AN7384N	± 7 ~ ± 11		Electrical volume for cassette deck	16-DIP(c)	B40

● Low Freq. Pre-Amplifier Circuit

Type No.	Operating Voltage (V)	Process	Functions	Package	No.
AN360	4 ~ 16	Bipolar	High advantage low noise amp. for car stereo	7-SIP	B11
AN7060	(+ 60, - 6)		Hi-Fi audio amp., pre-driver	9-SIP	B13
AN7062N	80		Hi-Fi audio amp., pre-driver	18-DIP	B42

● Low Freq. Power Amplifier

Type No.	Operating Voltage (V)	Process	Single	Dual	BTL	Conditions		Output Power (W)					Package	No.
						V _{CC} (V)	R _L (Ω)	≥ 1	> 2	> 4	> 5	> 10		
AN7100S	1 ~ 3	Bipolar		●		1.5	150	< 1					SO-18D	B70
AN7112	4 ~ 14		●			6	8	< 1					9-SIP	B13
AN7117	2.5 ~ 9		●			6	4	●					9-SIP	B13
AN7118S	1.8 ~ 4.5			●	○	3	4	< 1					SO-18D	B70
AN7124	6 ~ 15			●		9	3			●			12-SIP(F)	B23
AN7135	5 ~ 18			●	○	15	3				●	○	12-SIP(FP)	B24
AN7139	6 ~ 18			●		9	4		●				12-SIP(F)	B23
AN7140	6 ~ 16		●			13.2	4			●			9-SIP(F)	B15
AN7141	3.8 ~ 18		●			6	4	●					9-SIP	B13
AN7142	3.8 ~ 18			●	○	±(6)9	4	± ●	●				16-DIP(F)	B41
AN7147N/49N	5 ~ 22			●	○	× (9)12	3		± ●		●	○	12-SIP(FP)	B24
AN7148	6 ~ 18			●	○	± (9)12	4					○	12-SIP(FP)	B24
AN7158N	5 ~ 20			●	○	16	8				●	○	12-SIP(P)	B25
AN7163	7 ~ 20				●	13.2	4					●	12-SIP(FP)	B24
AN7164	8.3 ~ 24				●	21	8					●	12-SIP(FP)	B24
AN7164N	8.3 ~ 24				●	26.4	8					●	12-SIP(FP)	B24
AN7168	7 ~ 24			●	○	13.2	4				●	○	12-SIP(FP)	B24
AN7169	5 ~ 24			●	○	13.2	4				●	○	12-SIP(FP)	B24
AN7170	8 ~ 35		●			26.4	8				●	○	11-SIP(P)	B21
AN7171NK	7 ~ 18			●	●	13.2	4					●	16-ZIP(FP)	B30
AN7172NK	7 ~ 18			●	●	13.2	4					●	9-SSIP(F)	B16
AN7173K	7 ~ 18			●	●	13.2	4					●	16-ZIP(FP)	B30
AN7174K	8 ~ 18			●	○	13.2	4					●	16-ZIP(FP)	B30
AN7177	8 ~ 18			●	●	13.2	4					●	23-ZIP(FP)	B33
AN7178	8 ~ 18			●		13.2	4				●		12-SIP(FP)	B24
△AN7190K/91K	8 ~ 18			●	●	13.2	4					●	16-ZIP(FP)	B30
AN7133N	6 ~ 24			●		12	3			●			23-ZIP(F)	B33
AN7134NR	6 ~ 18			●		15	3				●		23-ZIP(F)	B33

+ No heat Sink ● Standard ○ Application available △ Preliminary

(Package Symbol) SIP = Single-In-Line Plastic Package, DIP = Dual-In-Line Plastic Package, (P) = Power Type, (F) = with Fin

SO = Small Outline Package (PANA FLAT PACKAGE), SDIP = Shrunk Dual-In-Line Plastic Package,

SSIP = Shrunk Single-In-Line Plastic Package, ZIP = Zigzag-In-Line Plastic Package, (FP) = Power Type with Fin

ICs/LSIs for Audio

■ ICs for Motor

Type No.	Operating Voltage (V)	Process	Functions	Package	No.
AN6608	8 ~ 16	Bipolar	DC motor forward/reverse 2-speed electronic governor	16-DIP(F)	B41
AN6609N/NS	8 ~ 16		DC motor forward/reverse 2-speed electronic governor	16-DIP(F)/HSOP-24D(BH)	B41, B77
AN6612/S	1.8 ~ 4		Motor control circuit	8-DIP/SO-8D	B35, B64
AN6650/S	1.8 ~ 7		Motor control circuit	8-DIP/SO-8D	B35, B64
AN6651	3.5 ~ 14		Motor control circuit	TO-126(4 pin)	B6
AN6652	6 ~ 20		Motor control circuit	TO-126(4 pin)	B6
AN6655S	1.05 ~ 3.6		Forward/reverse electronic governor for micro-motor	SO-16D	B67
AN6656/S	1.8 ~ 6		Forward/reverse electronic governor for micro-motor	16-DIP(c)/SO-16D	B40, B67
AN6657/S	4.5 ~ 14		Forward/reverse electronic governor for micro-motor	16-DIP(c)/SO-16D	B40, B67
AN6659S	1 ~ 2.5		Electronic governor for 1.5V micro-motor	SO-10D	B65

■ ICs for Display Driver

Category	Type No.	Operating Voltage (V)	Display Division		Functions				Remarks	Package	No.
			Log.	Linear	5 marks	7 marks	12 marks	Input amp. built-in			
FL	AN6870N	(20, 15)	●						18 marks × 2 ch peak with hold	28-DIP	B49
L E D	AN6875	12 ~ 16	●		●					9-SIP	B13
	AN6876	12 ~ 16		●	●					9-SIP	B13
	AN6877	5 ~ 16		●		●		●		16-DIP(F)	B41
	AN6878	5 ~ 16	●			●		●		16-DIP(F)	B41
	AN6879	4.4 ~ 12	●			●		●		16-DIP(c)	B40
	AN6882	6.2 ~ 16	●			●		●	With dot, bar display switch pins	16-DIP(c)	B40
	AN6884	3.5 ~ 16	●		●			●		9-SIP	B13
	AN6886	4 ~ 16	●		●			●	Priority of large input of 2 input amp.	14-DIP(a)	B36
	AN6887	5 ~ 16	●			●		●	Priority of large input of 2 input amp., 2 LED series	16-DIP(c)	B40
	AN6888	5 ~ 16	●		● (× 2)			●	5 marks × 2 ch, 2 LED series	18-DIP	B42
	AN6891	7 ~ 16	●				●	●	3 LED series	18-DIP	B42

■ Others

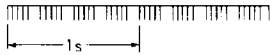
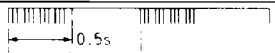
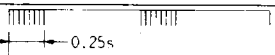
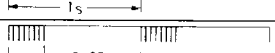
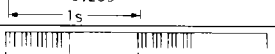
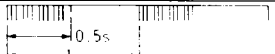
Type No.	Operating Voltage (V)	Process	Functions	Package	No.
MN6631A	± 15, 5	CMOS	5 channel CMOS analog electrical switch for audio	18-DIP(a)	L10
MN6632A	5		2 channel CMOS electrical volume for audio	18-DIP(a)	L10
MN6633	5		1 channel CMOS electrical volume for audio	16-DIP(a)	L7
AN7072N	74	Bipolar	High breakdown voltage audio amp. muting circuit	7-SIP	B11
AN7074K	10 ~ 23		Hi-Fi audio power amp. muting control	13-SSIP	B27
AN8072N	10.5 ~ 16		Multi output power supply regulator	12-SIP(F)	B23

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ICs/LSIs for Industrial and Home Use

■ For Analog Clock (MOS ICs)

Motor Type	Type No.	Oscillating Frequency (MHz)	Supply Voltage (V)	Power Supply Current max. (μA)	Motor Driving Pulse Output		Alarm Signal Output Waveform	Package	No.	Remarks
					Frequency (Hz)	Pulse Width (ms)				
Step motor	MN6057	4.19	1.5	35	0.5	1s		8-DIP	L1	
	MN6251			35	0.5	31.25		8-DIP	L1	
	MN6252			35	0.5	31.25		8-DIP	L1	
	MN6255		5.0	500	0.5	46.875	—	8-DIP	L1	For car clock
	MN6253B	32kHz	1.5	10	0.5	31.25		8-DIP	L1	
	MN6260B			10	0.5	31.25		8-DIP	L1	
	MN6260C			10	0.5	31.25		8-DIP	L1	
	MN6263			10	0.5	15.625		8-DIP	L1	
	MN6275AS			3	0.5	31.25		SO-8D	L29	
Synchronous motor	MN6092	4.19	1.5	50	16	31.25	—	8-DIP	L1	
	MN6093			1mA	64	7.8125	—	8-DIP	L1	For car clock
	MN6094			35	16	31.25		8-DIP	L1	
	MN6095			35	16	31.25		8-DIP	L1	
Step/synchronous motor	MN6220	4.19	1.5	70	0.5/16	1s/31.25	—	18-DIP(a)	L10	Timer indication

■ For Facsimile (MOS ICs)

Type No.	Operating Voltage (V)	Process	Functions	Package	No.	Remarks
MN86151/B	5	CMOS	LSI (6 bit) for shading compensation	44-QFP	L46	
MN86153	5		Image signal processing for contact-type image sensor	84-QFP	L59	
MN86157	5		LSI (7 bit) for shading compensation	44-QFP	L46	
MN8601	5		Digital signal processor	64-SDIP	L24	
MN8605*	5		Facsimile modem (Specification modification possible by external ROM)	84-PLCC	L82	
MN86051*	5		Facsimile modem (ROM built-in)	84-PLCC	L82	
MN86062	5		Band compression extension LSI for facsimile	84-QFP	L59	
MN8354	5		Half tone processor; ASIC available	84-QFP	L59	

* Sales by Matsushita Denso Inc.

(Package Symbol) DIP = Dual-In-Line Plastic Package, SDIP = Shrunk Dual-In-Line Plastic Package, QFP = Quad Flat Package,
SO = Small Outline Package (PANA FLAT PACKAGE), PLCC = Plastic Leaded Chip Carrier.

ICs/LSIs for Industrial and Home Use

■ For Telephone

Type No.	Operating Voltage (V)	Process	Functions	Package	
					No.
MN6106A	2.5 ~ 5.5	CMOS	High-function dialer LSI, (DTME/Outpulse switching) with shorten dial and auto-flash re-dial	42-QFP	L45
MN6112	2 ~ 7	MOS	Dialer CMOS LSI (popular type, DTMF/Outpulse switching)	22-SDIP	L19
MN6114	2 ~ 7		Dialer CMOS LSI (high end, DTMF/Outpulse switching) with shorten dial and auto-flash re-dial	28-SDIP	L20
AN6141S/SB	2 ~ 5	Bipolar	Compander ICs for cordless phone	SO-24D/USO-24D	B74, B79
AN6150	3 ~ 11.5		Speech network	16-DIP(b)	B39
AN6152	3 ~ 11.5		Speech network	16-DIP(b)	B39
AN6153N/NS	2.5 ~ 11.5		Speech network	16-DIP(b)/SONF-16D	B39, B68
AN6154NK/NS	3 ~ 11.5		Speech network	24-SDIP/SO-24D	B55, B74
AN6157NK	3 ~ 11.5		Speech network	22-SDIP	B54
AN6162SC	2 ~ 5.5		Narrow freq. band FM reception	VSO-32D	B84
AN6164K/S	4.5 ~ 8		Regular voltage drive type speech network	28-SDIP/SO-28D	B57 B80
AN6166NK	$V_{CC} = 2.5 \sim 4.5$ $V_I = 1 \sim 8$		Cordless phone base set speech network	30-SDIP	B58
AN6167S/SB	2 ~ 5		Cordless phone handset speech network	USO-28D/USO-28D	B80, B83
AN6170/S	10 ~ 22		Ringer, 1 call tone tremolo (Rumbling starting current variable type)	8-DIP/SO-8D	B35, B64
AN6171	10 ~ 22		Ringer, 4 call tone tremolo (High end)	14-DIP(a)	B36
AN6172	10 ~ 22		Ringer, 1 call tone tremolo (Rumbling starting voltage variable type)	8-DIP	B35
AN6175K/FBP	3 ~ 12		ICs for hands-free telephone speech network	42-SDIP/44-QFH	B59, B91
AN6176	1.8		ICs for security	SO-24D	B74
AN6182NK/NS			Recording/playback ICs for answering phone	24-SDIP/SO-24D	B55, B74
AN6290S	1.8 ~ 9		ICs for dbx system compander	SO-20D	B71
AN6425K	3 ~ 12		Speech network	28-SDIP	B57
AN6426NK	3 ~ 12		Hands-free speech network	42-SDIP	B59
AN6480	5.6 ~ 8.4		IF amp. for car telephone	18-DIP	B42
AN6448NFBP	5		ICs Speech network built-in cross point switch	64-QFH(c)	B102
AN6657/S	5	Forward/reverse electronic governor	SO-16D	B39, B67	

■ For Communications Equipment

Type No.	Operating Voltage (V)	Process	Functions	Package	
					No.
MN1295	15	MOS	Speech network switching, 4×4 cross point switch	16-DIP(b)	L8
MN6105/S	15		Speech network switching, 4×8 cross point switch	22-DIP	L13
MN6126FA	5		Tone squelch for communication control	42-QFP	L45
MN6126A	5		Tone squelch for communication control	40-DIP(a)	L16
MN6127A	5		1 chip all dual communication modem	28-DIP(a)	L15
MN61113	2.6 ~ 3.5	CMOS EEPROM	3V single power supply, EEPROM for serial input/output 2k bit ID code	SO-8D/8-DIP	L29, L1
MN6310	2.6 ~ 3.5		Serial input/output 512 bit EEPROM for ID code, programming time $V_{CC} = 5V$, $V_{TP} = 21V$	SO-8D/8-DIP	L29, L1
MN6152S/U	1.8 ~ 2.5	CMOS	Variable dividing PLL (200MHz: $V_{DD} = 2V$)	SO-16D/USO-16D	L32/L33
MN6153U	1.0 ~ 1.4		Variable dividing PLL	USO-16D	L33
AN93C02NSB	1.0 ~ 1.8		IF amplifier circuit for a pager	USO-16D	L33

■ For Timer

Type No.	Operating Voltage (V)	Process	Functions	Package	
					No.
MN6076	— 12	MOS	Two operation digital AC clock timer (Fluorescent lamp drive)	40-DIP(a)	L16
MN6139	4.5 ~ 5.5	CMOS	Timer for dish dryer	14-DIP(a)	L4
AN6780/S	4.5 ~ 12	Bipolar	Long hour CR timer	7-SIP/SO-14D	B11, B66
AN6781	4.5 ~ 12		Residual amount indication CR timer	16-DIP(a)	B38
AN6783S	5		ICs for long hour CR oscillation timer	SO-8D	B64

(Package Symbol) SIP = Single-In-Line Plastic Package, DIP = Dual-In-Line Plastic Package, SDIP = Shrink Dual-In-Line Plastic Package,

QFP = Quad Flat Package, QFH = Quad Flat L-Leaded High Package, SO = Small Outline Package (PANA FLAT PACKAGE), USO = Ultra Small Outline Package, VSO = Very Short Pitch Small Outline Package

ICs/LSIs for Industrial and Home Use

■ Others

Type No.	Operating Voltage (V)	Process	Functions	Package	
					No.
▲AN8610SB/SR	4 ~ 5.5	Bipolar	SCSI active terminator	USONF-28D HSOP-24D	—
MN871102	5	CMOS	Floppy disk controller for FDC (765 type)	100-QFP(b)	L62
MN66402	5.0 ± 0.25		Data processing for CD-ROM (ECC)	100-QFP(a)	L61
MN83852A	± 5		Full color TFT LCD source driver	TCP	—
DN8640S	4 ~ 6	Bi-CMOS	3 × 8 bit shift register latch driver	USONF-36D	B85
DN8643S	4 ~ 6		24 bit shift register latch driver	USONF-36D	B85
DN8646FBP	4 ~ 6		4 × 8 bit shift register latch driver	44-QFH	B91
DN8648FBP	4 ~ 6		32 bit shift register latch driver	44-QFH	B91
DN8649FBP	4 ~ 6		2 × 16 bit shift register latch driver	44-QFH	B91
DN8657S	4.5 ~ 5.5		LED driver, display driver (16 bit)	SONF-28D	B81
DN8659S	4.5 ~ 5.5		LED panel display driver (8 bit)	SONF-20D	B72
△DN8665S	4.5 ~ 5.5		LED driver, high precision (8 bit)	SONF-20D	B72

△ Preliminary ▲ Under development

(Package Symbol) QFH = Quad Flat L-Leaded High Package, SO = Small Outline Package (PANA FLAT PACKAGE).

USONF = Ultra-Small Outline Non-Fin.