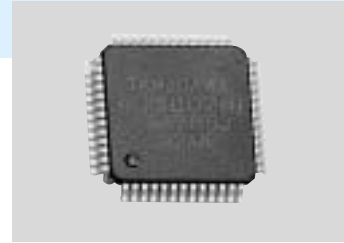


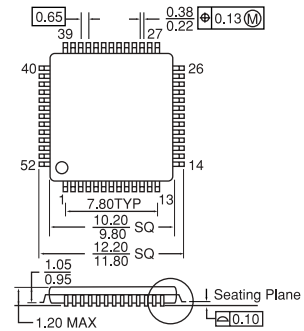
## Model : AU6802N1



### Features

- (1) Applicable to all of our resolvers. (1 phase excitation 2 phase output)
- (2) Vehicle-mount quality
  - Quality level : Transportation equipment involved in safety
  - Operating temperature range :  $-40 \sim +125^{\circ}\text{C}$
- (3) High accuracy
- (4) Simple to use
  - Real time output (High tracking rate :  $240,000\text{min}^{-1}/10\text{bit}$  resolution)
  - Single power supply of DC5V (Integrated oscillator for exciting resolver : 10/20KHz)
  - Small size and light weight (10×10mm, pin interval : 0.65mm, 52pin TQFP, Mass 0.3g)
  - Built-in test (Internal error detection) function
  - Pulse / Parallel / Bus + Serial output (Selectable)
  - Capable of setting a number of poles for UVW (Selectable from ×1,2,3,4)
  - Clock input (20MHz) : External CLK input / Crystal resonator / Ceramic resonator (Selectable)
  - Resolution of 10/12 bit (Selectable)

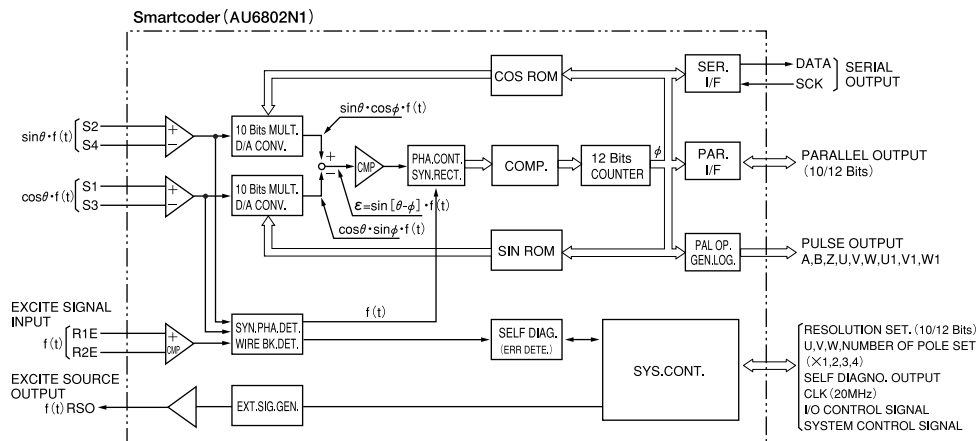
### Outline



### Specifications

|  |   |                                    |
|--|---|------------------------------------|
| Output form  | Binary code parallel 10/12 bit bus compatible, positive logic |                                    |
| Resolution   | 1,024 ( $2^{10}$ )  | 4,096 ( $2^{12}$ )                 |
| Tracking rate  | 240,000min <sup>-1</sup>                                      | 60,000min <sup>-1</sup>            |
| Conversion accuracy                                      | ±2LSB   | ±4LSB (21')                        |
| Settling time (For step input of 180° in electric angle) | 1ms Typ. (ACMD="H")   | 2.5ms Typ. (ACMD="H")              |
| Response (As output response delay in electric angle)    | ±0.2° Max./10,000min <sup>-1</sup>                            | ±0.4° Max./10,000min <sup>-1</sup> |
| 2 phase pulse signal (A,B)                               | 256C/T  | 1,024C/T                           |
| Source dissipation                                       | DC5V±5% 45mA Max. (30mA Typ.)                                 |                                    |
| Operating temperature                                    | -40~+125°C  |                                    |
| Storage temperature                                      | -65~+150°C  |                                    |
| Humidity   | 90%Rh Max.  |                                    |
| Mass   | 1g Max.   |                                    |

### Functional Block Diagram



### Pin Description

| Pin No. | Symbol | Form | Function        | Pin No. | Symbol | Form | Function            | Pin No. | Symbol | Form      | Function    | Pin No. | Symbol   | Form      | Function         |
|---------|--------|------|-----------------|---------|--------|------|---------------------|---------|--------|-----------|-------------|---------|----------|-----------|------------------|
| 1       | R1E    | A/I  | EXT. EXCIT. IP. | 14      | A GND  | —    | ANALOGUE GND        | 27      | D0     | D/O (BUS) | PRTY./φ12   | 40      | D GND    | —         | DIGITAL GND      |
| 2       | R2E    | A/I  | (DIF. IP.)      | 15      | MDSEL  | D/I  | RES. SELECT         | 28      | D1     | D/O (BUS) | ERRHLD/φ11  | 41      | CSB      | D/I       | CHIP SELECT      |
| 3       | VCC    | —    | ANALOGUE SOURCE | 16      | ACMD   | D/I  | ACCEL. MODE CONTROL | 29      | D2     | D/O (BUS) | ERR/φ10     | 42      | RDB      | D/I       | LEAD             |
| 4       | SINMNT | A/O  | SIN. MONITOR    | 17      | XSEL1  | D/I  | UVW P SEL.          | 30      | D3     | D/O (BUS) | W1/φ9       | 43      | INH (RD) | D/I       | INHIBIT          |
| 5       | S4     | A/I  | SIN. IP.        | 18      | XSEL2  | D/I  |                     | 19      | OUTMD  | D/I       | OP. SEL     | 44      | PRTY     | D/O (BUS) | PARITY           |
| 6       | S2     | A/I  | (DIF. IP.)      | 20      | SCSB   | D/I  | SERIAL CSB.         | 32      | D5     | D/O (BUS) | U1/φ7       | 45      | ERRHLD   | D/O       | ERROR HOLD       |
| 7       | A GND  | —    | ANALOGUE GND    | 21      | DATA   | D/O  | SERIAL DATA         | 33      | D GND  | —         | DIGITAL GND | 46      | ERRSTB   | D/I       | ERROR RESET      |
| 8       | S1     | A/I  | COS. IP.        | 22      | SCK    | D/I  | SERIAL LOCK         | 34      | D6     | D/O (BUS) | Wch./φ6     | 47      | FSEL1    | D/I       | FREQUENCY SELECT |
| 9       | S3     | A/I  | (DIF. IP.)      | 23      | VDD    | —    | DIGITAL SOURCE      | 35      | D7     | D/O (BUS) | Vch./φ5     | 48      | FSEL2    | D/I       | FREQUENCY SELECT |
| 10      | COSMNT | A/O  | COS. MONITOR    | 24      | XTAL   | —    | OSC. CONN.          | 36      | D8     | D/O (BUS) | Uch./φ4     | 49      | VDD      | —         | DIGITAL SOURCE   |
| 11      | VCC    | —    | ANALOGUE SOURCE | 25      | CLKIN  | D/I  | EXTERNAL CLK INPUT  | 37      | D9     | D/O (BUS) | Zch./φ3     | 50      | TEST1    | D/I       | TEST MODE SET    |
| 12      | RSO    | A/O  | SIG. FOR EXCIT. | 26      | D GND  | —    | DIGITAL GND         | 38      | D10    | D/O (BUS) | Bch./φ2     | 51      | TEST2    | D/I       | TEST MODE SET    |
| 13      | COM    | A/O  | COMMON (2.5V)   |         |        |      |                     | 39      | D11    | D/O (BUS) | Ach./φ1     | 52      | A GND    | —         | ANALOGUE GND     |

Note : \*A/I ANALOG INPUT. \*A/O ANALOG OUTPUT. \*D/I DIGITAL INPUT. \*D/O DIGITAL OUTPUT.