

By Category PDF

Category IC Packages

ICs

# IC Packages

Includes LAPIS Technology products

## ROHM Packages

|                                  |     |
|----------------------------------|-----|
| <b>Small Packages</b>            | 112 |
| <b>SOP Packages</b>              | 113 |
| <b>HSOP Packages</b>             | 113 |
| <b>HTSOP Packages</b>            | 113 |
| <b>SOP Special Packages</b>      | 114 |
| <b>Non-lead Packages</b>         | 114 |
| <b>Optical Non-lead Packages</b> | 115 |
| <b>MMP Packages</b>              | 116 |
| <b>SON Packages</b>              | 116 |
| <b>SON Special Packages</b>      | 116 |
| <b>QFP Packages</b>              | 117 |
| <b>QFN Packages</b>              | 118 |
| <b>BGA Packages</b>              | 119 |
| <b>WL-CSP Packages</b>           | 120 |
| <b>Power Packages</b>            | 121 |

## LAPIS Technology Packages

|                             |     |
|-----------------------------|-----|
| <b>Part No. Explanation</b> | 124 |
| <b>SOP Packages</b>         | 125 |
| <b>TSOP Packages</b>        | 125 |
| <b>QFP Packages</b>         | 126 |
| <b>QFN Packages</b>         | 127 |
| <b>WSON Packages</b>        | 128 |
| <b>BGA Packages</b>         | 129 |
| <b>WL-CSP Packages</b>      | 129 |

**ROHM Packages**

|                                 |       |
|---------------------------------|-------|
| Small Packages .....            | P.112 |
| SOP Packages .....              | P.113 |
| HSOP Packages .....             | P.113 |
| HTSOP Packages .....            | P.113 |
| SOP Special Packages .....      | P.114 |
| Non-lead Packages .....         | P.114 |
| Optical Non-lead Packages ..... | P.115 |
| MMP Packages .....              | P.116 |

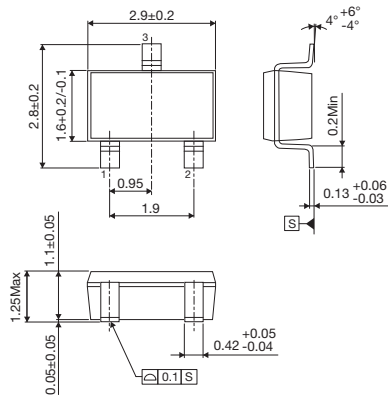
|                            |       |
|----------------------------|-------|
| SON Packages .....         | P.116 |
| SON Special Packages ..... | P.116 |
| QFP Packages .....         | P.117 |
| QFN Packages .....         | P.118 |
| BGA Packages .....         | P.119 |
| WL-CSP Packages .....      | P.120 |
| Power Packages .....       | P.121 |

**Small Packages**

(Unit: mm)

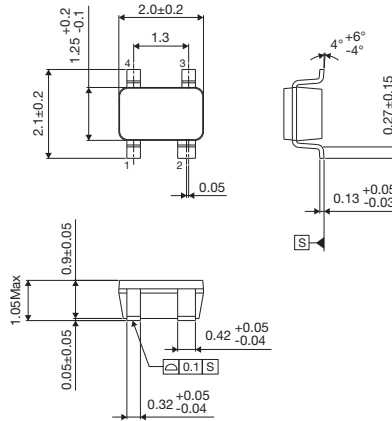
**SOP Packages**

**SSOP3**



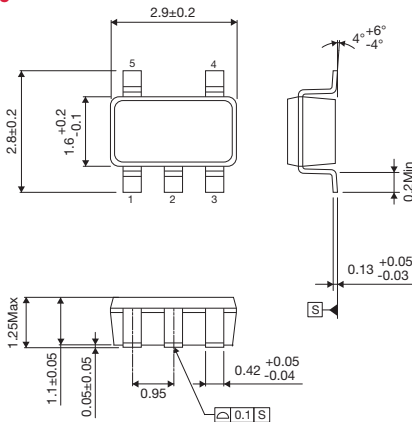
Taping: 3,000pcs

**SOP4**



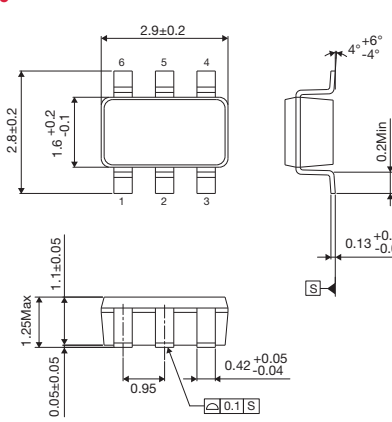
Taping: 3,000pcs

**SSOP5**



Taping: 3,000pcs

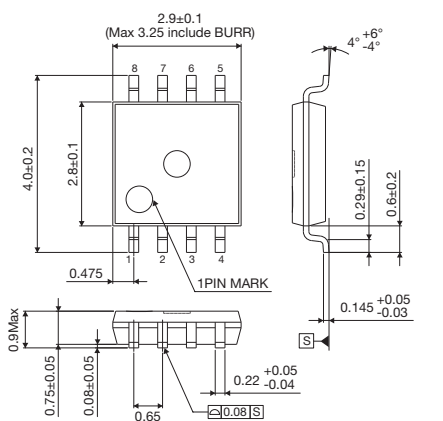
**SSOP6**



Taping: 3,000pcs

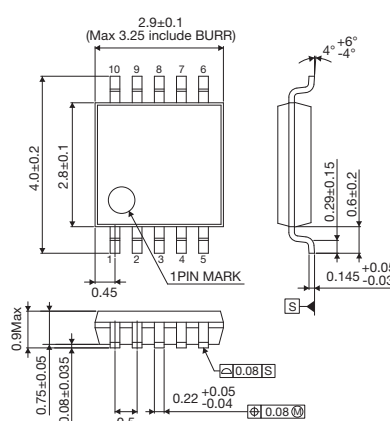
**MSOP Packages**

**MSOP8**



Taping: 3,000pcs

**MSOP10**



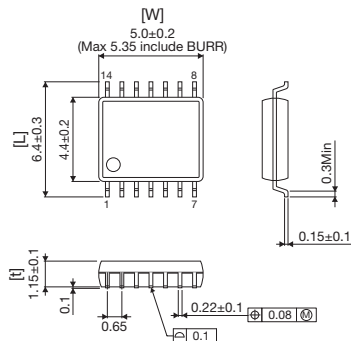
Taping: 3,000pcs

Note: Please refer package from "LAPIS Technology Packages".

## SOP Packages

(Unit: mm)

### SSOP Package (for SSOP-B14)



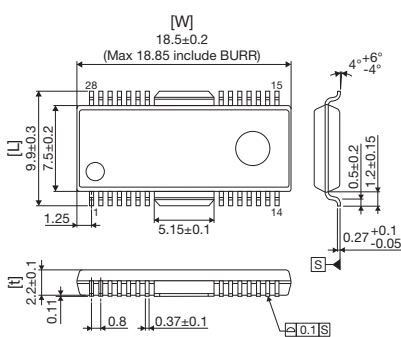
|                                      | Package    | Pin Number (pin) | Length [L] (mm) | Width [W] (mm) | Thickness [t] (mm) | Package (pcs) taping |
|--------------------------------------|------------|------------------|-----------------|----------------|--------------------|----------------------|
| SOP Package<br>Pin Pitch: 1.27mm     | SOP8       | 8                | 6.2             | 5.0            | 1.61               | 2,500                |
|                                      | SOP-JW8    |                  | 6.0             | 4.9            | 1.65               | 2,500                |
|                                      | SOP14      | 14               | 6.2             | 8.7            | 1.61               | 2,500                |
|                                      | SOP-J14    |                  | 6.0             | 8.65           | 1.65               | 2,500                |
|                                      | SOP16      | 16               | 6.2             | 10.0           | 1.61               | 2,500                |
|                                      | SOP-J16A   |                  | 6.0             | 9.9            | 1.55               | 2,500                |
|                                      | SOP18      | 18               | 7.8             | 11.2           | 1.91               | 2,000                |
|                                      | SOP20A     | 20               | 10.3            | 12.8           | 2.5                | 1,500                |
|                                      | SOP24      | 24               | 7.8             | 15.0           | 1.91               | 2,000                |
| SSOP-A Package<br>Pin Pitch: 0.8mm   | SOP28      | 28               | 9.9             | 18.5           | 2.31               | 1,500                |
|                                      | SOP-J8     | 8                | 6.0             | 4.9            | 1.55               | 2,500                |
|                                      | SSOP-A16   | 16               | 6.2             | 6.6            | 1.61               | 2,500                |
|                                      | SSOP-A20   | 20               | 7.8             | 8.7            | 1.91               | 2,000                |
| SSOP-B Package<br>Pin Pitch: 0.65mm  | SSOP-A24   | 24               | 7.8             | 10.0           | 1.9                | 2,000                |
|                                      | SSOP-A32   | 32               | 7.8             | 13.6           | 1.91               | 2,000                |
|                                      | SSOP-B8    | 8                | 6.4             | 3.0            | 1.25               | 2,500                |
|                                      | SSOP-B10W  | 10               | 10.2            | 3.5            | 1.9                | 1,500                |
|                                      | SSOP-B14   | 14               | 6.4             | 5.0            | 1.25               | 2,500                |
|                                      | SSOP-B16   | 16               | 6.4             | 5.0            |                    | 2,500                |
|                                      | SSOP-B20   | 20               | 6.4             | 6.5            | 1.81               | 2,500                |
|                                      | SSOP-B20W  |                  | 8.1             | 6.5            |                    | 2,000                |
|                                      | SSOP-B24   | 24               | 7.6             | 7.8            | 1.25               | 2,000                |
|                                      | SSOP-B28   |                  | 7.6             | 10.0           |                    | 2,000                |
| SSOP-B28W                            | 28         | 10.4             | 9.2             | 2.4            | 1,500              |                      |
| SSOP-B40                             | 40         | 7.8              | 13.6            | 1.9            | 2,000              |                      |
| TSSOP-B Package<br>Pin Pitch: 0.65mm | TSSOP-B8   | 8                | 6.4             | 3.0            | 1.2                | 3,000                |
|                                      | TSSOP-B8J  |                  | 4.9             | 3.0            | 1.1                | 2,500                |
|                                      | TSSOP-B14J | 14               | 6.4             | 5.0            | 1.2                | 2,500                |
| TSSOP-C Package<br>Pin Pitch: 0.5mm  | TSSOP-C48V | 48               | 8.1             | 12.5           | 1.0                | 2,000                |

Note: Please check the ROHM website for detailed dimensions.

## HSOP Packages (Heat sink on both side)

(Unit: mm)

### HSOP Package (for HSOP-M28)



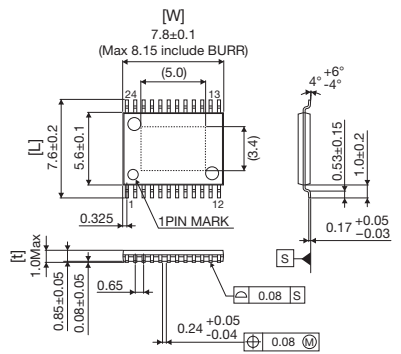
|                                    | Package  | Pin Number (pin) | Length [L] (mm) | Width [W] (mm) | Thickness [t] (mm) | Package (pcs) taping |
|------------------------------------|----------|------------------|-----------------|----------------|--------------------|----------------------|
| HSOP Package<br>Pin Pitch: 1.27mm  | HSOP20   | 20               | 7.8             | 14.9           | 2.1                | 2,000                |
| HSOP Package<br>Pin Pitch: 0.8mm   | HSOP25   | 25               | 7.8             | 13.6           | 2.01               | 2,000                |
| HSOP-M Package<br>Pin Pitch: 0.8mm | HSOP-M28 | 28               | 9.9             | 18.5           | 2.31               | 1,500                |
|                                    | HSOP-M36 | 36               | 9.9             | 18.5           | 2.4                | 1,500                |

Note: Please check the ROHM website for detailed dimensions.

## HTSOP Packages (With back heat sink)

(Unit: mm)

### HTSSOP Package (for HTSSOP-B24)



|                                       | Package     | Pin Number (pin) | Length [L] (mm) | Width [W] (mm) | Thickness [t] (mm) | back heat sink (mm) | Package (pcs) taping |
|---------------------------------------|-------------|------------------|-----------------|----------------|--------------------|---------------------|----------------------|
| HTSOP Package<br>Pin Pitch: 1.27mm    | HTSOP-J8    | 8                | 6.0             | 4.9            | 1.0                | 2.4×3.2             | 2,500                |
|                                       | HTSOP-J8ES  | 8                | 6.0             | 4.9            |                    | 1.8×2.2             | 2,500                |
| HTSSOP-A Package<br>Pin Pitch: 0.8mm  | HTSSOP-A44  | 44               | 9.5             | 18.5           | 1.0                | 5.0×6.0             | 1,500                |
|                                       | HTSSOP-A44R |                  | 9.5             | 18.5           |                    | 5.0×6.0 (surface)   | 1,500                |
| HTSSOP-B Package<br>Pin Pitch: 0.65mm | HTSSOP-B16  | 16               | 6.4             | 5.0            | 1.0                | 2.4×3.0             | 2,500                |
|                                       | HTSSOP-B20  | 20               | 6.4             | 6.5            |                    | 2.4×4.0             | 2,500                |
|                                       | HTSSOP-B24  | 24               | 7.6             | 7.8            |                    | 3.4×5.0             | 2,000                |
|                                       | HTSSOP-B28  | 28               | 6.4             | 9.7            |                    | 2.9×5.5             | 2,500                |
|                                       | HTSSOP-B30  | 30               | 7.6             | 10.0           |                    | 3.7×5.8             | 2,000                |
|                                       | HTSSOP-B40  | 40               | 7.8             | 13.6           |                    | 3.4×8.4             | 2,000                |
| HTSSOP-B54                            | 54          | 9.5              | 18.5            | 5.0×6.0        | 1,500              |                     |                      |
| HSSOP-C Package<br>Pin Pitch: 0.5mm   | HSSOP-C16   | 16               | 6.0             | 4.9            | 1.7                | about 2.5×4.12      | 2,500                |

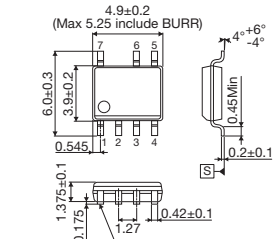
Note: Please check the ROHM website for detailed dimensions.

Note: Please refer package from "LAPIS Technology Packages".

## SOP Special Packages

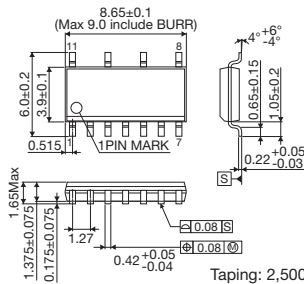
(Unit: mm)

### SOP-J7S



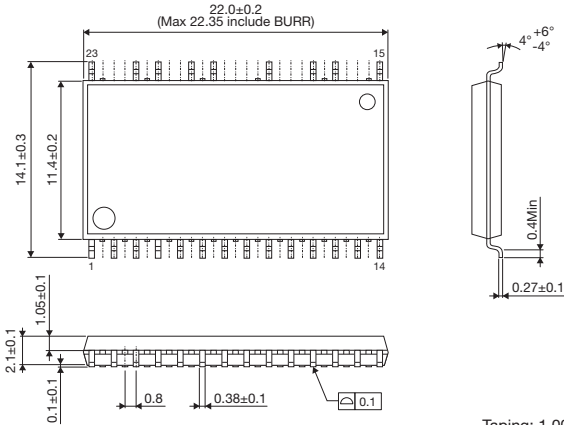
Taping: 2,500pcs

### SOP-J11



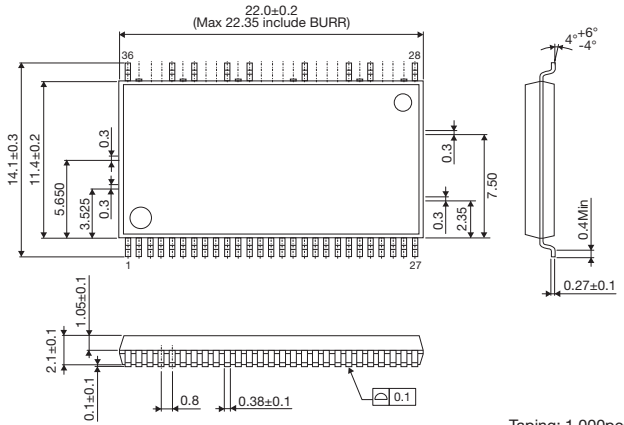
Taping: 2,500pcs

### SSOP-A54\_23



Taping: 1,000pcs

### SSOP-A54\_36A



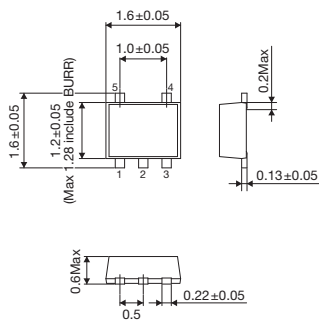
Taping: 1,000pcs

## Non-lead Packages

(Unit: mm)

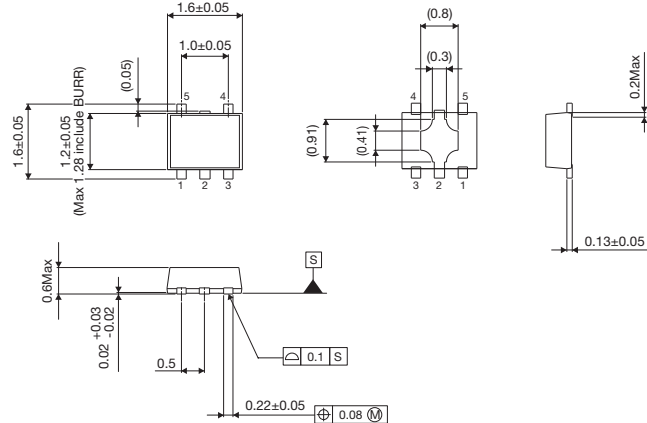
### VSOFF Packages

#### VSOFF5



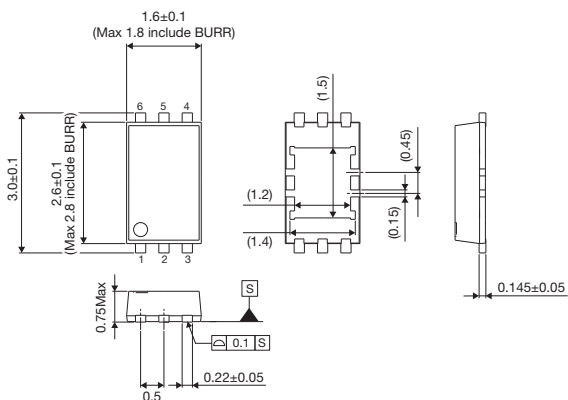
Taping: 3,000pcs

#### HVSOF5 (With back heat sink)



Taping: 3,000pcs

#### HVSOF6 (With back heat sink)



Taping: 3,000pcs

Note: Please refer package from "LAPIS Technology Packages".

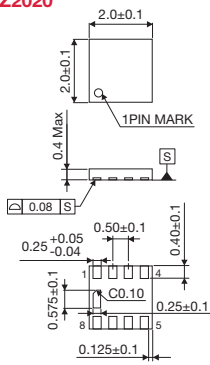


## MMP Packages

(Unit: mm)

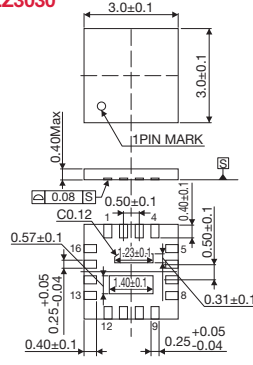
### VMMP Packages

#### VMMP08LZ2020



Taping: 4,000pcs

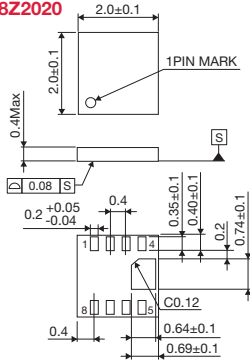
#### VMMP16LZ3030



Taping: 2,500pcs

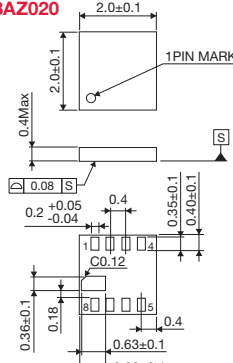
### UMMP Packages

#### UMMP008Z2020



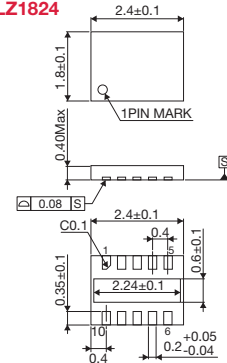
Taping: 4,000pcs

#### UMMP008AZ2020



Taping: 4,000pcs

#### UMMP10LZ1824

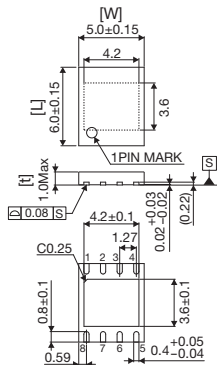


Taping: 2,500pcs

## SON Packages (With back heat sink)

(Unit: mm)

#### SON Package (for SON008V5060)



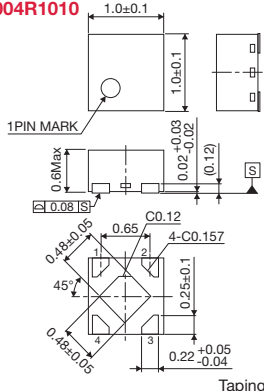
| Package                                  | Pin Number (pin)     | Length [L] (mm) | Width [W] (mm) | Thickness [t] (mm) | back heat sink (mm) | Package (pcs) taping |
|--|----------------------|-----------------|----------------|--------------------|---------------------|----------------------|
| <b>SON Package</b><br>Pin Pitch: 1.27mm  | <b>SON008V5060</b>   | 8               | 6.0            | 5.0                | 1.0                 | 3.6×4.2, 2,000       |
| <b>SSON Package</b><br>Pin Pitch: 0.65mm | <b>SSON004X1010</b>  | 4               | 1.0            | 1.0                | 0.6                 | 0.48×0.48, 5,000     |
|  | <b>SSON004X1216</b>  | 4               | 1.6            | 1.2                |                     | 0.8×0.75, 5,000      |
| <b>USON Package</b><br>Pin Pitch: 0.4mm  | <b>USON014X3020</b>  | 14              | 2.0            | 3.0                | 0.6                 | 0.8×2.5, 4,000       |
|  | <b>USON016X3315</b>  | 16              | 1.5            | 3.3                |                     | 0.6×2.9, 4,000       |
| <b>VSON Package</b><br>Pin Pitch: 0.5mm  | <b>VSON008V2030</b>  | 8               | 3.0            | 2.0                | 1.0                 | 1.4×1.5, 3,000       |
|  | <b>VSON008X2020</b>  |                 | 2.0            | 2.0                | 0.6                 | 0.8×1.5, 4,000       |
|  | <b>VSON008X2030</b>  |                 | 3.0            | 2.0                |                     | 1.4×1.5, 4,000       |
|  | <b>VSON010V3030</b>  | 10              | 3.0            | 3.0                | 1.0                 | 1.2×2.0, 3,000       |
|  | <b>VSON010X3020</b>  |                 | 2.0            | 3.0                | 0.6                 | 0.64×2.0, 4,000      |
|  | <b>VSON010X3030</b>  |                 | 3.0            | 3.0                |                     | 1.2×2.0, 4,000       |
|  | <b>VSON010FV3030</b> |                 | 3.0            | 3.0                | 1.0                 | 1.2×2.0, 3,000       |

Note: Please check the ROHM website for detailed dimensions.

## SON Special Packages (With back heat sink)

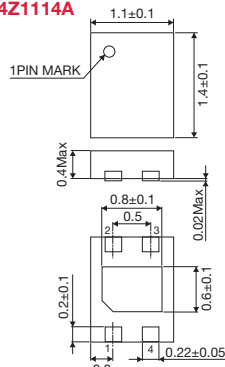
(Unit: mm)

#### SSON004R1010



Taping: 5,000pcs

#### VSON04Z1114A



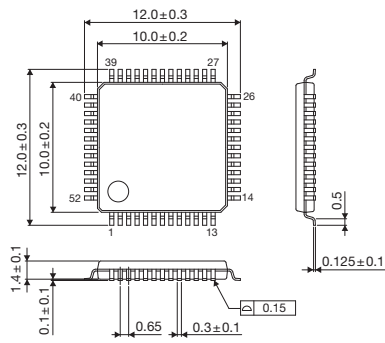
Taping: 5,000pcs

Note: Please refer package from "LAPIS Technology Packages".

## QFP Packages

(Unit: mm)

**SQFP Package (for SQFP-T52)**



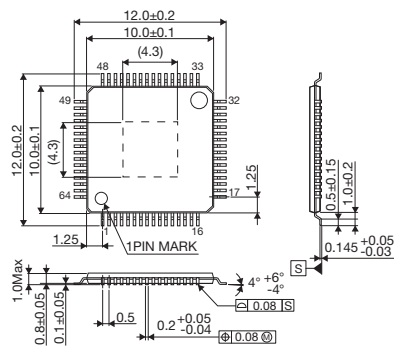
|  | Package          | Pin Number (pin) | Length [L] (mm) | Width [W] (mm) | Thickness [t] (mm) | Package (pcs) |        |
|--|------------------|------------------|-----------------|----------------|--------------------|---------------|--------|
|  |                  |                  |                 |                |                    | Tray          | Taping |
| <b>SQFP-T Package</b><br>Pin Pitch: 0.65mm | <b>SQFP-T52</b>  | 52               | 12.0            | 12.0           | 1.5                | 1,000         | 1,000  |
|  | <b>SQFP-T64</b>  | 64               | 14.0            | 14.0           |                    | 1,000         | —      |
|  | <b>SQFP-T80C</b> | 80               | 16.0            | 16.0           |                    | 500           | —      |
| <b>TQFP Package</b><br>Pin Pitch: 0.5mm    | <b>TQFP48V</b>   | 48               | 9.0             | 9.0            | 1.2                | 1,000         | 1,500  |
|  | <b>TQFP64V</b>   | 64               | 12.0            | 12.0           | 1.1                | 1,000         | 1,000  |
|  | <b>TQFP100V</b>  | 100              | 16.0            | 16.0           | 1.2                | 500           | 500    |
| <b>VQFP Package</b><br>Pin Pitch: 0.5mm    | <b>VQFP48C</b>   | 48               | 9.0             | 9.0            | 1.6                | 1,000         | 1,500  |
|  | <b>VQFP64</b>    | 64               | 12.0            | 12.0           |                    | 1,000         | 1,000  |
|  | <b>VQFP80</b>    | 80               | 14.0            | 14.0           |                    | 1,000         | 1,000  |
|  | <b>VQFP100</b>   | 100              | 16.0            | 16.0           |                    | 500           | 500    |

Note: Please check the ROHM website for detailed dimensions.

## QFP Packages (With back heat sink)

(Unit: mm)

**HTQFP Package (for HTQFP64AV)**



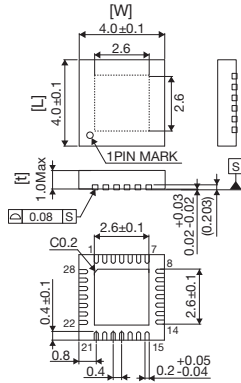
|  | Package           | Pin Number (pin) | Length [L] (mm) | Width [W] (mm) | Thickness [t] (mm) | back heat sink (mm) | Package (pcs) |        |
|--|-------------------|------------------|-----------------|----------------|--------------------|---------------------|---------------|--------|
|  |                   |                  |                 |                |                    |                     | Tray          | Taping |
| <b>HTQFP Package</b><br>Pin Pitch: 0.5mm | <b>HTQFP64AV</b>  | 64               | 12.0            | 12.0           | 1.0                | 4.3×4.3             | —             | 1,000  |
|  | <b>HTQFP64BV</b>  |                  | 12.0            | 12.0           |                    | 6.5×6.5             | —             | 1,000  |
| <b>HTQFP Package</b><br>Pin Pitch: 0.4mm | <b>HTQFP128UA</b> | 128              | 16.0            | 16.0           | 1.2                | 6.6×6.6             | —             | 900    |
| <b>HQFP Package</b><br>Pin Pitch: 0.5mm  | <b>HQFP144VM</b>  | 144              | 22.0            | 22.0           | 1.6                | 6.0×6.0             | —             | 60     |

Note: Please check the ROHM website for detailed dimensions.

## QFN Packages (With back heat sink)

(Unit: mm)

UQFN Package (for UQFN28V4040A)



|  | Package                                 | Pin Number (pin)    | Length [L] (mm) | Width [W] (mm) | Thickness [t] (mm) | back heat sink (mm) | Package (pcs) taping |
|--|---|---------------------|-----------------|----------------|--------------------|---------------------|----------------------|
| <b>SQFN Package</b><br>Pin Pitch: 0.65mm | <b>SQFN016V4040</b>                     | 16                  | 4.0             | 4.0            | 1.0                | 2.1×2.1             | 2,500                |
|  | <b>UQFN Package</b><br>Pin Pitch: 0.4mm | <b>UQFN28V4040A</b> | 28              | 4.0            | 4.0                | 1.0                 | 2.6×2.6              |
|  | <b>UQFN036V5050</b>                     | 36                  | 5.0             | 5.0            | 2.7×2.7            |                     | 2,500                |
|  | <b>UQFN040V5050</b>                     | 40                  | 5.0             | 5.0            | 3.3×3.3            |                     | 2,500                |
|  | <b>UQFN056V7070</b>                     | 56                  | 7.0             | 7.0            | 4.7×4.7            |                     | 1,500                |
|  | <b>UQFN56BV7070</b>                     |                     | 7.0             | 7.0            | 4.0×4.0            |                     | 1,500                |
|  | <b>UQFN68CV8080</b>                     | 68                  | 8.0             | 8.0            | 4.3×4.3            |                     | 1,000                |
|  | <b>UQFN88MV0100</b>                     | 88                  | 10.0            | 10.0           | 7.8×7.8            | 1,000               |                      |
| <b>VQFN Package</b><br>Pin Pitch: 0.5mm  | <b>VQFN11X3535A</b>                     | 11                  | 3.5             | 3.5            | 0.6                | —                   | 2,500                |
|  | <b>VQFN16FV3030</b>                     | 16                  | 3.0             | 3.0            | 1.0                | 1.4×1.4             | 3,000                |
|  | <b>VQFN16KV3030</b>                     |                     | 3.0             | 3.0            |                    | 1.4×1.4             | 3,000                |
|  | <b>VQFN16Z3030A</b>                     |                     | 3.0             | 3.0            | 0.4                | 1.8×1.8             | 4,000                |
|  | <b>VQFN20</b>                           | 20                  | 4.2             | 4.2            | 1.0                | —                   | 2,500                |
|  | <b>VQFN20FV3535</b>                     |                     | 3.5             | 3.5            |                    | 2.05×2.05           | 2,500                |
|  | <b>VQFN20PV3535</b>                     |                     | 3.5             | 3.5            |                    | 2.05×2.05           | 2,500                |
|  | <b>VQFN20QV3535</b>                     |                     | 3.5             | 3.5            |                    | 2.05×2.05           | 2,500                |
|  | <b>VQFN020V4040</b>                     |                     | 4.0             | 4.0            |                    | 2.1×2.1             | 2,500                |
|  | <b>VQFN24FV4040</b>                     |                     | 24              | 4.0            |                    | 4.0                 | 2.4×2.4              |
|  | <b>VQFN24SV4040</b>                     | 4.0                 |                 | 4.0            | 2.4×2.4            | 2,500               |                      |
|  | <b>VQFN024V4040</b>                     | 4.0                 |                 | 4.0            | 2.4×2.4            | 2,500               |                      |
|  | <b>VQFN28FV5050</b>                     | 28                  | 5.0             | 5.0            | 1.0                | 2.7×2.7             | 2,500                |
|  | <b>VQFN28SV5050</b>                     |                     | 5.0             | 5.0            |                    | 2.7×2.7             | 2,500                |
|  | <b>VQFN028V5050</b>                     |                     | 5.0             | 5.0            |                    | 2.7×2.7             | 2,500                |
|  | <b>VQFN32FBV050</b>                     | 32                  | 5.0             | 5.0            | 1.0                | 3.4×3.4             | 2,500                |
|  | <b>VQFN32FAV050</b>                     |                     | 5.0             | 5.0            |                    | 3.4×3.4             | 2,500                |
|  | <b>VQFN32SV5050</b>                     |                     | 5.0             | 5.0            |                    | 3.4×3.4             | 2,500                |
|  | <b>VQFN032V5050</b>                     |                     | 5.0             | 5.0            |                    | 3.4×3.4             | 2,500                |
|  | <b>VQFN36</b>                           | 36                  | 6.2             | 6.2            | 0.95               | —                   | 2,500                |
|  | <b>VQFN036V6060</b>                     |                     | 6.0             | 6.0            | 1.0                | 3.6×3.6             | 2,000                |
|  | <b>VQFN40W6060A</b>                     | 40                  | 6.0             | 6.0            | 0.8                | 4.5×4.5             | 2,000                |
|  | <b>VQFN040V6060</b>                     |                     | 6.0             | 6.0            | 1.0                | 3.7×3.7             | 2,000                |
|  | <b>VQFN48V7070A</b>                     | 48                  | 7.0             | 7.0            | 1.0                | 5.3×5.3             | 1,500                |
|  | <b>VQFN48MCV070</b>                     |                     | 7.0             | 7.0            |                    | 5.6×5.6             | 1,500                |
|  | <b>VQFN48FV7070</b>                     |                     | 7.0             | 7.0            |                    | 3.2×3.2             | 1,500                |
|  | <b>VQFN048V7070</b>                     |                     | 7.0             | 7.0            |                    | 4.7×4.7             | 1,500                |
|  | <b>VQFN56AV8080</b>                     | 56                  | 8.0             | 8.0            | 1.0                | 3.4×3.4             | 1,000                |
| <b>VQFN56FV8080</b>                      | 8.0                                     |                     | 8.0             | 5.5×5.5        |                    | 1,000               |                      |

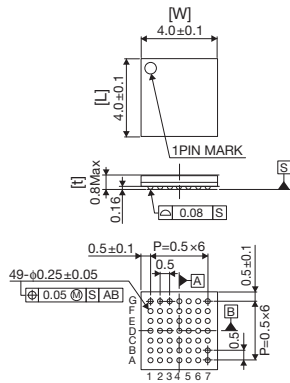
Note: Please check the ROHM website for detailed dimensions.



## BGA Packages

(Unit: mm)

### VBGA Package (for VBGA049W040A)



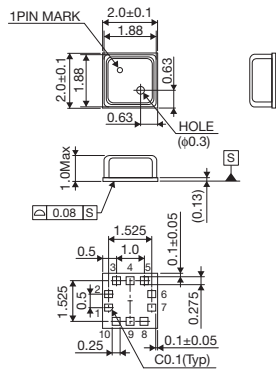
|  | Package             | Pin Number (pin) | Length [L] (mm) | Width [W] (mm) | Thickness [t] (mm) | Package (pcs) taping |
|--|---------------------|------------------|-----------------|----------------|--------------------|----------------------|
| <b>SBGA Package</b><br>Pin Pitch: 0.65mm | <b>SBGA072T070A</b> | 72               | 7.0             | 7.0            | 1.2                | 1,500                |
|  | <b>VBGA048W040</b>  | 48               | 4.0             | 4.0            | 0.9                | 2,500                |
| <b>VBGA Package</b><br>Pin Pitch: 0.5mm  | <b>VBGA049W040A</b> | 49               | 4.0             | 4.0            | 0.8                | 2,500                |
|  | <b>VBGA064T050A</b> | 64               | 5.0             | 5.0            | 1.2                | 2,500                |
|  | <b>VBGA099W060</b>  | 99               | 6.0             | 6.0            | 0.9                | 2,000                |

Note: Please check the ROHM website for detailed dimensions.

## Special Packages

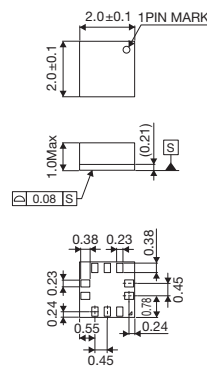
(Unit: mm)

### CLGA10V020A



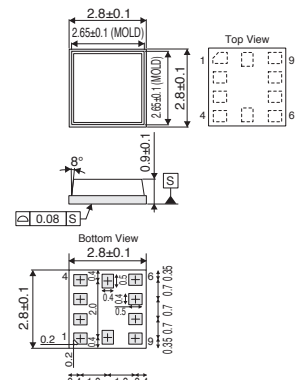
Taping: 3,000pcs

### MLGA10V020A



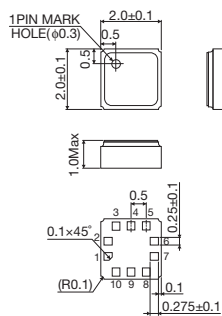
Taping: 2,500pcs

### WLGA010V28



Taping: 3,000pcs

### RLGA10V020T/ RLGA10VG020T



## WL-CSP Packages

(Unit: mm)

### VCSP <Pin Pitch: 0.5mm>

| VCSP85H   | VCSP60N   | VCSP50L   | VCSP35L  |
|---|---|---|--|
|   |   |   |  |
| 2.8mm square size less than: 3,000pcs<br>2.81mm square size or more: 2,500pcs | 2.8mm square size less than: 3,000pcs<br>2.81mm square size or more: 2,500pcs | 2.8mm square size less than: 3,000pcs<br>2.81mm square size or more: 2,500pcs | 2.8mm square size less than: 3,000pcs<br>2.81mm square size or more: 2,500pcs<br>Embossed carrier tape: 3,000pcs |

### UCSP <Pin Pitch: 0.4mm>

| UCSP75M  | UCSP55M   | UCSP50L   | UCSP35L  |
|--|---|---|--|
|  |   |   |  |
| 2.8mm square size less than: 3,000pcs<br>2.81mm square size or more: 2,500pcs                                    | 2.8mm square size less than: 3,000pcs<br>2.81mm square size or more: 2,500pcs | 2.8mm square size less than: 3,000pcs<br>2.81mm square size or more: 2,500pcs | 2.8mm square size less than: 3,000pcs<br>2.81mm square size or more: 2,500pcs<br>Embossed carrier tape: 3,000pcs |
| UCSP30L  | UCSP25L   | UCSP16X   |  |
|  |   |   |  |
| 2.8mm square size less than: 3,000pcs<br>2.81mm square size or more: 2,500pcs<br>Embossed carrier tape: 3,000pcs | Embossed carrier tape: 3,000pcs   | Embossed carrier tape: 3,000pcs   |  |

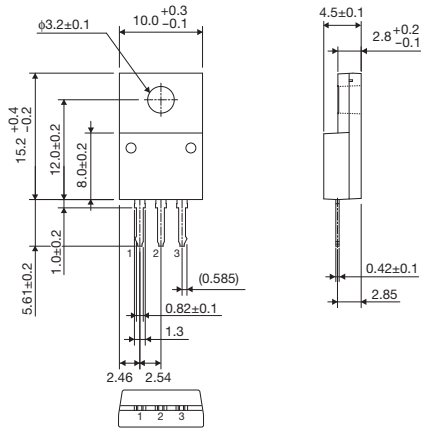
Note: Please refer package from "LAPIS Technology Packages".

Power Packages

(Unit: mm)

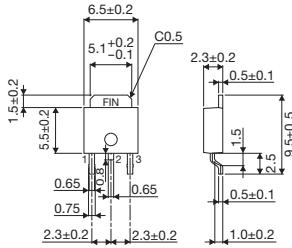
Power-3pin

TO220CP-3



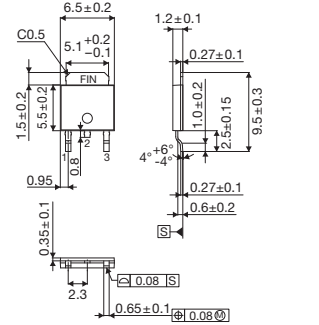
Taping: 500pcs

TO252-3



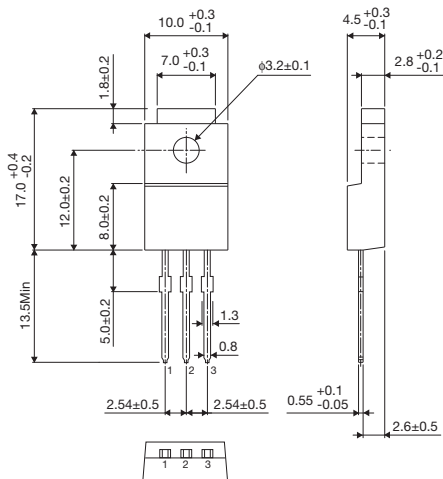
Taping: 2,000pcs

TO252S-3



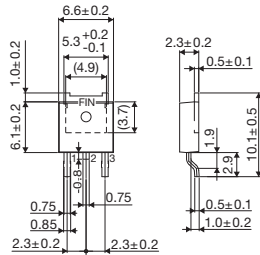
Taping: 2,000pcs

TO220FP-3



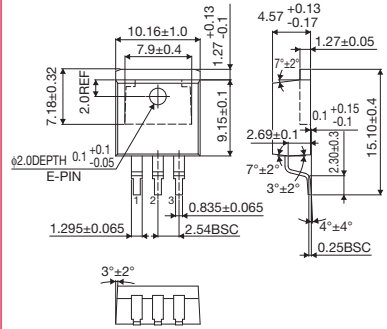
Container tube: 500pcs

TO252-J3



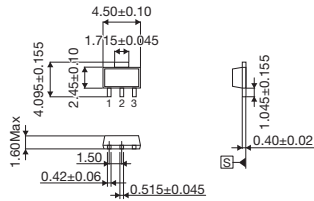
Taping: 2,000pcs

TO263-3



Taping: 500pcs

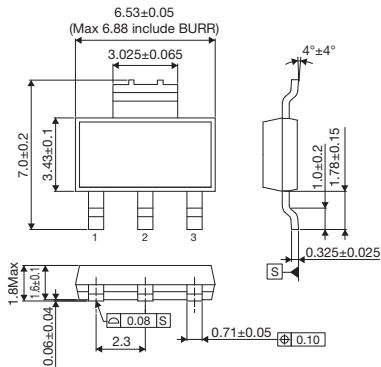
SOT89-3K



Taping: 1,000pcs

Power-4pin

SOT223-4



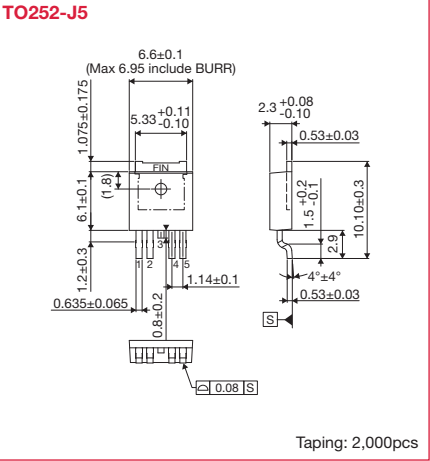
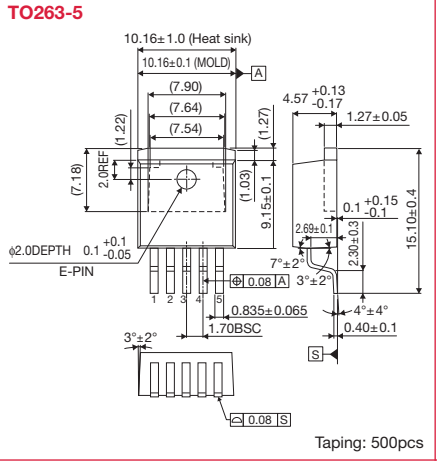
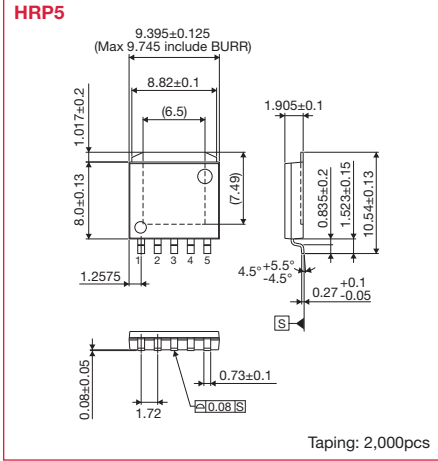
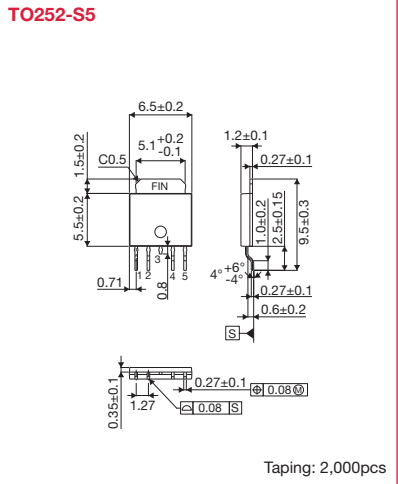
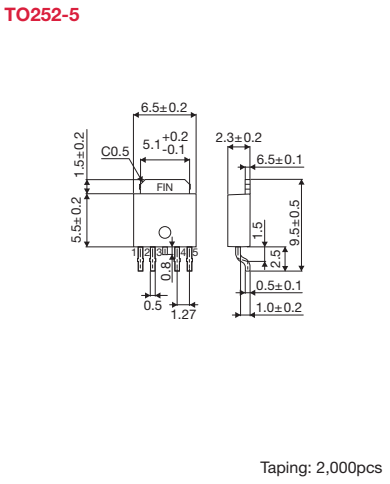
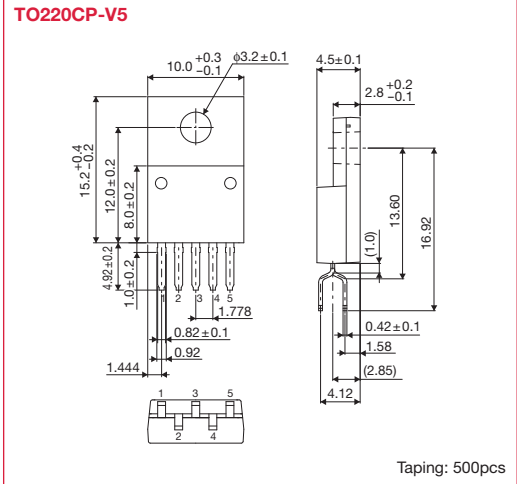
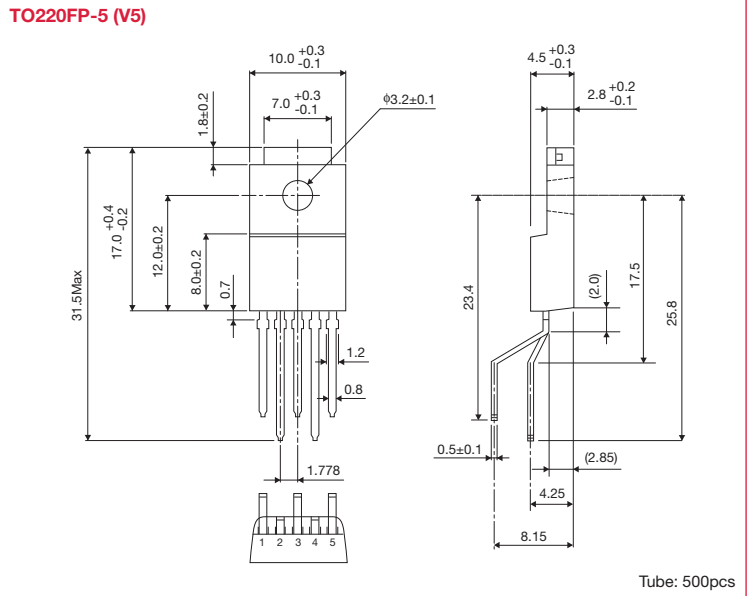
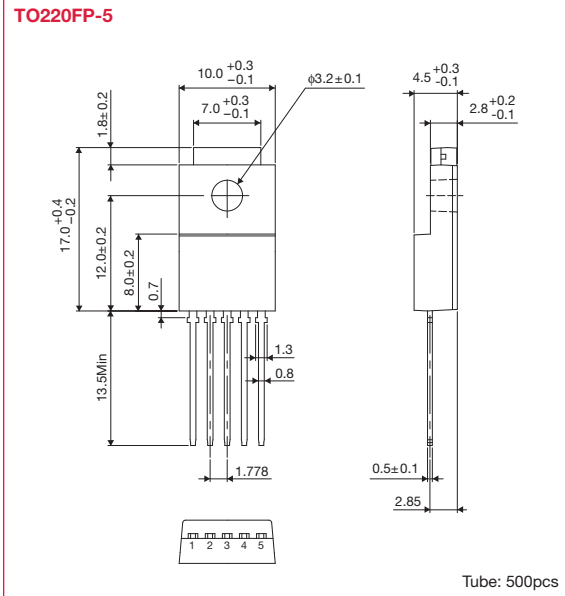
Taping: 2,000pcs

Note: Please refer package from "LAPIS Technology Packages".

**Power Packages**

(Unit: mm)

**Power-5pin**



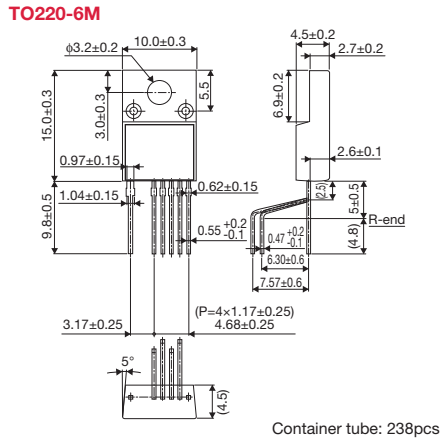
Note: Please refer package from "LAPIS Technology Packages".

IC Packages

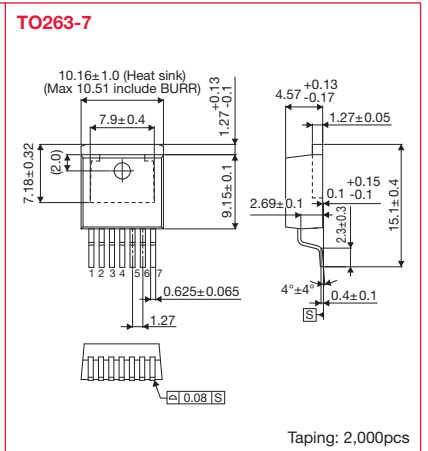
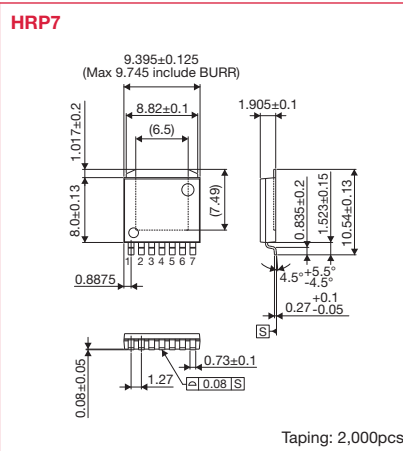
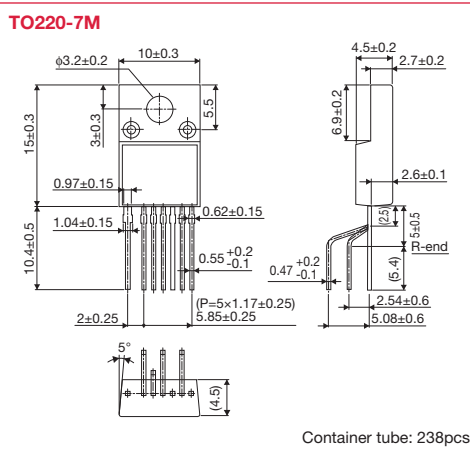
Power Packages

(Unit: mm)

Power-6pin



Power-7pin



Note: Please refer package from "LAPIS Technology Packages".

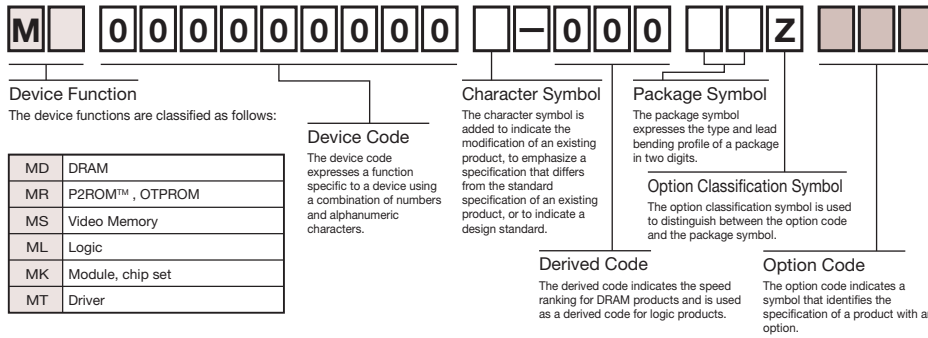
## LAPIS Technology Packages

|   |                                    |
|---|------------------------------------|
| <b>Part No. Explanation</b> ..... P.124 | <b>QFN Packages</b> ..... P.127    |
| <b>SOP Packages</b> ..... P.125         | <b>WSON Packages</b> ..... P.128   |
| <b>TSOP Packages</b> ..... P.125        | <b>BGA Packages</b> ..... P.129    |
| <b>QFP Packages</b> ..... P.126         | <b>WL-CSP Packages</b> ..... P.129 |

These package size are an example. For details, please inquire to the sales.

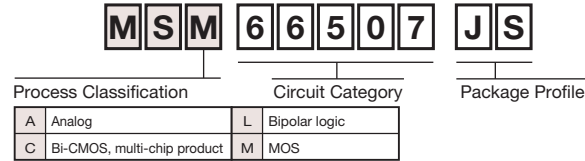
## LAPIS Technology LSI Part No. Explanation

Product names are assigned to our semiconductor devices using the following convention, starting with the character "M".



The following shows the convention of item name assignment for conventional products.

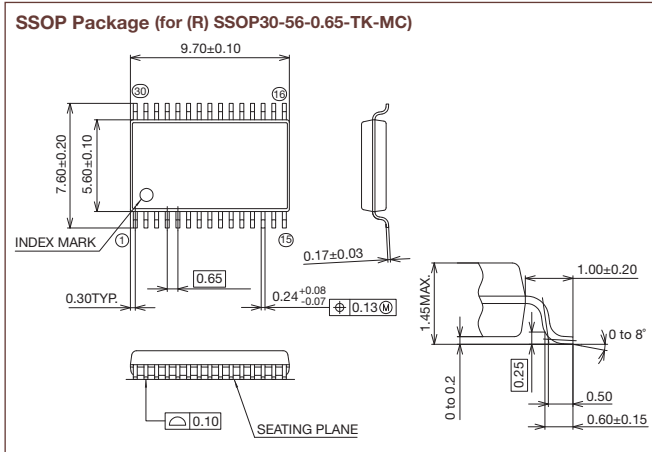
\* The actual package profile is not shown here.



These package size are an example. For details, please inquire to the sales.

SOP Packages

(Unit: mm)



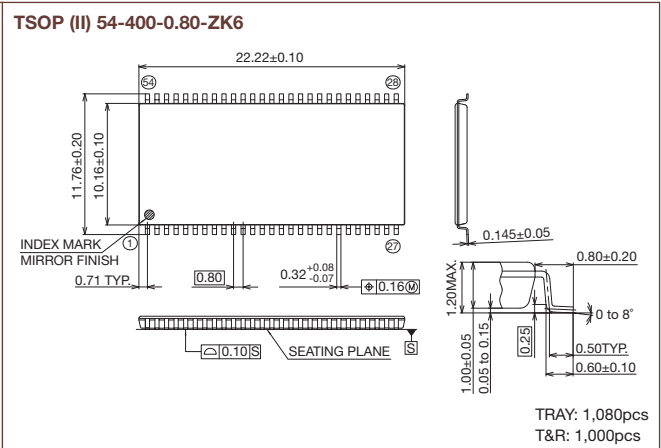
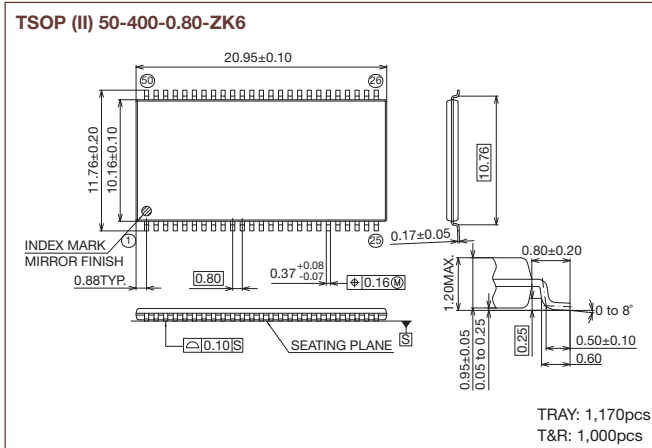
|                                    | Package                     | Pin Number (pin) | Length [L] (mm) | Width [W] (mm) | Thickness [T] (mm) | TRAY (pcs) | T&R (pcs) |
|------------------------------------|-----------------------------|------------------|-----------------|----------------|--------------------|------------|-----------|
| SSOP Package<br>Pin Pitch: 1mm     | SSOP32-430-1.00-K6          | 32               | 12.0            | 15.95          | 2.50               | 1,280      | 1,000     |
| SSOP Package<br>Pin Pitch: 0.65mm  | (P-) SSOP16-0225-0.65-SK    | 16               | 6.4             | 5.0            | 1.15               | 4,760      | 2,500     |
|                                    | (P-) SSOP16-0225-0.65-TK6   | 16               | 6.4             | 5.0            | 1.15               | 4,760      | 2,500     |
|                                    | (P-) SSOP30-56-0.65-TK-MC   | 30               | 7.6             | 9.7            | 1.45               | 2,000      | 2,000     |
|                                    | (P-) SSOP30-56-0.65-Z6K6    | 30               | 7.6             | 9.7            | 1.50               | 2,000      | 2,000     |
|                                    | (P-) SSOP30-56-0.65-Z6K8-MC | 30               | 7.6             | 9.7            | 1.85               | 2,000      | 2,000     |
|                                    | (P-) SSOP30-56-0.65-ZK6     | 30               | 7.6             | 9.7            | 1.85               | 2,000      | 2,000     |
|                                    | (P-) SSOP30-56-0.65-ZK6-MC  | 30               | 7.6             | 9.7            | 1.85               | 2,000      | 2,000     |
| TSSOP Package<br>Pin Pitch: 0.65mm | (P-) TSSOP20-0225-0.65-TK6  | 20               | 6.4             | 6.5            | 1.10               | 4,160      | 2,000     |
| VSSOP Package<br>Pin Pitch: 0.65mm | P-VSSOP8-0150-0.65-TK6      | 8                | 4.0             | 2.9            | 0.90               | —          | 3,000     |

Note: Please check the LAPIS Technology website for detailed dimensions.

TSOP Packages

(Unit: mm)

TSOP (Type II)

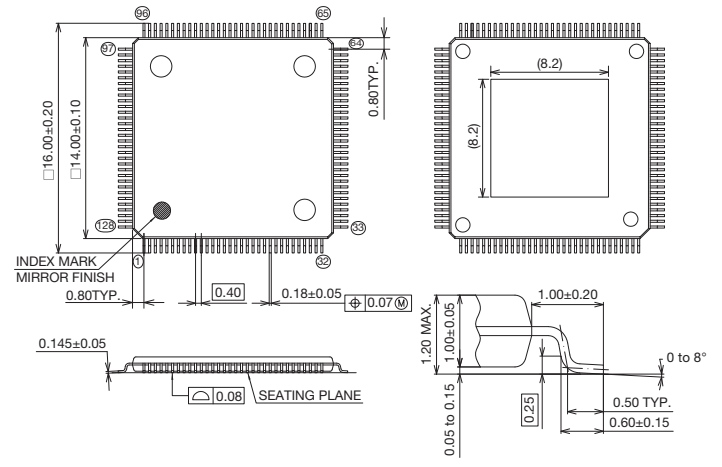


These package size are an example. For details, please inquire to the sales.

## QFP Packages

(Unit: mm)

TQFP Package (for (R) TQFP128-1414-0.40-Z6K6)



## QFP

|                                  | Package                   | Pin Number (pin) | Length [L] (mm) | Width [W] (mm) | Thickness [t] (mm) | TRAY (pcs) | T&R (pcs) |
|----------------------------------|---------------------------|------------------|-----------------|----------------|--------------------|------------|-----------|
| QFP Package<br>Pin Pitch: 0.8mm  | QFP44-P-910-0.80-2K       | 44               | 13.5            | 14.5           | 2.25               | 1,440      | 1,000     |
|                                  | (P-) QFP64-1414-0.80-ZK6  | 64               | 17.2            | 17.2           | 2.80               | 840        | —         |
|                                  | (P-) QFP80-1420-0.80-BK6  | 80               | 19.0            | 25.0           | 2.50               | 600        | —         |
| QFP Package<br>Pin Pitch: 0.65mm | (P-) QFP56-910-0.65-2K6   | 56               | 13.5            | 14.5           | 2.25               | 1,400      | 1,000     |
|                                  | (P-) QFP80-1414-0.65-ZK6  | 80               | 17.2            | 17.2           | 3.05               | 840        | —         |
|                                  | (P-) QFP100-1420-0.65-BK6 | 100              | 19.0            | 25.0           | 2.50               | 600        | —         |

Note: Please check the LAPIS Technology website for detailed dimensions.

## LQFP

|                                   | Package                    | Pin Number (pin) | Length [L] (mm) | Width [W] (mm) | Thickness [t] (mm) | TRAY (pcs) | T&R (pcs) |
|-----------------------------------|----------------------------|------------------|-----------------|----------------|--------------------|------------|-----------|
| LQFP Package<br>Pin Pitch: 0.8mm  | (P-) LQFP32-0707-0.80-TK6  | 80               | 9.0             | 9.0            | 1.600              | 2,500      | 1,000     |
| LQFP Package<br>Pin Pitch: 0.65mm | (P-) LQFP144-2020-0.50-QK6 | 50               | 22.0            | 22.0           | 1.600              | 600        | —         |

Note: Please check the LAPIS Technology website for detailed dimensions.

## TQFP

|                                   | Package                       | Pin Number (pin) | Length [L] (mm) | Width [W] (mm) | Thickness [t] (mm) | TRAY (pcs) | T&R (pcs) |
|-----------------------------------|-------------------------------|------------------|-----------------|----------------|--------------------|------------|-----------|
| TQFP Package<br>Pin Pitch: 0.80mm | (P-) TQFP32-0707-0.80-Z6K6    | 32               | 9.0             | 9.0            | 1.20               | 2,500      | 1,000     |
|                                   | (P-) TQFP32-0707-0.80-Z6K6-MC | 32               | 9.0             | 9.0            | 1.20               | 2,500      | 1,000     |
|                                   | (P-) TQFP44-1010-0.80-ZK6     | 44               | 12.0            | 12.0           | 1.20               | 1,600      | 1,000     |
| TQFP Package<br>Pin Pitch: 0.65mm | (P-) TQFP52-1010-0.65-ZK6     | 52               | 12.0            | 12.0           | 1.20               | 1,600      | 1,000     |
| TQFP Package<br>Pin Pitch: 0.5mm  | (P-) TQFP48-0707-0.50-RK6     | 48               | 9.0             | 9.0            | 1.10               | 2,500      | 1,000     |
|                                   | (P-) TQFP48-0707-0.50-SK6     | 48               | 9.0             | 9.0            | 1.20               | 2,500      | 1,000     |
|                                   | (P-) TQFP48-0707-0.50-Z6K6    | 48               | 9.0             | 9.0            | 1.20               | 2,500      | 1,000     |
|                                   | (P-) TQFP48-0707-0.50-Z6K6-MC | 48               | 9.0             | 9.0            | 1.20               | 2,500      | 1,000     |
|                                   | (P-) TQFP48-0707-0.50-Z9K6-MC | 48               | 9.0             | 9.0            | 1.20               | 2,500      | 1,000     |
|                                   | (P-) TQFP48-0707-0.50-ZK6     | 48               | 9.0             | 9.0            | 1.20               | 2,500      | 1,000     |
|                                   | (P-) TQFP64-1010-0.50-ZK6     | 64               | 12.0            | 12.0           | 1.20               | 1,600      | 1,000     |

Note: Please check the LAPIS Technology website for detailed dimensions.



These package size are an example. For details, please inquire to the sales.

**QFP Packages**

(Unit: mm)

**TQFP**

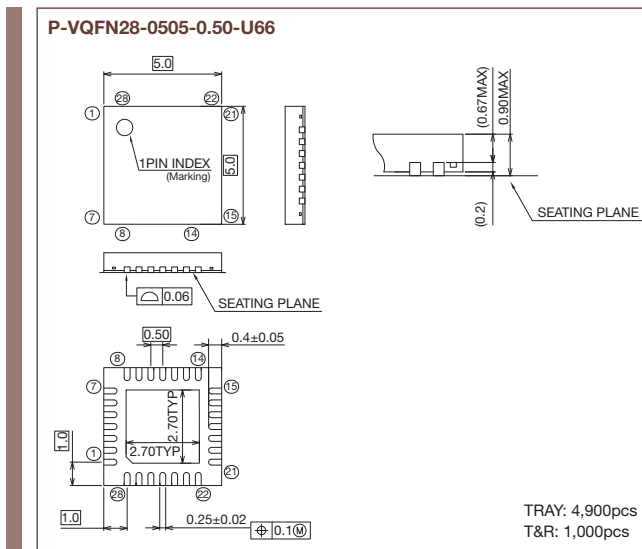
|  | Package                        | Pin Number (pin) | Length [L] (mm) | Width [W] (mm) | Thickness [t] (mm) | TRAY (pcs) | T&R (pcs) |
|--|--------------------------------|------------------|-----------------|----------------|--------------------|------------|-----------|
| <b>TQFP Package</b><br>Pin Pitch: 0.5mm  | (P-) TQFP80-1212-0.50-TK       | 80               | 14.0            | 14.0           | 1.20               | 1,190      | —         |
|  | (P-) TQFP80-1212-0.50-ZK6      | 80               | 14.0            | 14.0           | 1.20               | 1,190      | —         |
|  | (P-) TQFP100-1414-0.50-Z6K6    | 100              | 16.0            | 16.0           | 1.20               | 900        | —         |
|  | (P-) TQFP100-1414-0.50-ZK6     | 100              | 16.0            | 16.0           | 1.20               | 900        | —         |
| <b>TQFP Package</b><br>Pin Pitch: 0.40mm | (P-) TQFP80-1010-0.40-ZK6      | 80               | 12.0            | 12.0           | 1.20               | 1,600      | —         |
|  | (P-) TQFP120-1414-0.40-ZK6     | 120              | 16.0            | 16.0           | 1.20               | 900        | —         |
|  | (P-) TQFP128-1414-0.40-ZK6     | 128              | 16.0            | 16.0           | 1.20               | 900        | —         |
|  | (P-) TQFP128-1414-0.40-Z6K6    | 128              | 16.0            | 16.0           | 1.20               | 900        | —         |
|  | (P-) TQFP128-1414-0.40-Z6K6-MC | 128              | 16.0            | 16.0           | 1.20               | 900        | —         |
|  | (P-) TQFP128-1414-0.40-ZK6-MC  | 128              | 16.0            | 16.0           | 1.20               | 900        | —         |

Note: Please check the LAPIS Technology website for detailed dimensions.

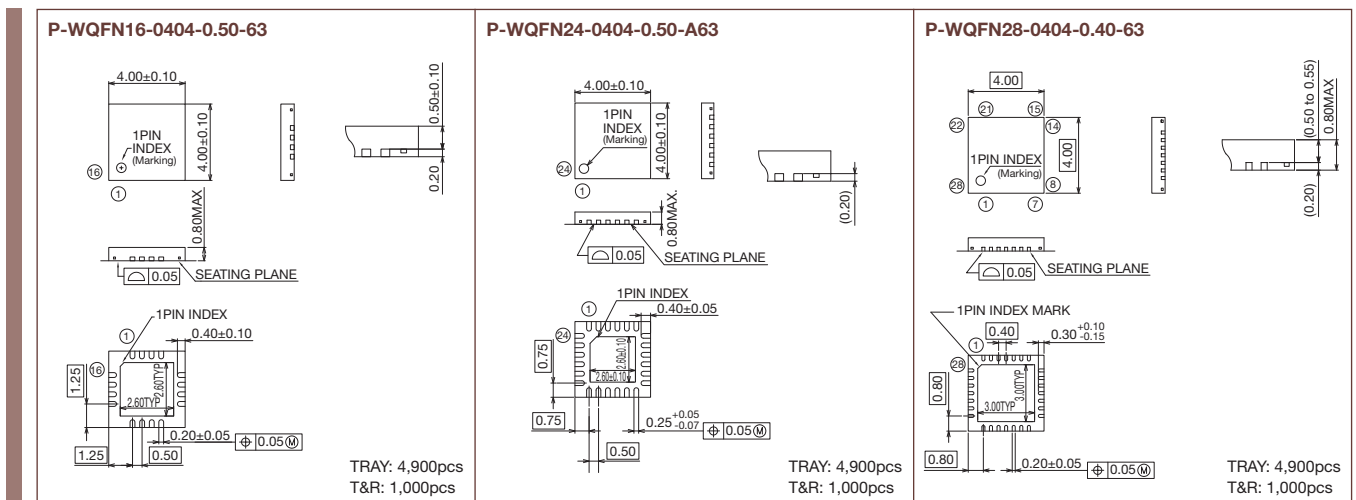
**QFN Packages**

(Unit: mm)

**VQFN**



**WQFN**



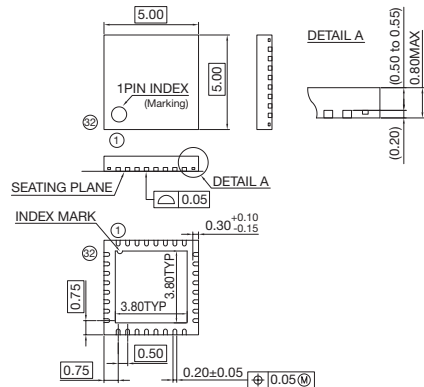
These package size are an example. For details, please inquire to the sales.

**QFN Packages**

(Unit: mm)

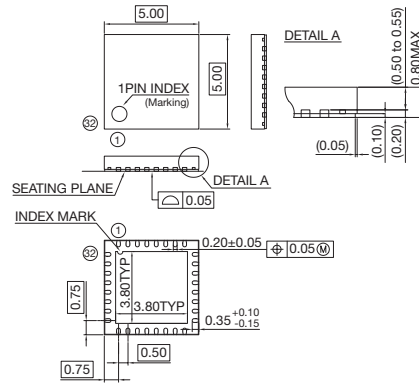
**WQFN**

**P-WQFN32-0505-0.50-A63**



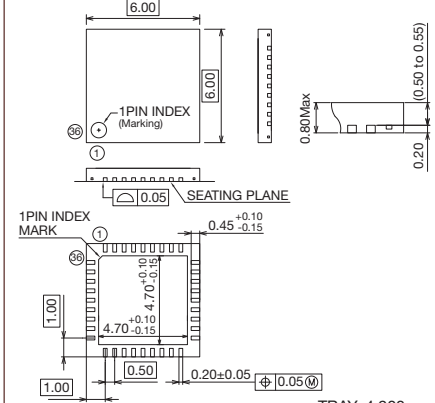
TRAY: 4,030pcs  
T&R: 1,000pcs

**P-WQFN32-0505-0.50-W66**



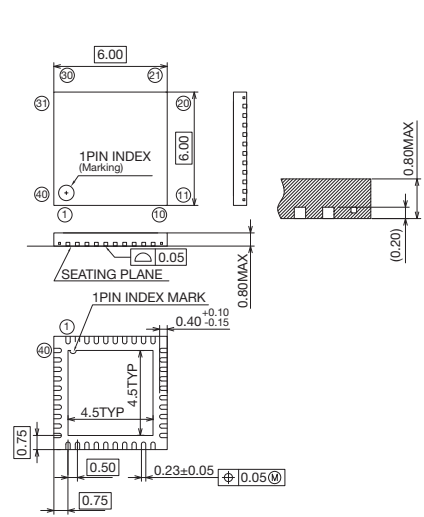
TRAY: 4,030pcs  
T&R: 1,000pcs

**WQFN36-0606-0.50-A63**



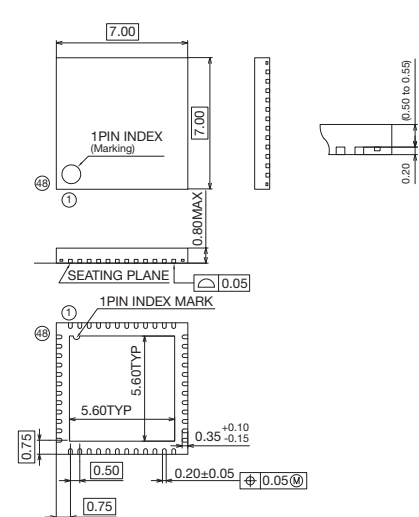
TRAY: 4,900pcs  
T&R: 2,000pcs

**P-WQFN40-0606-0.50-63**



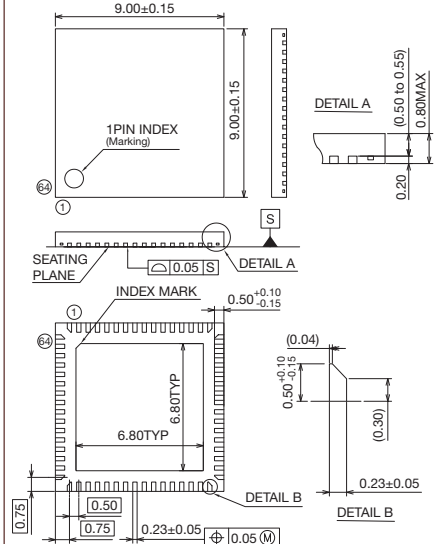
TRAY: 4,900pcs  
T&R: 2,500pcs

**P-WQFN48-0707-0.50-63**



TRAY: 2,500pcs  
T&R: 2,000pcs

**P-WQFN64-0909-0.50-63**



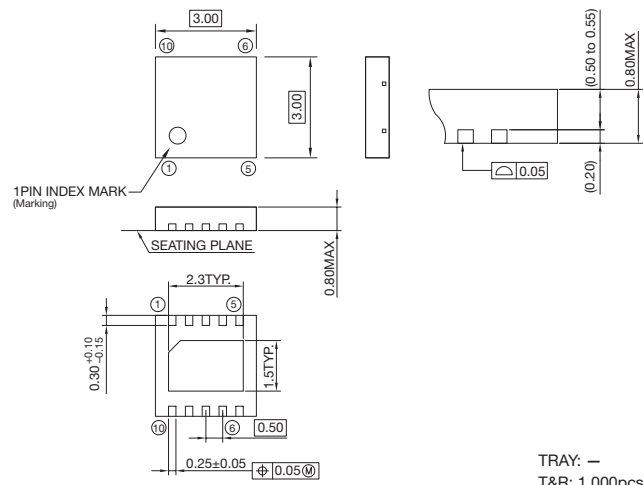
TRAY: 2,600pcs  
T&R: 3,000pcs

**WSON Packages**

(Unit: mm)

**WSON**

**P-WSON10-0303-0.50-63**



TRAY: —  
T&R: 1,000pcs

