

D/A CONVERTER

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2-Channel Serial & Binary input Floating D/A Converter

YM3016 DAC(CD)

■ OUTLINE

The YM3016 : DAC-GS is a Floating D/A converter (referred to as DAC hereafter) with the 2-channel serial and 16-bit binary input or 2's complement input. It can produce analog output (16-bit dynamic range) which has 10-bit mantissa and 7-step exponent characteristic for the input digital signal.

■ FEATURES

- 16-bit input format can select either binary or 2's complement (due to built-in floating converter logic).
- Analog output can be obtained easily by adding a buffer operational amplifier, etc.
- 16-bit wide dynamic range.
- Capable of processing PCM sound source up to 2 channels.
- Equipped with a built-in analog switch for sample hold.
- Lower noise and less harmonic distortion and outstanding temperature characteristics.
- Made by the monolithic process of highly accurate thin film resistor and CMOS.
- Package type: 16 pin plastic SOP : YM3016F
DIP : YM3016D
- +5V single power supply.

■ Electrical characteristics

① Absolute Maximum Ratings

| Item | Rating | Unit |
|-------------------------------|----------------|------|
| Supply voltage | -0.3 ~ +15.0 | V |
| High-level input voltage | $V_{DD} + 0.3$ | V |
| Low-level input voltage | $V_{SS} - 0.3$ | V |
| Operating ambient temperature | 0 ~ 70 | °C |
| Storing temperature | -50 ~ +125 | °C |

② Recommended Operating Conditions

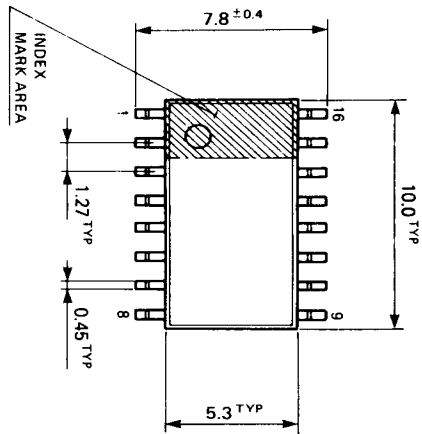
| Item | Symbol | Min | Max | Unit | |
|-------------------------------|----------------|-------|-----|----------|----|
| Supply voltage | V_{DD} | 4.75* | 5.0 | 5.25 | V |
| | V_{SS} | 0 | 0 | 0 | V |
| Input signal voltage | CLOCK | 0 | — | V_{DD} | V |
| | SD | 0 | — | V_{DD} | V |
| | SMP1, 2 ICL | 0 | — | 70 | °C |
| Operating ambient temperature | T_a | 0 | — | 70 | °C |

③ DC Characteristics

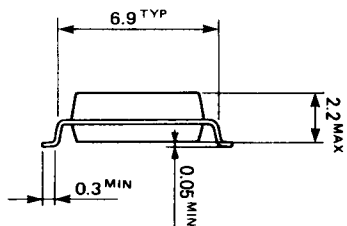
| Item | Symbol | Measuring Conditions | Min | Typ | Max | Unit |
|--------------------------|-----------|----------------------|--------------|--------------|--------------|-----------|
| High-level input voltage | V_{IH} | | $0.66V_{DD}$ | — | — | V |
| Low-level input voltage | V_{IL} | | — | — | $0.30V_{DD}$ | V |
| Input current | I_{IN} | $V_{DD} = 5.0V$ | — | — | 10^{-3} | μA |
| Analog output voltage | V_{OUT} | | — | $0.50V_{DD}$ | — | V_{p-p} |
| Supply current | I_{DD} | $V_{DD} = 5.0V$ | — | — | 6 | mA |

■ OUTLINE DIMENSIONS

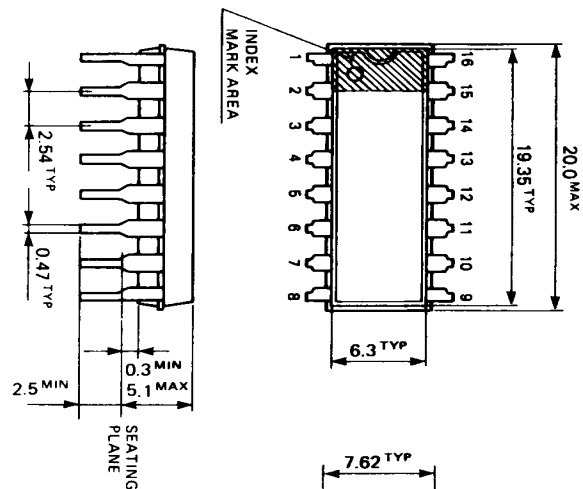
YM3016-F



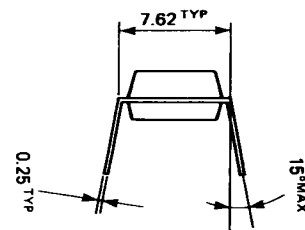
UNIT : MM



YM3016-D



UNIT : MM



■ BLOCK DIAGRAM

