



Part No: CLS0231MA3E-L152

Date: 7/03/2007

Unit: mm

Description: speaker

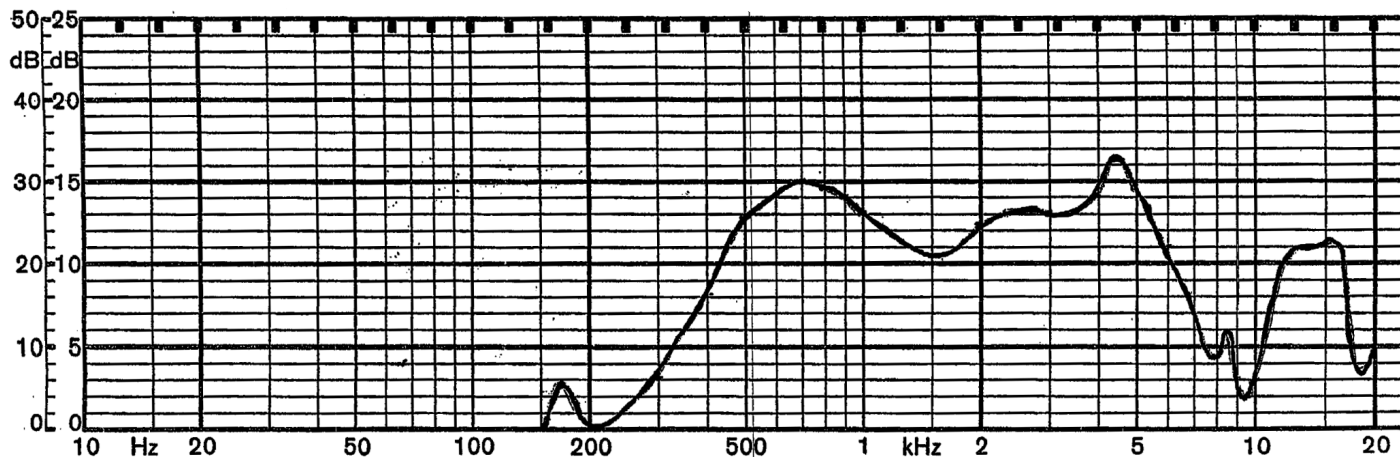
Page No: 1 of 2

### Specifications

|                      |  |   |           |
|----------------------|--|---|-----------|
| Nominal Size         | 23 mm                                  |   |           |
| Impedance            | 32 Ohm $\pm$ 15%                       | at  | 1 KHz 1 V |
| Resonant frequency   | 680 Hz $\pm$ 136 Hz                    | at  | 1 V       |
| Sound pressure level | 84 dB/w $\pm$ 3 dB                     | 0.2 w 50 cm ave. at 1K, 1.2K, 1.5K, 2K Hz |           |
| Response             | Fo Hz ~ 7 KHz max 10 dB                |   |           |
| Input power          | Nominal 0.2 W                          | Handling capacity                         | 0.4 W     |
| Operation            | must be normal at program source 0.2 W |   |           |
| Buzz, rattle, etc.   | must be normal at sine wave 2.53 V     |   |           |
| Magnet               | Size: 8 x 1 mm                         |   |           |
| Load test            | White noise                            | 0.2 W for                                 | 24 hours  |
| Heat test            | 60 $\pm$ 2° C                          | 20-50% R.H.                               | 24 hours  |
| Humidity test        | 40 $\pm$ 2° C                          | 90-95% R.H.                               | 24 hours  |

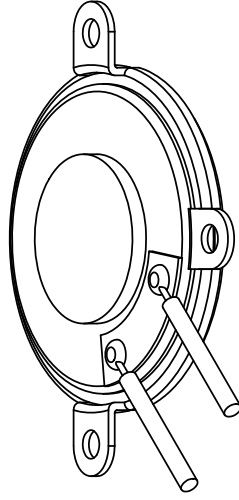
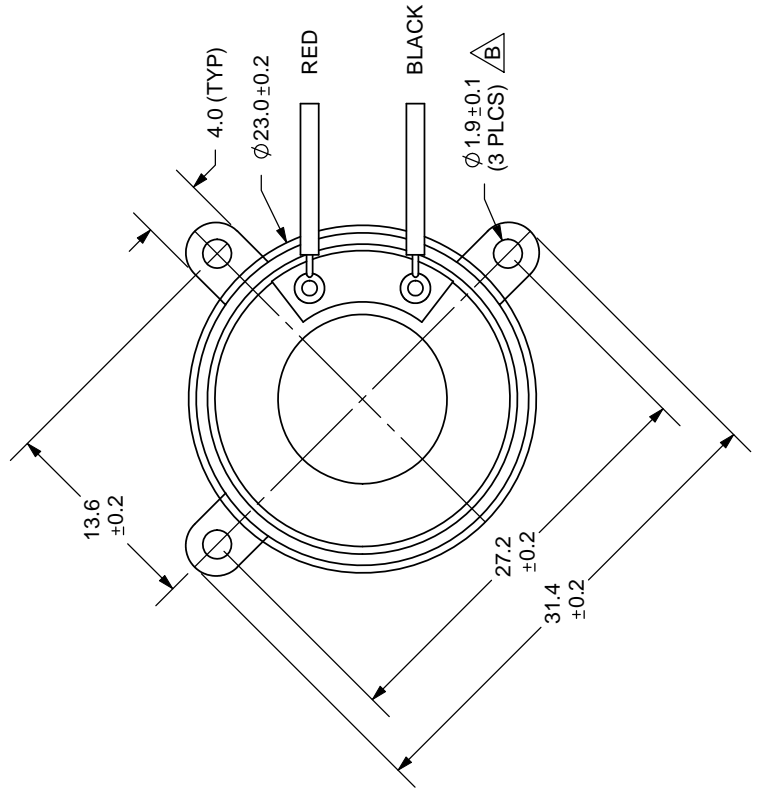
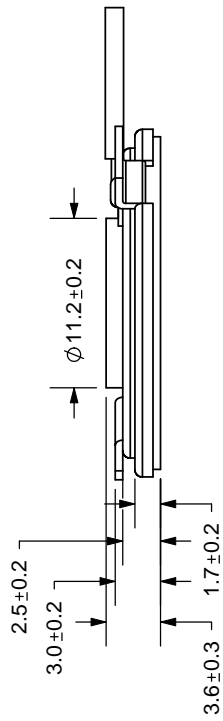
### Frequency Response Curve

|                       |            |
|-----------------------|------------|
| Potentiometer range   | 50 dB      |
| Rectifier             | RMS        |
| Lower limit frequency | 20 Hz      |
| Wr. speed             | 100 mm/sec |



Zero level 60 dB

| REV. | DESCRIPTION                   | DATE      |
|------|-------------------------------|-----------|
| A    | NEW DRAWING                   | 7/3/2007  |
| B    | added mounting hole dimension | 1/31/2008 |



**ROHS**

SPECIFICATIONS:  
WIRE: UL1007, #28AWG  
LENGTH: 152mm

TOLERANCE:  
±0.5mm UNLESS OTHERWISE SPECIFIED



20050 SW 112th Ave.  
Tualatin, OR 97062  
Phone: 503-612-2300  
800-275-4899  
Fax: 503-612-2383  
Website: www.cui.com

|                            |                    |
|----------------------------|--------------------|
| TITLE: LOW PROFILE SPEAKER | REV: B             |
| PART NO: CLS0231MA3E-L152  | UNITS: MM [INCHES] |
| DRAWN BY: ZRJ              | APPROVED BY:       |
|                            | SCALE: 2:1         |