

Compatible with Eu Directive  
2002/EC - RoHS

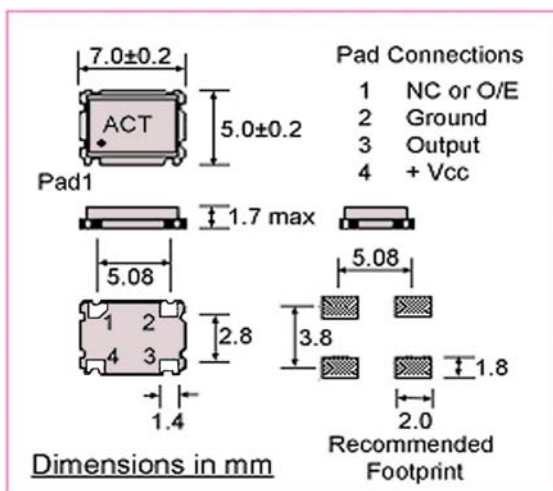
## ACT9200

The ACT9200 family is a miniature, low profile SMD package, with a ceramic base utilising a seam welded metal lid for high reliability and better long-term stability. The metal lid is grounded through the package to assist with EMI emission reductions. This 7x5mm device is available as the ACT9200 in both 3V3 and 5V0. 1V8 and 2V5 versions are available as ACT9200L (See ACT9200L data sheet). A 32.768kHz version is available as the 9200WC (See 9200WC data sheet). Taped and reeled packaging (1k reels) and loose quantities are available for purchase, to suit high and low volume production.



## Specification

| Parameter                 | Symb.                                     | Specification                     |                                      | Condition      |
|---------------------------|---|-----------------------------------|--------------------------------------|----------------|
| Supply Voltage            | Vdd                                       | 3.3V <sub>DC</sub> ± 10%          | 5.0V <sub>DC</sub> ± 10%             | Please specify |
| Frequency Range           | fo  | 1.000 ~ 200.00 MHz                | 1.000 ~ 106.25 MHz                   | Please specify |
| Frequency Stability       | Δf/fo                                     | ±15ppm ~ ±100ppm                  |                                      | Please specify |
| Temp Operating Range      | Topr                                      | 0 ~ +70°C standard to -40 ~ +85°C |                                      | Please specify |
| Temp Storage Range        | Tstg                                      | -55 to +125°C                     |                                      |                |
| Supply Current (max)      | Iop                                       | 16mA (1.000 ~ 34.999 MHz)         | 25mA (1.0000 ~ 34.999 MHz)           |                |
|                           |   | 25mA (35.000 ~ 60.00 MHz)         | 40mA (35.00 ~ 60.00 MHz)             |                |
|                           |   | 40mA (60.001 ~ 99.999 MHz)        | 60mA (60.001 ~ 99.999 MHz)           |                |
|                           |   | 50mA (100.00 ~ 155.00 MHz)        | 80mA (100.00 ~ 106.25 MHz)           |                |
|                           |   | 60mA (155.01 ~ 200.00 MHz)        |                                      |                |
| Duty Cycle                | Tw/t                                      | 40/60% (Std) & 45/55% available   |                                      | Please specify |
| Output Level '0'          | VOL                                       | 0.4V <sub>DC</sub> max (TTL)      | 10% V <sub>DD</sub> max (HCMOS)      |                |
| Output Level '1'          | VOH                                       | 2.4V <sub>DC</sub> min (TTL)      | 90% V <sub>DD</sub> min (HCMOS)      |                |
| Rise & Fall Time (max)    | TrTf                                      | 10nS (1.000 ~ 34.999 MHz)         | 10nS (1.00 ~ 49.999 MHz)             |                |
|                           |   | 5nS (35.00 ~ 99.999 MHz)          | 5nS (50.00MHz ~ 99.90 MHz)           |                |
|                           |   | 2.5nS (100.00 ~ 200.00 MHz)       | 3nS (100.00 ~ 106.25 MHz)            |                |
| Output Load               | N/CL                                      | 10TTL / 15pF (30pF available)     |                                      |                |
| Start-up Time             | Tosc                                      | 10mS max                          |                                      |                |
| Tri-state Input Voltage   | No Connection                             | Enable output                     |                                      |                |
|                           | V <sub>IH</sub> : ≥90% of V <sub>DD</sub> | Enable output                     |                                      |                |
|                           | V <sub>IL</sub> : ≤10% of V <sub>DD</sub> | Disable output : High Impedance   |                                      |                |
| Ageing                    | Fa  | ±5ppm ±3ppm option                | first year max @25°C                 |                |
| Period Jitter (Absolute)  | Tj  | 100pS max @ 1.0MHz                | Other frequencies - see Note 2 below |                |
| Period Jitter (one sigma) | Tj  | 25pS max @ 1.0MHz                 | Other frequencies - see Note 2 below |                |



Pad surface Material  
Au

### APPLICATIONS

- Microprocessor clock
- PDA / notebook
- Wireless applications
- Audio
- Gigabit ethernet
- Fibre channel
- Instrumentation

**NOTE1:** To reduce HF power supply noise, an external bypass capacitor of 0.01μF close to ground and Vdd is recommended.

**NOTE 2:** Typical (max) Jitter values in pS:

|        | RMS(1 sigma) | Absolute (PK-PK) |
|--------|--------------|------------------|
| 25MHz: | 6.3 (10)     | 17.8 (28)        |
| 33MHz: | 5.2 (10)     | 14.7 (28)        |
| 60MHz: | 3.7 (5.0)    | 10.5 (14.0)      |
| 100MHz | 1.0 (3.0)    | 2.8 (8.4)        |

Please note that all parameters can not necessarily be specified in the same device

Customer to Specify : Frequency, Frequency Stability, Operating Temperature Range, Output Type, Output enable, Voltage, Duty Cycle

In line with our ongoing policy of product evolution and improvement, the above specification is subject to change without notice

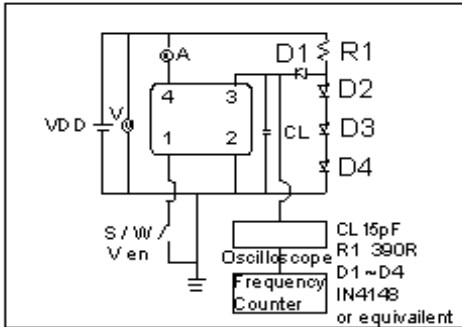
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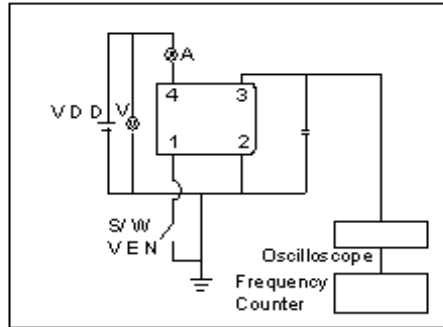
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## ACT9200 CIRCUIT DRAWINGS

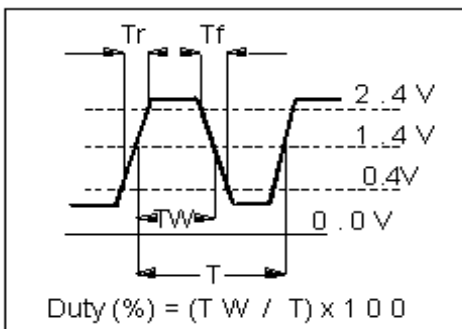
### TTL Test Circuit



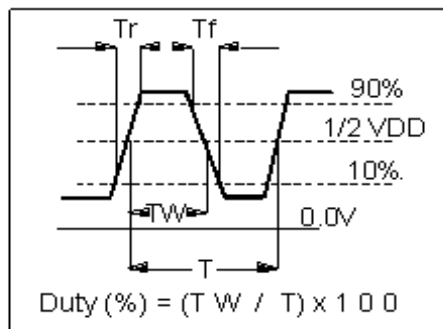
### CMOS Test Circuit



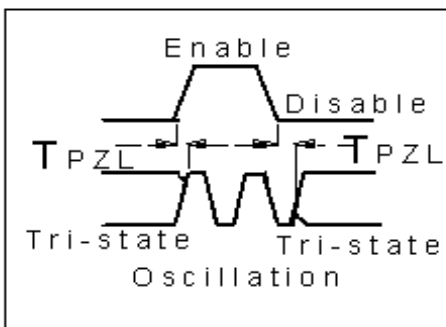
### TTL Waveform



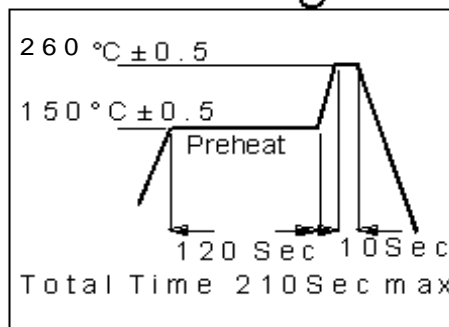
### CMOS Waveform



### Tristate Function



### Reflow Diagram



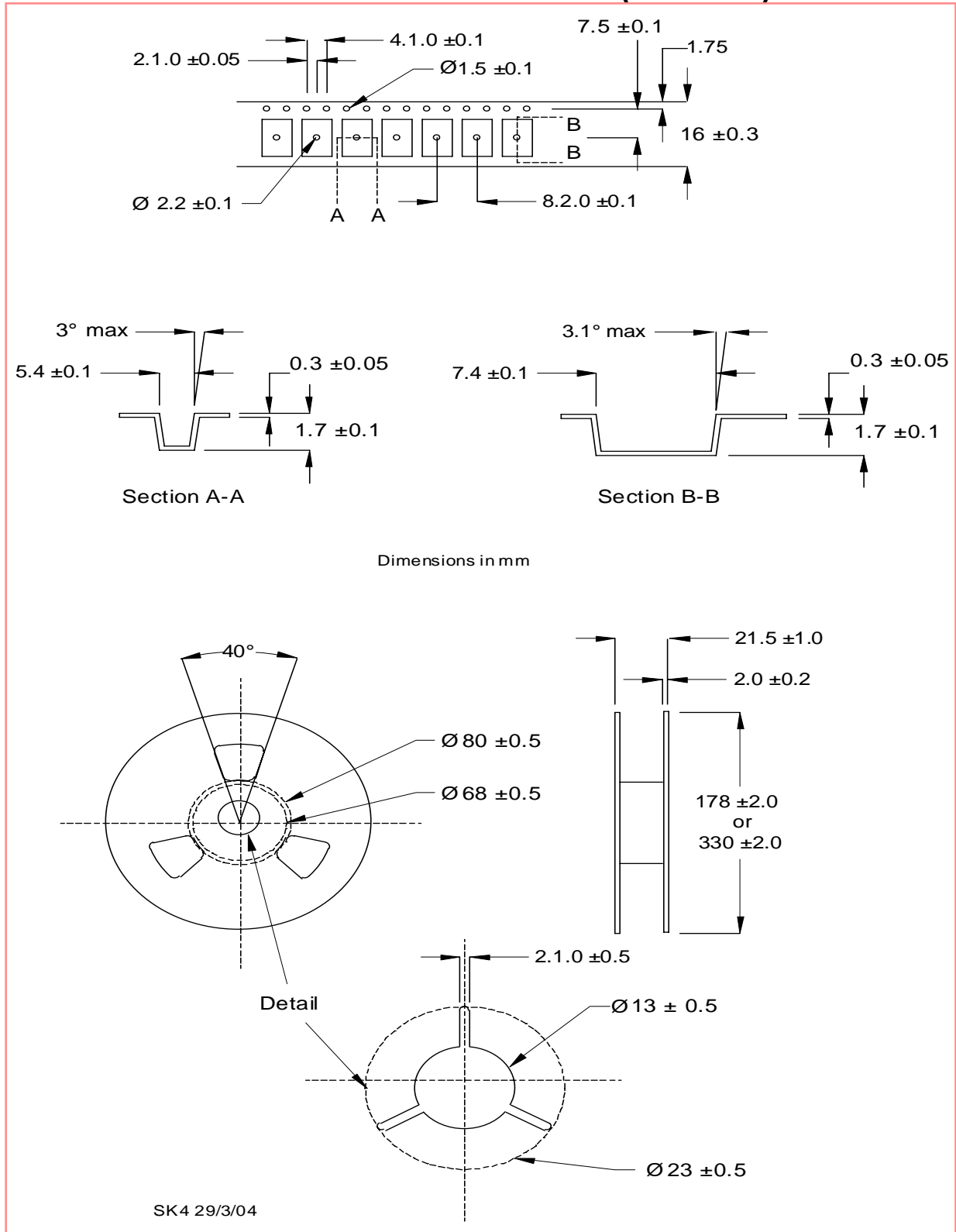
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## ACT9200 TAPE & REEL SPECIFICATIONS (1K Reels )



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