



에이디반도체

Touch IC Market Leader

# Solution Provider

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| Application |                  | Touch IC                 |     |                        |      |  |               |      |        | Touch Module                            |
|-------------|------------------|--------------------------|-----|------------------------|------|--|---------------|------|--------|---|
| Gr.         | Classification   | 1CH                      | 2CH | 4CH                    | 6CH  | 8CH  | 12CH          | 20CH | 30CH   |   |
| Display     | TV               | TS01S<br>TS01B<br>ATSL01 |     |                        |      | TS08N  |               | TS20 | AMRG30 |   |
|             | MNT              |                          |     |                        |      | TS08P  |               |      |        |   |
|             | MNT-TV           |                          |     |                        |      | ASRG08<br>ANRG08<br>ANSG08<br>ANMG08<br>AMRG20 |               |      |        |   |
| AV          | Bluelay Player   | TS01S<br>TS01B<br>ATSL01 |     |                        |      | TS08N  | TSM12<br>TS12 | TS20 | AMRG30 |   |
|             | Home Theater     |                          |     |                        |      | TS08P  |               |      |        |   |
|             | Set Top Box      |                          |     |                        |      | ASRG08   |               |      |        |   |
|             | Projector        |                          |     |                        |      | ANRG08   |               |      |        |   |
|             | Audio            |                          |     |                        |      | ANSG08<br>ANMG08<br>AMRG20                     |               |      |        |   |
| Computer    | Note-Book        | TS01S<br>TS01B<br>ATSL01 |     |                        |      | TS08N  |               | TS20 | AMRG30 |   |
|             | All-in-one PC    |                          |     |                        |      | TS08P  |               |      |        |   |
|             | Desktop Computer |                          |     |                        |      | ASRG08   |               |      |        |   |
|             | Printer          |                          |     |                        |      | ANRG08<br>ANSG08<br>ANMG08<br>AMRG20           |               |      |        |   |
| Air Con.    | Standing type    | TS01S<br>TS01B<br>ATSL01 |     | TS04<br>TS04P<br>AGS04 | TS06 | TS08N  | TSM12<br>TS12 | TS20 | AMRG30 | Touch Cap<br>Oil Level Sensor<br>Module |
|             | Wall Type        |                          |     |                        |      | TS08P  |               |      |        |   |
|             | Fan              |                          |     |                        |      | ASRG08   |               |      |        |   |
|             | System           |                          |     |                        |      | ANRG08<br>ANSG08<br>ANMG08<br>AMRG20           |               |      |        |   |

| Application  |                   | Touch IC                 |       |                                  |      |  |               |      |        | Touch Module |
|--------------|-------------------|--------------------------|-------|----------------------------------|------|--|---------------|------|--------|--------------|
| Gr.          | Classification    | 1CH                      | 2CH   | 4CH                              | 6CH  | 8CH  | 12CH          | 20CH | 30CH   |              |
| Refrigerator | Refrigerator      | TS01S<br>TS01B<br>ATSL01 | TS02N | TS04<br>TS04P<br>AGS04<br>ATMF04 | TS06 | TS08N<br>TS08P<br>ASRG08<br>ANRG08<br>ANSG08<br>ANMG08<br>AMRG20 | TSM12<br>TS12 | TS20 | AMRG30 | Touch Cap    |
|              | Kimchi Fridge     |                          |       |                                  |      |  |               |      |        |              |
|              | Wine Cellar       |                          |       |                                  |      |  |               |      |        |              |
|              | Freezer           |                          |       |                                  |      |  |               |      |        |              |
| Mobile Phone | Smart Phone       | TS01S<br>TS01B           |       | AGS04<br>ATMF04                  | TS06 |  |               |      |        |              |
|              | Tablet            |                          |       |                                  |      |  |               |      |        |              |
|              | Phone             |                          |       |                                  |      |  |               |      |        |              |
|              | Bluetooth Speaker |                          |       |                                  |      |  |               |      |        |              |
| Kitchen      | Water Purifier    | TS01S<br>TS01B<br>ATSL01 | TS02N | TS04<br>TS04P<br>ATMF04          | TS06 | TS08N<br>TS08P<br>ASRG08<br>ANRG08<br>ANSG08<br>ANMG08<br>AMRG20 | TSM12<br>TS12 | TS20 | AMRG30 |              |
|              | Oven              |                          |       |                                  |      |  |               |      |        |              |
|              | Microwave         |                          |       |                                  |      |  |               |      |        |              |
|              | Gas Range         |                          |       |                                  |      |  |               |      |        |              |
|              | Dish-Washer       |                          |       |                                  |      |  |               |      |        |              |

| Application     |                | Touch IC                 |       |                        |      |  |      |      |      | Touch Module   |
|-----------------|----------------|--------------------------|-------|------------------------|------|--|------|------|------|--|
| Gr.             | Classification | 1CH                      | 2CH   | 4CH                    | 6CH  | 8CH  | 12CH | 20CH | 30CH |  |
| Living Product  | Air Purifier   | TS01S<br>TS01B<br>ATSL01 | TS02N | TS04<br>TS04P          | TS06 | TS08N<br>TS08P<br>ASRG08<br>ANRG08<br>ANSG08<br>ANMG08<br>AMRG20 |      |      |      | Seat Sensor Module<br>Water Level Sensor Module<br>LED Module<br>Touch Cap |
|                 | Humidifier     |                          |       |                        |      |  |      |      |      |  |
|                 | Dehumidifier   |                          |       |                        |      |  |      |      |      |  |
|                 | Switch         |                          |       |                        |      |  |      |      |      |  |
|                 | Lighting       |                          |       |                        |      |  |      |      |      |  |
|                 | Vacuum         |                          |       |                        |      |  |      |      |      |  |
|                 | Bidet          |                          |       |                        |      |  |      |      |      |  |
| Washing Machine | Drum           | TS01S<br>TS01B<br>ATSL01 |       | TS04<br>TS04P          | TS06 | TS08N<br>TS08P<br>ASRG08<br>ANRG08<br>ANSG08<br>ANMG08<br>AMRG20 |      |      |      |  |
|                 | General Type   |                          |       |                        |      |  |      |      |      |  |
|                 | Styler         |                          |       |                        |      |  |      |      |      |  |
|                 | Clothes Dryer  |                          |       |                        |      |  |      |      |      |  |
| Car             | Navigation     | TS01S<br>TS01B<br>ATSL01 | TS02N | TS04<br>TS04P<br>AGS04 | TS06 | TS08N<br>TS08P<br>ASRG08<br>ANRG08<br>ANSG08<br>ANMG08<br>AMRG20 |      |      |      |  |
|                 | Black Box      |                          |       |                        |      |  |      |      |      |  |
|                 | Door Lock      |                          |       |                        |      |  |      |      |      |  |
| etc.            | Boiler         | TS01S<br>TS01B<br>ATSL01 |       | TS04<br>TS04P          | TS06 |  |      |      |      |  |

| Application |                    | Touch IC                 |       |                        |      |  |               |               |        | Touch Module |
|-------------|--------------------|--------------------------|-------|------------------------|------|--|---------------|---------------|--------|--------------|
| Gr.         | Classification     | 1CH                      | 2CH   | 4CH                    | 6CH  | 8CH  | 12CH          | 20CH          | 30CH   |              |
| etc.        | Medical Appliances | TS01S<br>TS01B<br>ATSL01 | TS02N | AGS04                  |      |  |               |               |        | LED Module   |
|             | Beauty Product     | TS01S<br>TS01B<br>ATSL01 | TS02N | TS04<br>TS04P<br>AGS04 | TS06 | TS08N<br>TS08P<br>ASRG08<br>ANRG08<br>ANSG08<br>ANMG08<br>AMRG20 | TSM12<br>TS12 | TS20          | AMRG30 |              |
|             | Treadmill          | TS01S<br>TS01B<br>ATSL01 |       | TS04<br>TS04P<br>AGS04 | TS06 | TS08N<br>TS08P<br>ASRG08<br>ANRG08<br>ANSG08<br>ANMG08<br>AMRG20 |               |               |        |              |
|             | Door Lock          | TS01S<br>TS01B<br>ATSL01 |       |                        |      |  |               | TSM12<br>TS12 | TS20   | AMRG30       |

| Solutions                             | 1CH    | 2CH | 4CH    | 6CH  | 8CH    | 12CH   | 20CH  | 40CH   |
|---------------------------------------|--------|-----|--------|------|--------|--------|-------|--------|
| <b>Low Voltage/ Current</b>           | ATSM01 |     | AGS04  |      |        |        |       |        |
| <b>Proximity</b>                      | TS01B  |     | ATMF04 |      | AMRG20 |        |       | AMRG30 |
|                                       |        |     |        |      |        |        |       |        |
| <b>Pattern Sleep</b>                  |        |     | AGS04  | TS06 | AMRG20 |        |       | AMRG30 |
|                                       |        |     |        |      |        |        |       |        |
| <b>Grip Sensor</b>                    |        |     | ATMF04 |      |        |        |       |        |
|                                       |        |     | AGS04  | TS06 | AMRG20 |        |       | AMRG30 |
| <b>Slide &amp; Wheel</b>              |        |     |        |      |        |        |       |        |
|                                       |        |     | ATMF04 |      |        | AMRG20 |       | AMRG30 |
| <b>Level Touch</b>                    |        |     |        |      |        | ATIC12 |       |        |
|                                       |        |     |        |      |        | AMRG20 | TSM12 | AMRG30 |
| <b>Wake-up (Sleep Mode)</b>           |        |     | ATMF04 |      |        |        |       |        |
|                                       |        |     | AGS04  | TS06 | AMRG20 | TSM12  |       | AMRG30 |
| <b>Clock Off Mode (Not Operation)</b> |        |     |        |      |        |        |       |        |
|                                       |        |     | ANSG04 |      |        | ANSG08 | TS20  | AMRG30 |
|                                       |        |     | ATMF04 |      |        | ANRG08 |       |        |
|                                       |        |     |        |      |        | AMRG20 |       |        |
|                                       |        |     |        |      | ASRG08 |        |       |        |

| Solutions         | 1CH    | 2CH   | 4CH    | 6CH  | 8CH    | 12CH   | 20CH | 40CH   |
|-------------------|--------|-------|--------|------|--------|--------|------|--------|
| Initial Touch     | ADMC01 |       | ATMF04 |      | AMRG20 |        |      | AMRG30 |
|                   | TH01   |       |        |      |        |        |      |        |
|                   | AWS01  |       |        |      |        |        |      |        |
| In-direct Touch   | TS01S  | TS02N | TS04   | TS06 | TS08N  | TSM12M | TS20 | AMRG30 |
|                   | ATSL01 |       | TS04P  |      | TS08P  | ATIC12 |      |        |
|                   | TH01   |       | AGS04  |      | ASRG08 |        |      |        |
|                   | AWS01  |       | ATMF04 |      | ALRS08 |        |      |        |
|                   | ADMC01 |       |        |      | ANRG08 |        |      |        |
|                   |        |       |        |      | ANSG08 |        |      |        |
| LED Dimming       | ADMC01 |       | ATMF04 | TS06 | ANSG08 |        | TS20 | AMRG30 |
|                   |        |       |        |      | ANRG08 |        |      |        |
|                   |        |       |        |      | ASRG08 |        |      |        |
|                   |        |       |        |      |        |        |      |        |
| Analog Output     |        |       |        |      | TS08P  |        |      |        |
|                   |        |       |        |      | ASRG08 |        |      |        |
| I2C Communication | ADMC01 |       | AGS04  | TS06 | ANSG08 | TSM12M | TS20 | AMRG30 |
|                   |        |       | ATMF04 |      | ANRG08 | ATIC12 |      |        |
|                   |        |       |        |      | ASRG08 |        |      |        |
|                   |        |       |        |      | ANMG08 |        |      |        |
|                   |        |       |        |      | AMRG20 |        |      |        |

## Hard wired No Memory

| Functions         |                           | TS01S        | AWS01         | ATSL01       | TS02N        | TS04         | TS04P        | ANMG04        | ANOG04        |
|-------------------|---------------------------|--------------|---------------|--------------|--------------|--------------|--------------|---------------|---------------|
| Package           |                           | SOT-26       | SOT-26        | SC70         | 8 SOP        | 14 SOP       | 14 SOP       | 14 SOP        | 14 SOP        |
| Channel           |                           | 1 Channel    | 1 Channel     | 1 Channel    | 2 Channel    | 4 Channel    | 4 Channel    | 4 Channel     | 4 Channel     |
| Operating voltage |                           | 2.5V ~ 5.0V  | 2.5V ~ 3.3V   | 1.8V ~ 3.5V  | 2.5V ~ 5.0V  | 2.5V ~ 5.5V  | 2.5V ~ 5.5V  | 3.0V ~ 5.5V   | 3.0V ~ 5.5V   |
| Idle Current      |                           | 25uA (@3.3V) | 230uA (@3.3V) | 12uA (@3.0V) | 50uA (@3.3V) | 40uA (@3.3V) | 90uA (@3.3V) | 0.5mA (@3.3V) | 0.5mA (@3.3V) |
| Interface         | Serial (I <sup>2</sup> C) | X            | X             | X            | X            | X            | X            | O             | O             |
|                   | Parallel                  | O            | O             | O            | O            | O            | O            | O             | O             |
| LED PWM           |                           | X            | X             | X            | X            | X            | X            | 4 ea          | 4 ea          |

| Functions         |                           | TS06                              | TS08N        | TS08P        | ANMG08        | ANOG08        | TSM12M                            | TS20               |
|-------------------|---------------------------|-----------------------------------|--------------|--------------|---------------|---------------|-----------------------------------|--------------------|
| Package           |                           | 16 QFN                            | 24 SOP       | 24 QSOP      | 24 SSOP       | 24 SSOP       | 32 MLF                            | 28 QFN<br>28 TSSOP |
| Channel           |                           | 6 Channel                         | 8 Channel    | 8 Channel    | 8 Channel     | 8 Channel     | 12 Channel                        | 20 Channel         |
| Operating voltage |                           | 2.5V ~ 5.0V                       | 2.5V 5.0V    | 2.5V ~ 5.5V  | 3.0V ~ 5.5V   | 3.0V ~ 5.5V   | 2.5V ~ 5.0V                       | 2.5V ~ 5.0V        |
| Idle Current      |                           | 30uA (@3.0V)<br>8uA (@3.0V/Sleep) | 80uA (@3.3V) | 60uA (@3.3V) | 0.5mA (@3.3V) | 0.5mA (@3.3V) | 80uA (@3.3V)<br>7uA (@3.3V/Sleep) | 85uA (3.3V)        |
| Interface         | Serial (I <sup>2</sup> C) | O                                 | X            | X            | O             | O             | O                                 | O                  |
|                   | Parallel                  | X                                 | O            | O            | O             | O             | X                                 | X                  |
| LED PWM           |                           | 3 ea                              | X            | X            | 8 ea          | 8 ea          | X                                 | 20 ea              |



## Hard wired with Memory (EEPROM)

| Functions         |                           | ATSN01       | ANSG04        | ANSG08                                   | ATIC12       |
|-------------------|---------------------------|--------------|---------------|--|--------------|
| Package           |                           | 8 TDFN       | 14 SOP        | 24 QFN (QN)<br>24SOP (SL)<br>16 SOP (SH) | 28 QFN       |
| Channel           |                           | 1 Channel    | 4 Channel     | 8 Channel                                | 12 Channel   |
| Operating voltage |                           | 1.8V ~ 5.5V  | 3.0V ~ 5.5V   | 3.0V ~ 5.5V                              | 2.7V ~ 5.0V  |
| Idle Current      |                           | 40uA (@5.0V) | 0.5mA (@3.3V) | 0.5mA (@3.3V)                            | 30uA (@3.3V) |
| Interface         | Serial (I <sup>2</sup> C) | O            | O             | O  | O            |
|                   | Parallel                  | O            | O             | O  | X            |
| LED PWM           |                           | X            | 4 ea          | 8ea (QN, SL)<br>1 ea (SH)                | X            |

## MCU Based

| Functions         |  | ADMC01      | ATMF04        | AMRG20        | AMRG30         |
|-------------------|--|-------------|---------------|---------------|----------------|
| Package           |  | 12 QFN      | 16 QFN        | 24 QFN        | 48 QFN         |
| Channel           |  | 1 Channel   | Max 4 Channel | Max 9 Channel | Max 40 Channel |
| Operating voltage |  | 3.0V ~ 5.0V | 1.7V ~ 3.6V   | 2.5V ~ 5.5V   | 2.5V ~ 5.5V    |
| FLASH(ROM)        |  | 16KB        | 32KB          | 8KB           | 32KB           |
| User memory       |  | 1K          | 1K            | 2K            | 4K             |
| Interface         |  | I2C         | I2C           | I2C, UART     | I2C, UART      |
| GPIO              |  | 1 pin       | 5 pin (4 PWM) | 11 pin        | 40 pin         |