LC7561

T-74-05-01

3057

CMOS LSI

Graphic Equalizer's Spectrum Analyzing Display LCD Driver

Use

- Graphic equalizer's spectrum analyzing display LCD driver

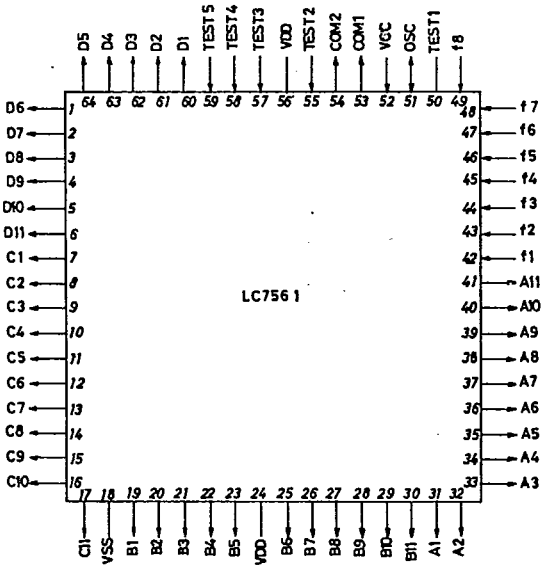
Features

(1) 8-band display: 11 x 8 segments
(Display of bandpass signal strength → Spectrum analyzing display: 8 bands 2dB/step, 11-dot display)
(2) The signal strength display input is the L/R mixing input.
(The mixing circuit is connected externally.)
(3) Display unit: Dynamic drive of LCD. 1/2duty, 1/2bias (5V rating)
(4) Bandpass filter for display: External equivalent filter

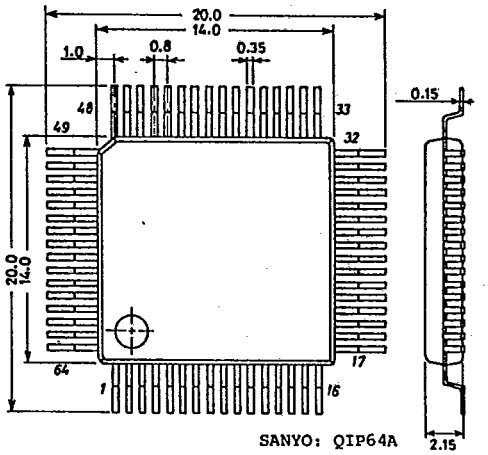
Absolute Maximum Ratings at Ta=25°C, V_{SS}=0V

				unit
Maximum Supply Voltage	$V_{DD}max$	V_{DD}	V_{SS} to V_{SS}+15	V
	$V_{CC}max$	V_{CC}	V_{SS} to V_{SS}+7	V
Maximum Input Voltage	$V_{I1}max$	TEST2,TEST3	V_{SS}-0.3 to V_{CC}+0.3	V
	$V_{I2}max$	f1tof8,TEST1,TEST4, TEST5	V_{SS}-0.3 to V_{DD}+0.3	V
Maximum Output Voltage	$V_{O}max$	A1toA11,B1toB11,COM1 C1toC11,D1toD11,COM2	V_{SS}-0.3 to V_{CC}+0.3	V
Allowable Power Dissipation	Pdmax	Ta≦75°C	200	mW
Operating Temperature	Topg		-30 to +75	°C
Storage Temperature	Tstg		-40 to +125	°C

Pin Assignment



Case Outline 3057-Q64AIC
(unit:mm)



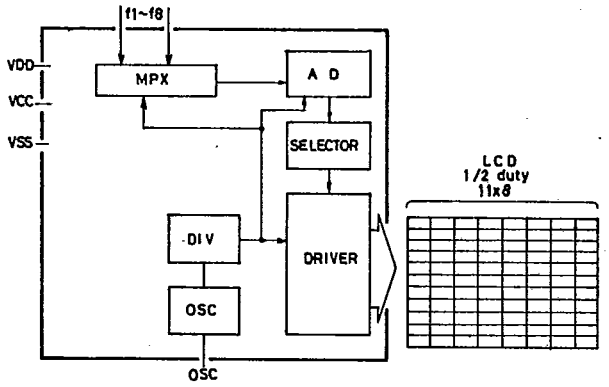
Allowable Operating Conditions at Ta=25°C, V_{SS}=0V

				min	typ	max	unit
Supply Voltage	V_{DD}	V_{DD}	C of 0.1uF or greater must be connected.	7.5	13.0	14.0	V
	V_{CC}	V_{CC}		4.0	5.0	5.5	V
External CR	Rosc	OSC			75		kohm
	Cosc	OSC			0.0033		uF

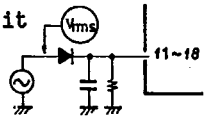
Electrical Characteristics at Ta=25°C, V_{SS}=0V

			min	typ	max	unit
Input Sensitivity	V_{in}	f1to8:V_{DD}=13V,0dB, lighted,Test Circuit *1		1.6		V
A/D Conversion Error	ΔB	f1to8:V_{DD}=13V,to 2dB step,Test Circuit *1	-1		1	dB
Current Dissipation	I_{DD}	V_{DD}			7	mA
	I_{CC}	V_{CC}			1	mA
Input OFF-State Leak Current	Ioff	f1to8			10	uA
Output 'H'-Level Voltage	V_{OH}	A1to11,B1to11,COM1, C1to11,D1to11,COM2	$0.8V_{CC}$		V_{CC}	V
Output 'L'-Level Voltage	V_{OL}	A1to11,B1to11,COM1, C1to11,D1to11,COM2	V_{SS}		$0.2V_{CC}$	V
Output 'M'-Level Voltage	V_{OM}	COM1,2 *2		$1/2V_{CC}$		V
Output Impedance	Z_O	A1to11,B1to11,COM1, C1to11,D1to11,COM2		10		kohm

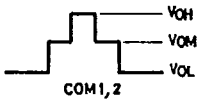
Equivalent Circuit Block Diagram



*1 Test Circuit



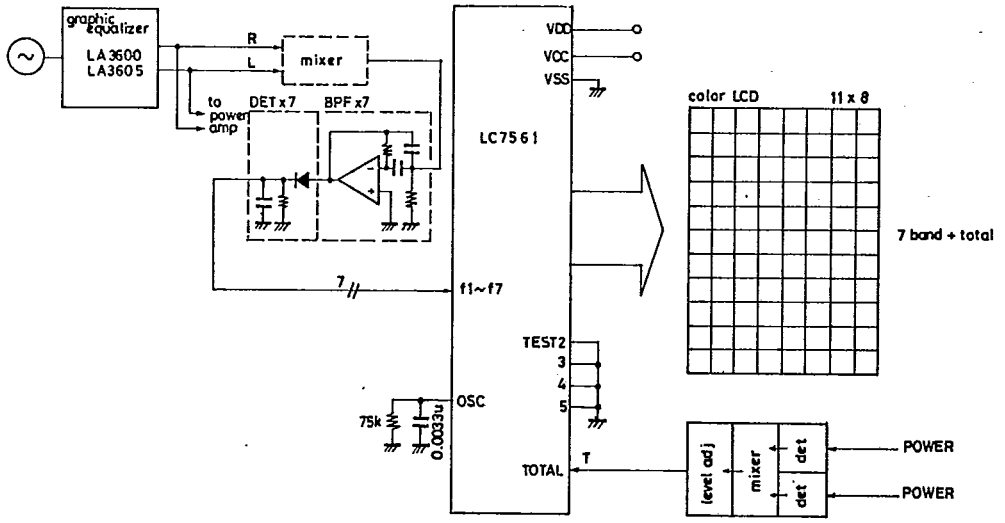
*2



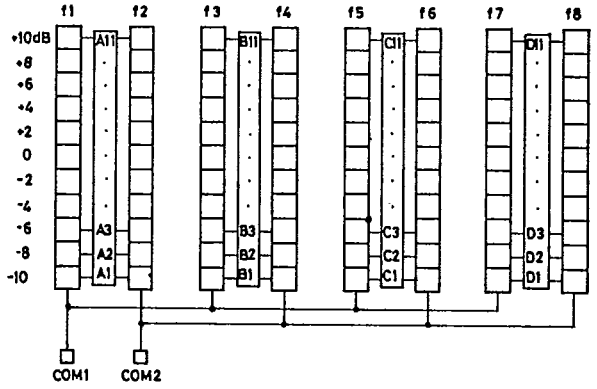
T-74-05-01

Sample Application Circuit

7-band mixing display + total display

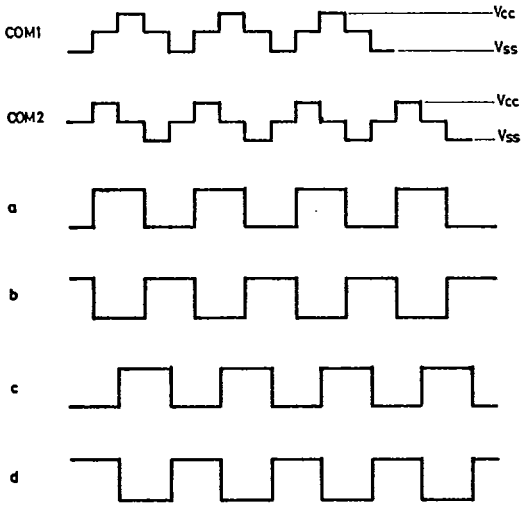


Segment Assignment



COM1,2,A1 to A11,B1 to B11,C1 to C11,D1 to D11: Pin name of LC7561

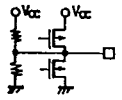
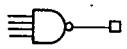
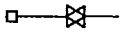
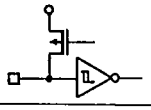
The waveforms at COM1,COM2 are as shown below. One of the four modes of a to d is selected by the selector inside the LC7561 according to the lighting state and is delivered at the segments.



	COM1	COM2
a	×	×
b	○	○
c	×	○
d	○	×

○ : Lighted
× : Unlighted

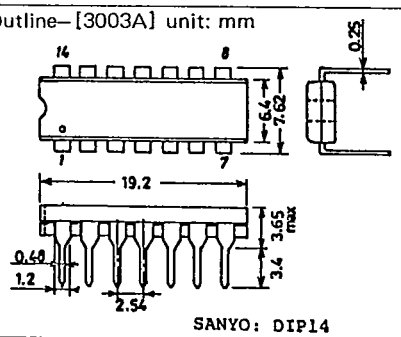
Pin Description

Pin Name	Pin No.	Pin Configuration	Description
V_{DD}	25,56		. Power supply pin, +13V typ., power supply for A/D conversion.
V_{CC}	52		. Power supply pin, +5V, power supply for logic drive.
V_{SS}	18		. Power supply pin, 0V.
COM1 COM2	53 54		. Output pins to LCD common.
A1 to 11	31 to 41		. Output pins to LCD segments. . For bands f1, f2
B1 to 11	19 to 23 25 to 30		. Output pins to LCD segments. . For bands f3, f4
C1 to 11	7 to 17		. Output pins to LCD segments. . For bands f5, f6
D1 to 11	60 to 64 1 to 6		. Output pins to LCD segments. . Band f7, total display or accessory display.
f1 to 8	42 to 49		. Used to input detection output of audio signal.
OSC	51		. Open drain type output buffer. . Used to connect external CR for OSC.
TEST4 TEST5	58 59		. IC test pin. . Connected to V_{DD} or V_{SS} in normal use.
TEST2 TEST3	55 57		. IC test pin. . Connected to V_{CC} or V_{SS} in normal use.
TEST1	50		. IC test pin. . Open in normal use.

AUDIO-USE MOS IC CASE OUTLINES

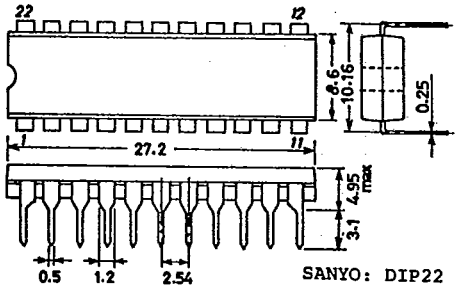
- All of Sanyo audio-use MOS IC case outlines are illustrated below.
- All dimensions are in mm, and dimensions which are not followed by min. or max. are represented by typical values.
- No marking is indicated.

Case Outline—[3003A] unit: mm



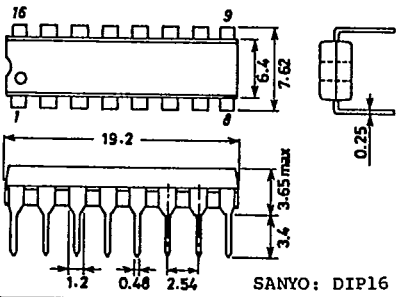
SANYO: DIP14

Case Outline—[3010A] unit: mm



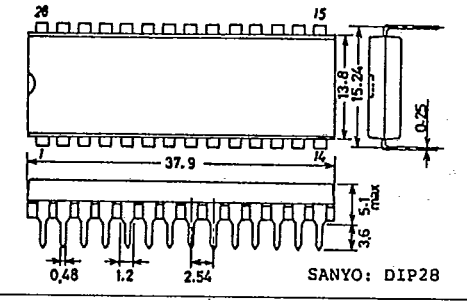
SANYO: DIP22

Case Outline—[3006B] unit: mm



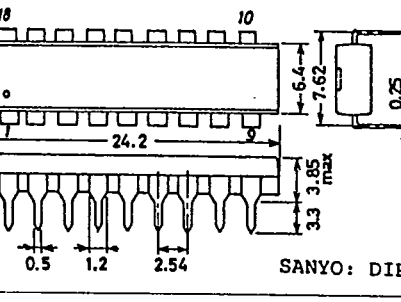
SANYO: DIP16

Case Outline—[3012A] unit: mm



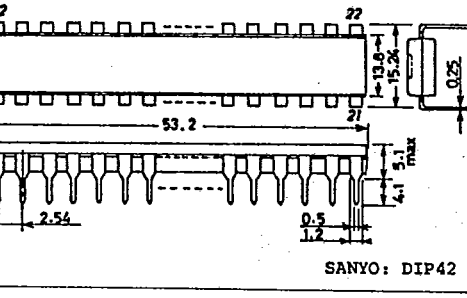
SANYO: DIP28

Case Outline—[3007A] unit: mm



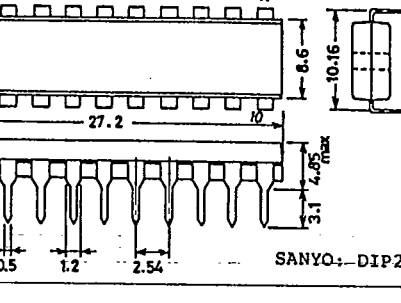
SANYO: DIP18

Case Outline—[3014A] unit: mm



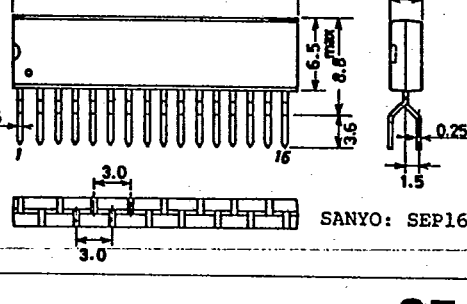
SANYO: DIP42

Case Outline—[3008A] unit: mm



SANYO: DIP20

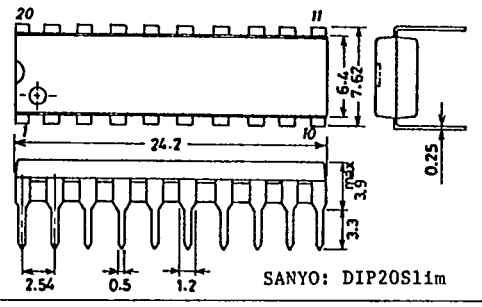
Case Outline—[3020A] unit: mm



SANYO: SEP16

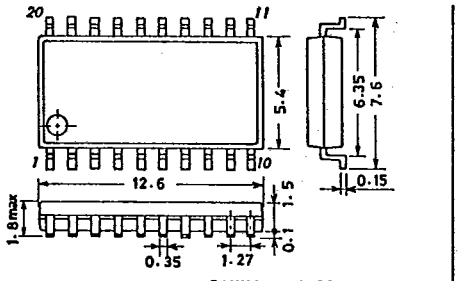
T-90-20

Case Outline—[3021B] unit: mm



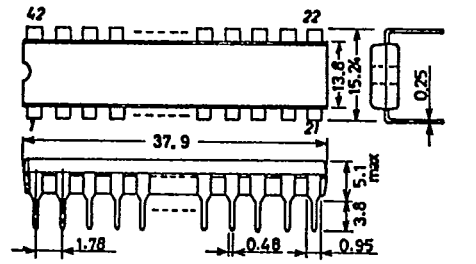
SANYO: DIP20S1im

Case Outline—[3036B] unit: mm



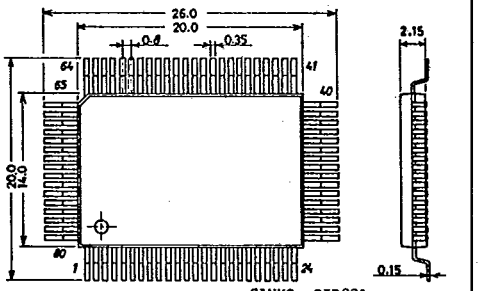
SANYO: MFP20

Case Outline—[3025B] unit: mm



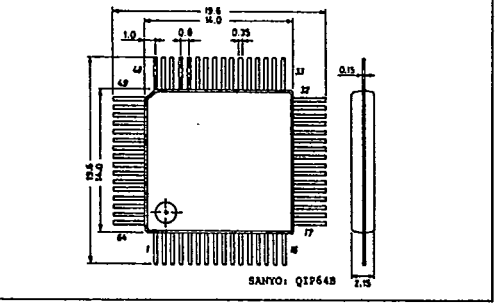
SANYO: DIP42S

Case Outline—[3044B] unit: mm



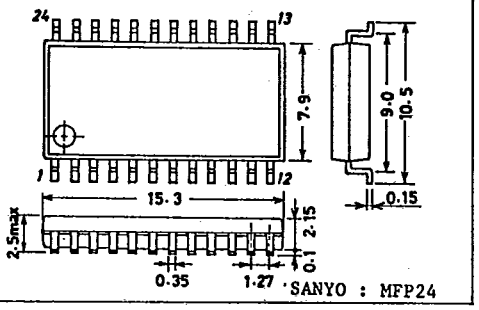
SANYO: QIP80A

Case Outline—[3026B] unit: mm



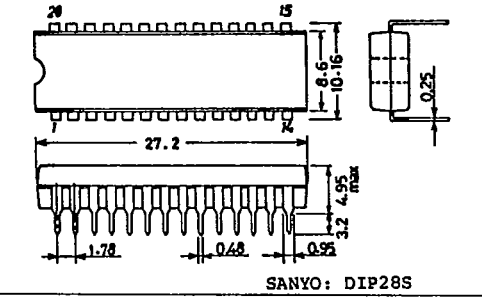
SANYO: QIP64B

Case Outline—[3045B] unit: mm



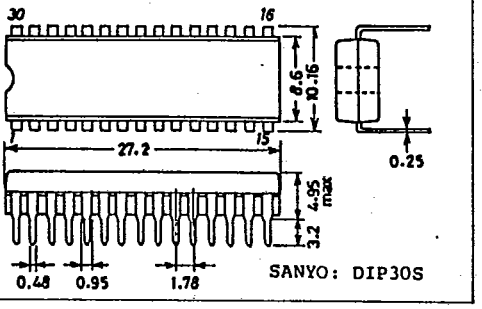
SANYO : MFP24

Case Outline—[3029A] unit: mm



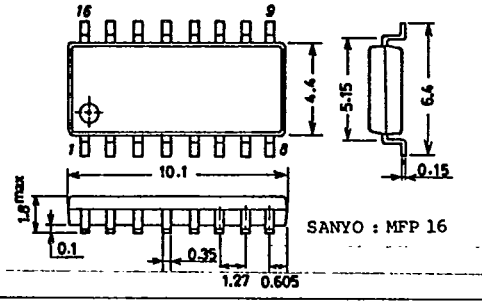
SANYO: DIP28S

Case Outline—[3047A] unit: mm



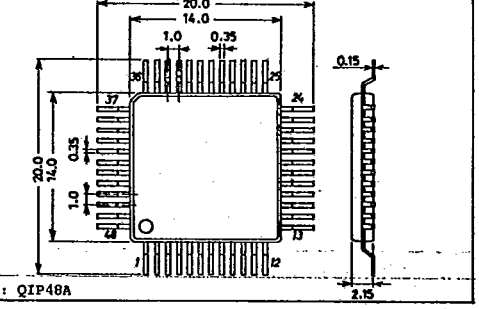
SANYO: DIP30S

Case Outline—[3035A] unit: mm



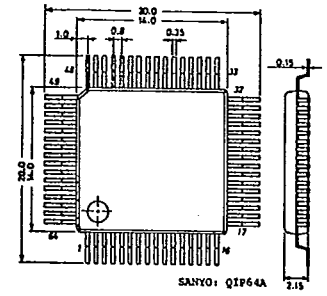
SANYO : MFP 16

Case Outline—[3052A] unit: mm

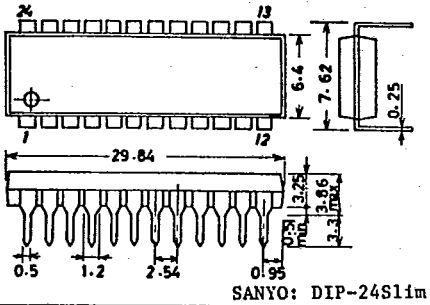


SANYO: QIP48A

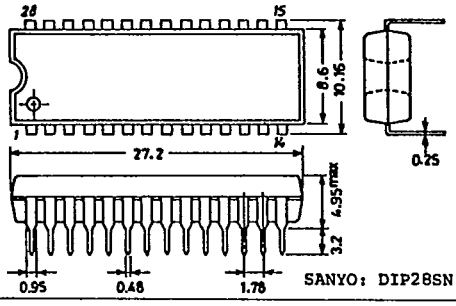
Case Outline—[3057] unit: mm



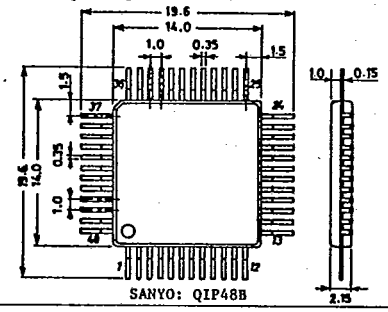
Case Outline—[3084] unit: mm



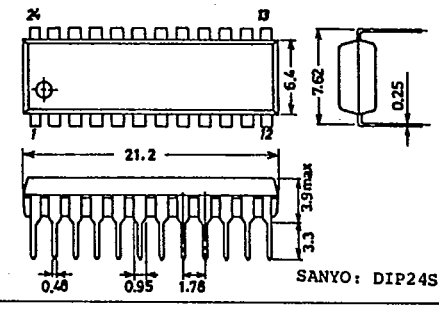
Case Outline—[3063] unit: mm



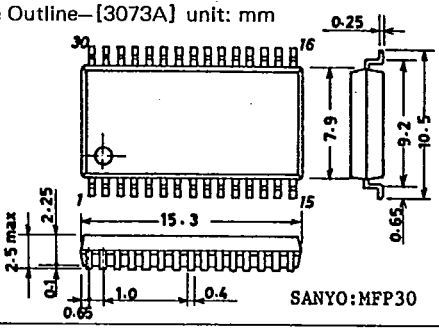
Case Outline—[3118] unit: mm



Case Outline—[3067] unit: mm



Case Outline—[3073A] unit: mm



Case Outline—[3074] unit: mm