

**2-HEAD PLAYBACK AND RECORD AMPLIFIER FOR VCR**

**ADVANCE DATA**

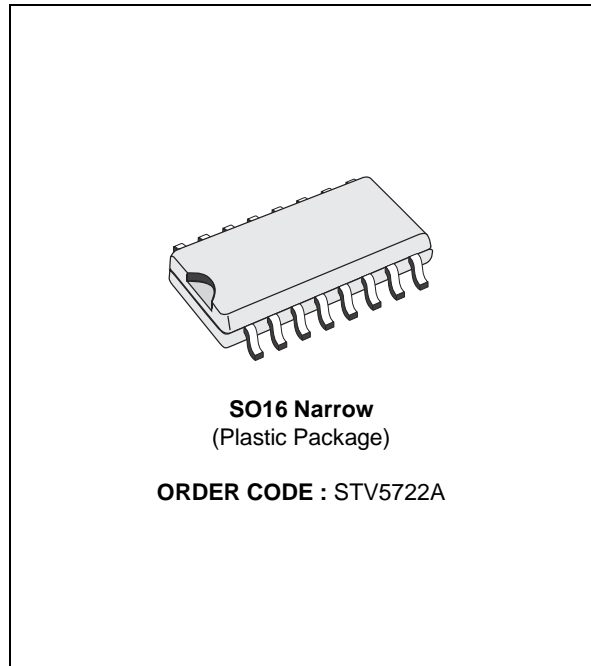
- ONE 5V POWER SUPPLY
- PLAYBACK/RECORD MODE SELECTION THROUGH A LOGIC INPUT
- SO16 PACKAGE
- NO ADJUSTMENT FOR LUMINANCE RECORDING

**PLAYBACK MODE**

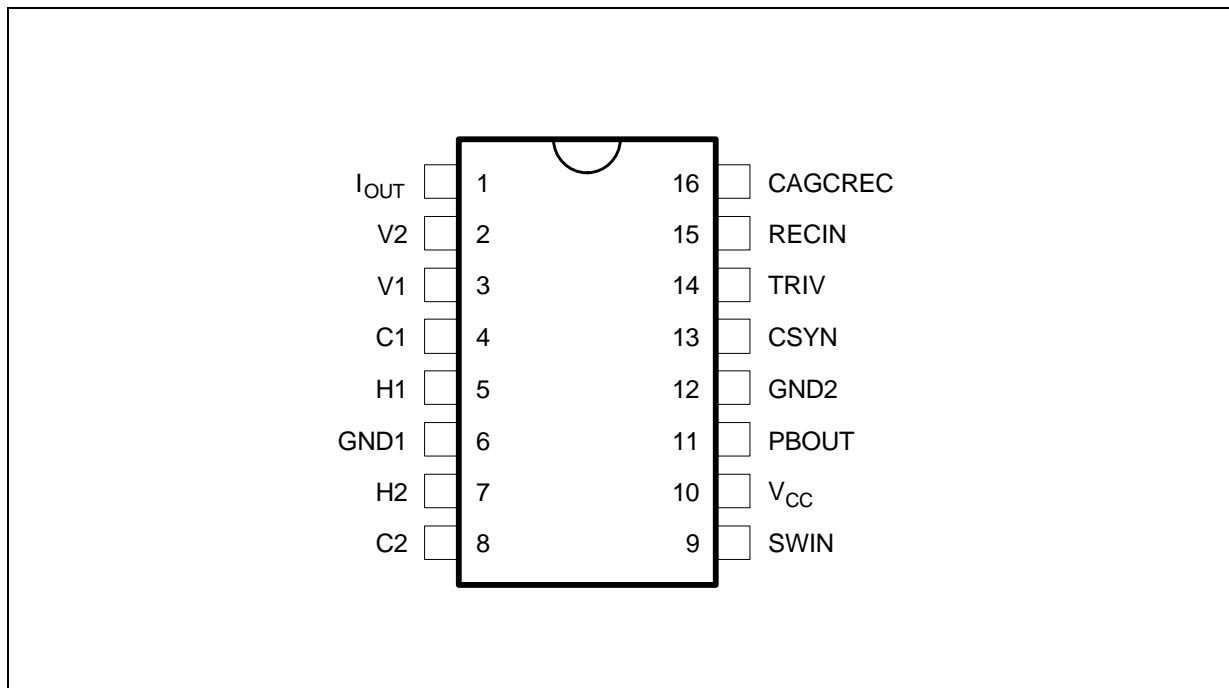
- LOW NOISE AND WIDE BAND AMPLIFIERS FOR 2 HEADS
- AUTOMATIC OFFSET CANCELLATION BETWEEN THE 2 SELECTED HEADS
- ONE PLAYBACK OUTPUT
- ONE OUTPUT FOR AUTOMATIC VIDEO TRACKING

**RECORD MODE**

- RECORD AGC AMPLIFIER SAMPLED BY SYNCHRO SIGNAL
- RECORDING SIGNAL LEVEL ADJUSTABLE BY EXTERNAL RESISTOR

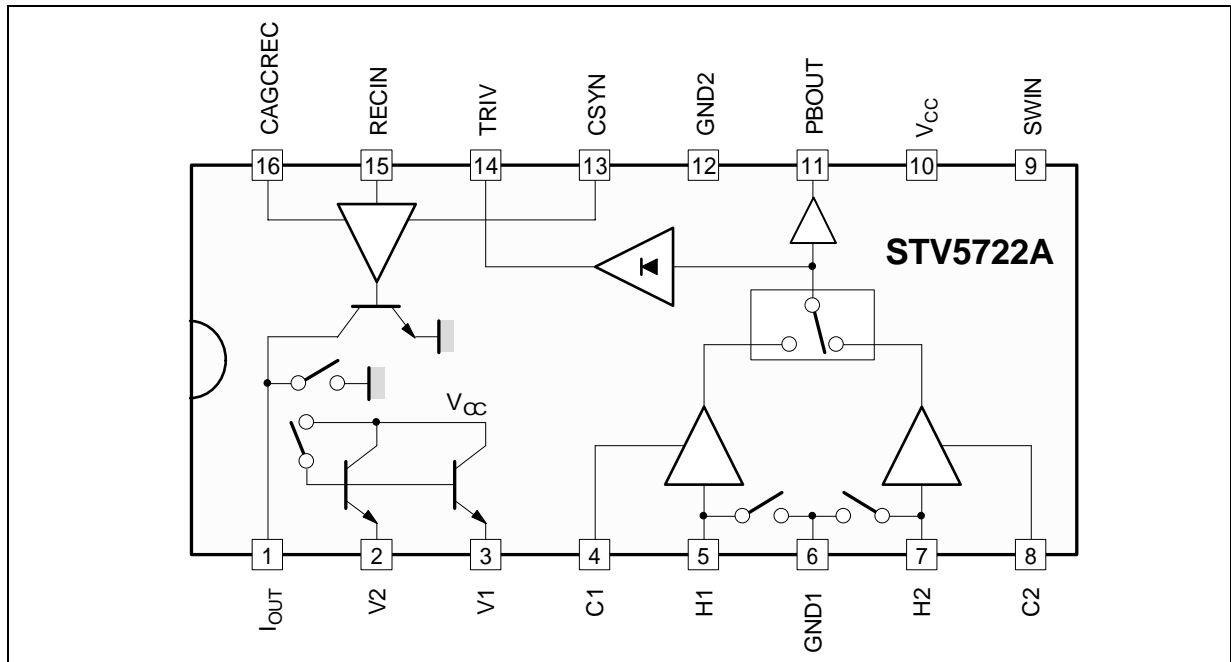


**PIN CONNECTIONS**



# STV5722A

## BLOCK DIAGRAM



5722A-02.EPS

## ABSOLUTE MAXIMUM RATINGS

| Symbol     | Parameter             | Value  | Unit |
|------------|-----------------------|--------|------|
| $V_{CC}$   | Power Supply Voltage  | 6      | V    |
| $T_j$      | Junction Temperature  | 150    | °C   |
| $T_{oper}$ | Operating Temperature | 0, +70 | °C   |

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## THERMAL DATA

| Symbol        | Parameter                           | Value    | Unit |
|---------------|-------------------------------------|----------|------|
| $R_{th(j-a)}$ | Junction-ambient Thermal Resistance | Max. 100 | °C/W |

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## RECOMMENDED OPERATING CHARACTERISTICS

| Symbol   | Parameter                  | Min. | Typ. | Max. | Unit |
|----------|----------------------------|------|------|------|------|
| $V_{CC}$ | Power Supply               | 4.75 | 5    | 5.25 | V    |
| CAGC     | Capacitance on Pin CAGCREC | 4.7  |      |      | nF   |
| RECADJ   | Record Biasing Resistor    | 10   |      | 33   | kΩ   |

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**ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25^{\circ}\text{C}$ , unless otherwise specified)**Playback Mode** ( $V_{CC} = 5\text{V}$ , no load on Pin PBOUT, Recadj = 12k $\Omega$ )

| Symbol             | Parameter                   | Test Conditions  | Min. | Typ. | Max. | Unit                   |
|--------------------|-----------------------------|--|------|------|------|------------------------|
| PLAYBACK AMPLIFIER |                             |  |      |      |      |                        |
| I <sub>CC1</sub>   | Supply Current              |  | 19   | 29   | 39   | mA                     |
| GPB                | Playback Gain               | Sinewave 600kHz, 0.4mV <sub>PP</sub> on inputs               | 55   | 57   | 59   | dB                     |
| EN                 | Equivalent Voltage Noise    | Input grounded via I <sub>OUT</sub> Pin @ 600kHz, BW = 10kHz |      | 0.6  |      | $\frac{nV}{\sqrt{Hz}}$ |
| IN                 | Equivalent Input Current    | Input open @ 6MHz, BW = 10kHz                                |      | 1.7  |      | $\frac{pA}{\sqrt{Hz}}$ |
| CRT1               | Crosstalk                   | Sinewave @ 4MHz, 0.4mV <sub>PP</sub>                         |      | -35  | -28  | dB                     |
| RPBSW              | Playback Switch on Resistor | @ 6MHz   | 1    | 5    | 10   | $\Omega$               |
| BWLCF              | Attenuation @ 100KHz        | Reference level @ 600kHz                                     | -3   | 0    | 1    | dB                     |
| BWHCF              | Attenuation @ 8MHz          | Reference level @ 4MHz                                       | -3   | -1   | 0    | dB                     |
| C <sub>IN</sub>    | Input Capacitance           | @ 6MHz, 22nF between Vi/Hi                                   | 30   | 40   | 50   | pF                     |
| Z <sub>IN</sub>    | Input Impedance             | @ 6MHz   | 300  | 450  | 600  | $\Omega$               |
| ZCPB               | Output Resistance           | DC   | 5    | 24   | 50   | $\Omega$               |
| VDCPB1             | DC Level on Pin PBOUT       |  | 1.6  | 2    | 2.4  | V                      |
| DVDC               | Head Switch Offset          |  | -0.1 | 0    | 0.1  | V                      |
| SHPB1              | 2nd Harmonic                | Sinewave @ 4MHz, 0.4mV <sub>PP</sub>                         |      | -45  | -40  | dB                     |

## TRIV FUNCTION

|       |                  |  |     |     |     |   |
|-------|------------------|--|-----|-----|-----|---|
| TRIV0 | Output Level (1) | No input signal                              | 0   | 0.3 | 1   | V |
| TRIV1 | Output Level (2) | Sinewave @ 4MHz, 100mV <sub>PP</sub> @ PBOUT |     | 1.3 |     | V |
| TRIV4 | Output Level (3) | Sinewave @ 4MHz, 400mV <sub>PP</sub> @ PBOUT | 2.5 | 3.1 | 3.5 | V |
| TRIV6 | Output Level (4) | Sinewave @ 4MHz, 600mV <sub>PP</sub> @ PBOUT | 3.2 | 3.7 | 4.2 | V |

**Record Mode** ( $V_{CC} = 5\text{V}$ , Recadj = 12k $\Omega$ , SWR = 5V, CAGCREC = 470pF, RRCY = 2.2k $\Omega$ , RRCC = 8.2k $\Omega$ , Load 10 $\mu\text{H}$ //1k $\Omega$  for each simulated head)

| Symbol           | Parameter                           | Test Conditions  | Min. | Typ. | Max. | Unit          |
|------------------|-------------------------------------|--|------|------|------|---------------|
| RECORD AMPLIFIER |                                     |  |      |      |      |               |
| I <sub>CC2</sub> | Current Supply                      |  | 50   | 68   | 88   | mA            |
| IHA0             | DC Current through I <sub>OUT</sub> |  | 26   | 32   | 40   | mA            |
| IHA1             | Fundamental                         | VRCY = 300mV <sub>PP</sub> @ 4MHz                              | 20   | 23   | 26   | mAPP          |
| IHA2             | 2nd Harmonic                        | VRCY = 300mV <sub>PP</sub> @ 4MHz                              |      | -42  | -38  | dB            |
| BWRECL           | Attenuation at 100kHz               | Reference level @ 600kHz, AGC locked                           | -3   | 0    | 1    | dB            |
| BWRECH           | Attenuation at 8MHz                 | Reference level @ 4MHz, AGC locked                             | -2   | -0.5 | 1    | dB            |
| DVLREC           | Record AGC Sensitivity              | V <sub>IN</sub> = 300mV <sub>PP</sub> $\pm$ 3dB @ f = 4MHz     | -1   | 0    | +1   | dB            |
| RIOUT            | Output Resistance                   | $\Delta V = 5\text{V}$   |      | 800  |      | $\Omega$      |
| RSAT             | Output Stage Resistance             | $\Delta I = 10\text{mA}$                                       | 5    | 10   | 50   | $\Omega$      |
| IRN              | AGC Capacitor downloading Current   | 4.5V at CAGC Pin   |      | 165  |      | $\mu\text{A}$ |
| IRP              | AGC Capacitor uploading Current     | 0.5V at CAGC Pin, V <sub>IN</sub> = 300mV <sub>PP</sub> @ 4MHz |      | -165 |      | $\mu\text{A}$ |

## SWITCHING LEVELS

|        |                            |                                |     |     |     |               |
|--------|----------------------------|--------------------------------|-----|-----|-----|---------------|
| VSWINH | SWIN Input Threshold       | Selects head H1, 0 to 5V       | 1.5 | 2   | 2.5 | V             |
| VSWINL | SWIN Input Threshold       | Selects head H2, 5 to 0V       | 1.5 | 2   | 2.5 | V             |
| ISWINH | SWIN Input Leakage Current | 5V at SWIN input               | 5   | 18  | 50  | $\mu\text{A}$ |
| ISWINL | SWIN Input Leakage Current | 0V at SWIN input               | -50 | -25 | -5  | $\mu\text{A}$ |
| VSWRCH | SWRC Input Threshold       | Selects record mode, 0 to 5V   | 3.2 | 3.4 | 3.8 | V             |
| VSWRCL | SWRC Input Threshold       | Selects playback mode, 5 to 0V | 3.1 | 3.3 | 3.8 | V             |

5722A-04TBL

# STV5722A

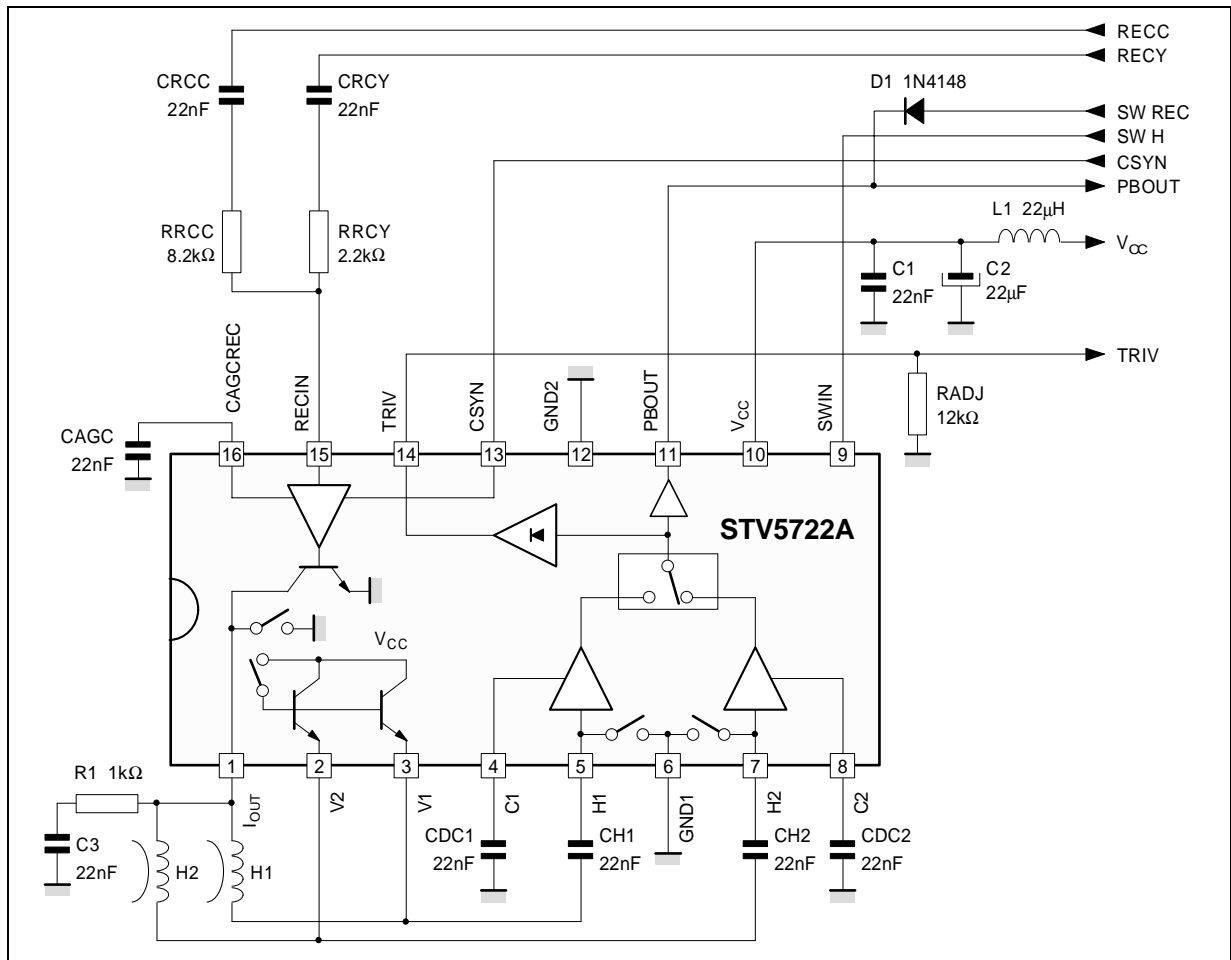
## ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25^{\circ}\text{C}$ , unless otherwise specified)

**Record Mode** ( $V_{CC} = 5\text{V}$ ,  $\text{Recadj} = 12\text{k}\Omega$ ,  $\text{SWR} = 5\text{V}$ ,  $\text{CAGCREC} = 470\text{pF}$ ,  $\text{RRCY} = 2.2\text{k}\Omega$ ,  $\text{RRCC} = 8.2\text{k}\Omega$ , Load  $10\mu\text{H}/1\text{k}\Omega$  for each simulated head) (continued)

| Symbol                       | Parameter  | Test Conditions              | Min. | Typ. | Max. | Unit          |
|------------------------------|--|------------------------------|------|------|------|---------------|
| SWITCHING LEVELS (continued) |  |                              |      |      |      |               |
| ISWRCH                       | SWRC Input Leakage Current   | 5V at SWRC input             | 2    | 5    | 8    | mA            |
| ISWRCL                       | SWRC Input Leakage Current   | 0V at SWRC input             | -20  | 0    | 20   | $\mu\text{A}$ |
| $t_{ON}$                     | Delay  | Signal appears on PBOUT      |      | 3    |      | ms            |
| $t_1$                        | Delay from playback to record :<br>Signal disappears on Pin PBOUT            | 22nF between Hi/Vi           |      | 1    |      | $\mu\text{s}$ |
| $t_2$                        | Delay from record to playback :<br>Signal appears on Pin PBOUT               | 22nF between Hi/Vi           |      | 5    |      | ms            |
| $t_3$                        | Delay from playback to record :<br>Signal appears on Pin I <sub>OUT</sub>    |                              |      | 25   |      | $\mu\text{s}$ |
| $t_4$                        | Delay from record to playback :<br>Signal disappears on Pin I <sub>OUT</sub> |                              |      | 7    |      | $\mu\text{s}$ |
| VCSYH                        | CSYN Input Threshold   | Sampling on, 0 to 5V         | 2.0  | 2.7  | 3.2  | V             |
| VCSYL                        | CSYN Input Threshold   | Sampling off, 5 to 0V        | 2.0  | 2.6  | 3.1  | V             |
| ICSYH                        | Leakage Current  | 5V at CSYN Pin, Sampling on  | -10  | 0    | 10   | $\mu\text{A}$ |
| ICSYL                        | Leakage Current  | 0V at CSYN Pin, Sampling off | -50  | -16  | -5   | $\mu\text{A}$ |

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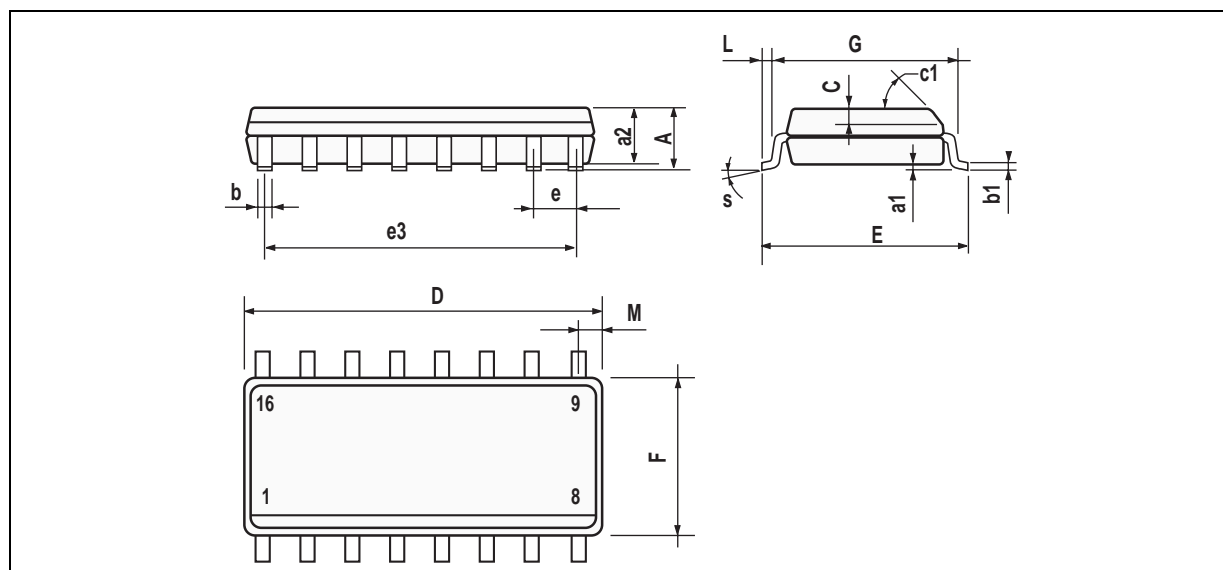
## APPLICATION DIAGRAM



5722A-03.EPS

**PACKAGE MECHANICAL DATA**

16 PINS - PLASTIC MICROPACKAGE (SO)



PM-SO16.EPS

| Dimensions | Millimeters |      |      | Inches |       |       |
|------------|-------------|------|------|--------|-------|-------|
|            | Min.        | Typ. | Max. | Min.   | Typ.  | Max.  |
| A          |             |      | 1.75 |        |       | 0.069 |
| a1         | 0.1         |      | 0.2  | 0.004  |       | 0.008 |
| a2         |             |      | 1.6  |        |       | 0.063 |
| b          | 0.35        |      | 0.46 | 0.014  |       | 0.018 |
| b1         | 0.19        |      | 0.25 | 0.007  |       | 0.010 |
| C          |             | 0.5  |      |        | 0.020 |       |
| c1         | 45° (typ.)  |      |      |        |       |       |
| D          | 9.8         |      | 10   | 0.386  |       | 0.394 |
| E          | 5.8         |      | 6.2  | 0.228  |       | 0.244 |
| e          |             | 1.27 |      |        | 0.050 |       |
| e3         |             | 8.89 |      |        | 0.350 |       |
| F          | 3.8         |      | 4.0  | 0.150  |       | 0.157 |
| G          | 4.6         |      | 5.3  | 0.181  |       | 0.209 |
| L          | 0.5         |      | 1.27 | 0.020  |       | 0.050 |
| M          |             |      | 0.62 |        |       | 0.024 |
| S          | 8° (max.)   |      |      |        |       |       |

SO16.TBL

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