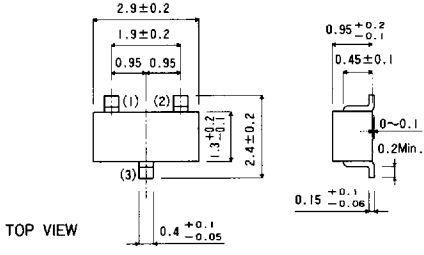
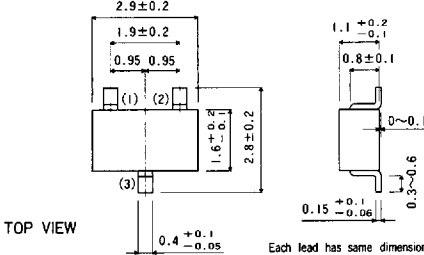




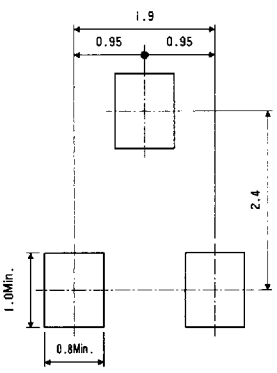


U.S. European Type Series

SST (U.S. / European SOT-23) • SMT (SC-59 / Japanese SOT-23)

Package style and dimensions

(Unit : mm)

| Package | <p style="text-align: center;">SST (U. S. / European SOT-23)</p> | <p style="text-align: center;">SMT (SC-59 / Japanese SOT-23)</p> |
|---|---|---|
| Dimensions |  <p style="text-align: center;">TOP VIEW</p> <p>(1) Emitter (2) Base (3) Collector</p> |  <p style="text-align: center;">TOP VIEW</p> <p>Each lead has same dimensions</p> <p>(1) Emitter (2) Base (3) Collector</p> |
| Actual size |  |  |
| Enlarged (×3.0) |  |  |
| <p>Recommendable copper plate area dimension on printed circuit board</p> | | |
|  | | |

NPN Transistors

Electrical characteristics of each part No. can be looked up from the data of DIE No.

General purpose small signal amplifiers

| Part No. Package | | BV _{CEO} Min. | BV _{CE0} Min. | BV _{EBO} Min. | I _{CBO} @V _{CB} Max. | h _{FE} Min. Max. | @I _C & V _{CE} | V _{CE(sat)} Max. | V _{BE(sat)} Max. | @ I _C | C _{ob} Max. | f _T Min. | @ I _C | NF | I _C Max. | Marking | DIE NO. |
|---------------------|----------|---------------------------|---------------------------|---------------------------|---|------------------------------|--|------------------------------|------------------------------|----------------------|-------------------------|------------------------|------------------|-----|------------------------|---------|------------|
| SST | SMT | | | | | | | | | | | | | | | | |
| SST1130 | MMST1130 | 30V | 25V | 5V | 50nA 20V | 120 360 | 2mA 1V 50mA 1V | 0.3V | 0.95V | 50mA | 4pF | | | | 200mA | R1C | C22 |
| SST5088 | MMST5088 | 35V | 30V | 4.5V | 100nA 30V | 300 900 | 100μA 5V 1.0mA 5V 10mA 5V | 0.3V | 0.8V | 10mA | 4pF | 50MHz | 0.5mA | 3dB | 200mA | R1Q | C22 |
| SST5089 | MMST5089 | 30V | 25V | 4.5V | 100nA 25V | 400 1200 | 0.1mA 5V 1mA 5V 10mA 5V | 0.5V | 0.8V | 10mA | 4pF | 50MHz | 0.5mA | | 200mA | R1R | C22 |
| SST5210 | - | 50V | 50V | 4.5V | 50nA 35V | 200 600 | 100μA 5V 1.0mA 5V 10mA 5V | 0.7V | 0.85V | 10mA | 4pF | 30MHz | 0.5mA | 2dB | 200mA | RSR | C22 |
| SST6428 | MMST6428 | 60V | 50V | 6V | 100nA 30V | 250 250 | 0.01mA 5V 0.1mA 5V 1mA 5V 10mA 5V | 0.2V | | 10mA | 3pF | 100MHz | 1mA | | 200mA | R1K | C22 |
| SST6838 | MMST6838 | 50V | 40V | 5V | 0.5μA 30V | 200 150 | 1mA 5V 10mA 5V | 0.4V | | 50mA | 3.5pF | 50MHz | 2mA | | 200mA | RBR | C22 |
| SST7208 | - | 60V | 60V | 5V | 0.2μA 60V (CER) | 75 100 | 10mA 5V 1mA 5V | 0.5V 0.4V 0.3V | 1.2V 1.0V 0.95V | 100mA 10mA 1mA | | 180MHz | Typ. | | 100mA | RBQ | C22 |
| SSTT97 | - | 60V | 40V | 6V | 50nA 40V | 250 700 | 0.1mA 5V | | 0.65V | 0.1mA | 4pF | | | 2dB | 200mA | R97 | C22 |
| SSTA20 | MMSTA20 | 40V | 40V | 5V | 100nA 30V | 120 | 2mA 1V | 0.25V | 0.95V | 10mA | 4pF | 125MHz | 5mA | | 200mA | R1C | C22 |

General purpose amplifiers and switches

| Part No. Package | | BV _{CEO} Min. | BV _{CE0} Min. | BV _{EBO} Min. | I _{CBO} @V _{CB} Max. | h _{FE} Min. Max. | @I _C & V _{CE} | V _{CE(sat)} Max. | V _{BE(sat)} Max. | @ I _C | C _{ob} Max. | f _T Min. | @ I _C | t _{off} Max. | I _C Max. | Marking | DIE NO. |
|---------------------|-----------|---------------------------|---------------------------|---------------------------|---|------------------------------|--|------------------------------|------------------------------|------------------|-------------------------|------------------------|------------------|--------------------------|------------------------|---------|------------|
| SST | SMT | | | | | | | | | | | | | | | | |
| SST2222 | MMST2222 | 60V | 30V | 5V | 100nA 50V | 35 50 75 100 | 0.1mA 10V 1.0mA 10V 10mA 10V 150mA 10V | 0.4V 1.6V | 1.3V 2.6V | 150mA 500mA | 8pF | 250MHz | 20mA | | 600mA | R1B | C31 |
| SST2222A | MMST2222A | 75V | 40V | 6V | 100nA 60V | 35 50 75 100 | 0.1mA 10V 1.0mA 10V 10mA 10V 150mA 10V | 0.3V 1V | 1.2V 2V | 150mA 500mA | 8pF | 250MHz | 20mA | 285ns | 600mA | R1P | C31 |
| SST3904 | MMST3904 | 60V | 40V | 6V | 50nA 30V (CEX) | 40 70 100 60 30 | 0.1mA 1V 1.0mA 1V 10mA 1V 50mA 1V 100mA 1V | 0.2V 0.3V | 0.85V 0.95V | 10mA 50mA | 4pF | 300MHz | 10mA | 250ns | 200mA | R1A | C37 |
| SST4124 | MMST4124 | 30V | 25V | 5V | 50nA 20V | 120 60 | 2.0mA 1V 50mA 1V | 0.3V | 0.95V | 50mA | 4pF | 300MHz | 10mA | | 200mA | RZC | C37 |
| SST4400 | - | 60V | 40V | 6V | 100nA 35V | 20 40 50 20 | 1.0mA 1V 10mA 1V 150mA 1V 500mA 2V | 0.4V 0.75V | 0.95V 1.2V | 150mA 500mA | 6.5pF | 200MHz | 20mA | 255ns | 600mA | R2Z | C31 |
| SST4401 | MMST4401 | 60V | 40V | 6V | 100nA 35V | 20 40 80 100 40 | 0.1mA 1V 1mA 1V 10mA 1V 150mA 1V 500mA 2V | 0.4V 0.75V | 0.95V 1.2V | 150mA 500mA | 6.5pF | 250MHz | 20mA | 225ns | 600mA | R2X | C31 |

U.S. European Type Series

NPN Transistors

Electrical characteristics of each part No. can be looked up from the data of DIE No.

■ Medium power amplifiers

| Part No. Package | | BV _{CBO} Min. | BV _{CEO} Min. | BV _{EBO} Min. | I _{CBO} Max. | I _{CBO} @ V _{CE} Max. | h _{FE} Min. Max. | @ I _C & V _{CE} | V _{CE(sat)} Max. | & V _{BE(sat)} Max. | @ I _C | C _{ob} Max. | f _T Min. | @ I _C | t _{off} Max. | I _C Max. | Marking | DIE NO. |
|---------------------|---------|---------------------------|---------------------------|---------------------------|--------------------------|--|------------------------------|------------------------------------|------------------------------|--------------------------------|------------------|-------------------------|------------------------|------------------|--------------------------|------------------------|---------|------------|
| SST | SMT | | | | | | | | | | | | | | | | | |
| SSTA05 | — | 60V | 60V | 4V | 100nA | 60V | 100 | 10mA 1V | 0.25V | 1.2V (V _{BE(on)}) | 100mA | | 100MHz | 10mA | | 500mA | R1H | D16 |
| SSTA06 | MMSTA06 | 80V | 80V | 4V | 100nA | 80V | 100 | 10mA 1V | 0.25V | 1.2V (V _{BE(on)}) | 100mA | | 100MHz | 10mA | | 500mA | R1G | D16 |

■ Darlington amplifiers

| Part No. Package | | BV _{CBO} Min. | BV _{CEO} Min. | BV _{EBO} Min. | I _{CBO} Max. | I _{CBO} @ V _{CE} Max. | h _{FE} Min. Max. | @ I _C & V _{CE} | V _{CE(sat)} Max. | & V _{BE(sat)} Max. | @ I _C | C _{ob} Max. | f _T Min. | @ I _C | NF | I _C Max. | Marking | DIE NO. |
|---------------------|---------|---------------------------|---------------------------|---------------------------|--------------------------|--|---------------------------------------|------------------------------------|------------------------------|--------------------------------|------------------|-------------------------|------------------------|------------------|------|------------------------|---------|------------|
| SST | SMT | | | | | | | | | | | | | | | | | |
| SST6426 | — | 40V | 40V | 12V | 50nA | 30V | 20K 200K 10mA 5V 30K 300K 100mA 5V | 1.2V 1.5V | 2.0V | 5mA 500mA | 7pF | | | | 10dB | 500mA | RX7 | D25 |
| SST6427 | — | 40V | 40V | 12V | 50nA | 30V | 10K 100K 10mA 5V 20K 200K 100mA 5V | 1.2V 1.5V | 2.0V | 50mA 500mA | 7pF | | | | 10dB | 500mA | R1J | D25 |
| SSTA13 | MMSTA13 | (CES) 30V | | 10V | 100nA | 30V | 5K 10mA 5V 10K 100mA 5V | 1.5V | | 100mA | 10pF | 125MHz | 10mA | | | 500mA | R1M | D25 |
| SSTA14 | MMSTA14 | (CES) 30V | | 10V | 100nA | 30V | 10K 10mA 5V 20K 100mA 5V | 1.5V | | 100mA | 10pF | 125MHz | 10mA | | | 500mA | R1N | D25 |
| SSTA28 | MMSTA28 | (CES) 80V | | 12V | 100nA | 60V | 10K 10mA 5V 10K 100mA 5V | 1.5V | | 100mA | 8pF | 125MHz | 10mA | | | 500mA | RAT | D69 |
| SSTA29 | — | (CES) 100V | | 12V | 100nA | 80V | 10K 10mA 5V 10K 100mA 5V | 1.2V | | 10mA | 8pF | 125MHz | 10mA | | | 500mA | RAF | D69 |

■ RF/UHF/VHF amplifiers

| Part No. Package | | BV _{CBO} Min. | BV _{CEO} Min. | BV _{EBO} Min. | I _{CBO} Max. | I _{CBO} @ V _{CE} Max. | h _{FE} Min. Max. | @ I _C & V _{CE} | V _{CE(sat)} Max. | & V _{BE(sat)} Max. | @ I _C | C _{ob} Max. | f _T Min. | @ I _C | NF | I _C Max. | Marking | DIE NO. |
|---------------------|----------|---------------------------|---------------------------|---------------------------|--------------------------|--|------------------------------|------------------------------------|------------------------------|--------------------------------|------------------|-------------------------|------------------------|------------------|-----|------------------------|---------|------------|
| SST | SMT | | | | | | | | | | | | | | | | | |
| SST1139 | MMST1139 | 30V | 25V | 3V | 100nA | 25V | 60 | 4mA 10V | 0.5V | | 4mA | 1pF | 850MHz | 4mA | | 30mA | R39 | C104 |
| SST5424 | MMST5424 | 30V | 20V | 3V | 100nA | 18V (CES) | 60 150 | 2.5mA 4V | 0.4V | 1.0V | 10mA | 1.2pF | 600MHz | 2.5mA | | 50mA | R24 | C33 |
| SST8245 | MMST8245 | 30V | 20V | 3V | 100nA | 18V (CES) | 60 150 | 2.5mA 4V | 0.4V | 1.0V | 10mA | 1.2pF | 600MHz | 2.5mA | | 50mA | R3B | C33 |
| SST918 | — | 30V | 15V | 3V | 100nA | 15V | 20 | 3mA 1V | 0.4V | 1.0V | 10mA | 1.7pF | 600MHz | 4mA | 6dB | 50mA | R3B | C33 |
| SST918S | MMST918S | 30V | 15V | 3V | 100nA | 15V | 75 | 3mA 1V | 0.4V | 1.0V | 10mA | 1.7pF | 600MHz | 4mA | | 50mA | RVY | C33 |

PNP Transistors

Electrical characteristics of each part No. can be looked up from the data of DIE No.

■ General purpose small signal amplifiers

| Part No. Package | | BV _{CB0} Min. | BV _{CEO} Min. | BV _{EBO} Min. | I _{CB0} @V _{CB} Max. | h _{FE} Min. Max. | @I _c & V _{CE} | V _{CE(sat)} & V _{BE(sat)} Max. @ I _c | Cob Max. | f _T Min. @ I _c | t _{off} /NF Max. | I _c Max. | Marking | DIE NO. |
|---------------------|----------|---------------------------|---------------------------|---------------------------|---|------------------------------|--|--|-------------|---|------------------------------|------------------------|---------|------------|
| SST | SMT | | | | | | | | | | | | | |
| SST5086 | MMST5086 | 50V | 50V | 3V | 100nA 40V | 150 500 | 100 μA 5V 150 1.0mA 5V 150 10mA 5V | 0.3V 10mA | 6pF | 40MHz 0.5mA | NF 3dB | 200mA | R2P | A32 |
| SST5087 | MMST5087 | 50V | 50V | 3V | 100nA 40V | 250 800 | 100 μA 5V 250 1.0mA 5V 250 10mA 5V | 0.3V 10mA | 6pF | 40MHz 0.5mA | NF 2dB | 200mA | R2Q | A32 |
| SST5101 | MMST5101 | 60V | 40V | 6V | 100nA 55V | 200 400 | 10mA 5V | 0.15V 10mA | 8pF | 125MHz 2mA | | 200mA | 1T1 | A32 |
| SST6839 | MMST6839 | 50V | 40V | 5V | | 100 100 | 1mA 5V 100mA 5V | 0.5V 100mA | 3.5pF | 50MHz 2mA | | 200mA | RFQ | A32 |
| SST7157 | MMST7157 | 60V | 60V | 5V | 100nA 25V | 100 100 | 1mA 5V 100mA 5V | 0.25V 100mA | | | | 200mA | R2C | A32 |
| SST8598 | MMST8598 | 60V | 60V | 5V | 100nA 60V | 100 300 | 1mA 5V | 0.5V 100mA | 8pF | 150MHz 10mA | | 200mA | R2K | A32 |
| SSTA70 | MMSTA70 | 60V | 60V | 5V | 100nA 30V | 160 400 | 5mA 10V | 0.2V 100mA | 5pF | 125MHz 5mA | | 200mA | R2C | A32 |

■ General purpose amplifiers and switches

| Part No. Package | | BV _{CB0} Min. | BV _{CEO} Min. | BV _{EBO} Min. | I _{CB0} @V _{CB} Max. | h _{FE} Min. Max. | @I _c & V _{CE} | V _{CE(sat)} & V _{BE(sat)} Max. @ I _c | Cob Max. | f _T Min. @ I _c | t _{off} Max. | I _c Max. | Marking | DIE NO. |
|---------------------|-----------|---------------------------|---------------------------|---------------------------|---|------------------------------|--|--|-------------|---|--------------------------|------------------------|---------|------------|
| SST | SMT | | | | | | | | | | | | | |
| SST2907 | MMST2907 | 60V | 40V | 5V | 100nA 50V | 35 50 75 100 | 0.1mA 10V 1.0mA 10V 10mA 10V 150mA 10V 500mA 10V | 0.4V 1.3V 150mA 1.6V 2.6V 500mA | 8pF | 200MHz 50mA | 180ns | 600mA | R2B | A31 |
| SST2907A | MMST2907A | 60V | 60V | 5V | 100nA 50V | 75 100 100 100 | 0.1mA 10V 1.0mA 10V 10mA 10V 150mA 10V 500mA 10V | 0.4V 1.3V 150mA 1.6V 2.6V 500mA | 8pF | 200MHz 50mA | 180ns | 600mA | R2F | A31 |
| SST3906 | MMST3906 | 40V | 40V | 5V | 50nA 30V (CES) | 60 80 100 60 30 | 0.1mA 1V 1.0mA 1V 10mA 1V 50mA 1V 100mA 1V | 0.25V 0.85V 10mA 0.4V 0.95V 50mA | 4.5pF | 250MHz 10mA | 300ns | 200mA | R2A | A38 |
| SST4126 | MMST4126 | 25V | 25V | 4V | 50nA 20V | 120 60 | 360 2mA 1V 50mA 1V | 0.4V 0.95V 50mA | 4.5pF | 250MHz 10mA | | 200mA | RVZ | A38 |
| SST4403 | MMST4403 | 40V | 40V | 5V | 100nA 35V | 30 60 100 100 20 | 0.1mA 1V 1mA 1V 10mA 1V 150mA 2V 500mA 2V | 0.4V 0.95V 150mA 0.75V 1.3V 500mA | 8.5pF | 200MHz 20mA | 255ns | 600mA | R2T | A31 |
| SSTIS93 | — | 40V | 40V | 5V | 100nA 20V | 100 300 | 50mA 2V | 0.25V 50mA | | | | 800mA | R93 | A31 |

U.S. European Type Series

PNP Transistors

Electrical characteristics of each Part No. can be looked up from the data of DIE No.

■ Medium power amplifiers

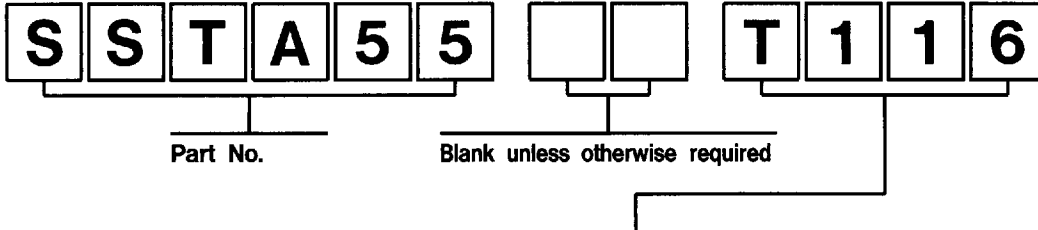
| Part No. Package | | V_{CB0} Min. | V_{CE0} Min. | V_{EB0} Min. | I_{CB0} Max. @ V_{CB} | h_{FE} @ I_C & V_{CE} Min. Max. | | | $V_{CE(sat)}$ Max. & $V_{BE(sat)}$ Max. @ I_C | C_{ob} Max. | f_T Min. @ I_C | t_{off} Max. | I_C Max. | Marking | DIE NO. | | |
|---------------------|---------|-------------------|-------------------|-------------------|------------------------------|---|------|----|---|------------------|-----------------------|-------------------|---------------|---------|------------|-----|-----|
| SST | SMT | | | | | | | | | | | | | | | | |
| SSTA55 | — | 60V | 60V | 4V | 100nA 60V | 100 | 10mA | 1V | 0.25V | 1.2V | 100mA | | 50MHz | 100mA | 500mA | R2H | B93 |
| SSTA56 | MMSTA56 | 80V | 80V | 4V | 100nA 80V | 100 | 10mA | 1V | 0.25V | 1.2V | 100mA | | 50MHz | 100mA | 500mA | R2G | B93 |

■ Darlington amplifiers

| Part No. Package | | V_{CB0} Min. | V_{CE0} Min. | V_{EB0} Min. | I_{CB0} Max. @ V_{CB} | h_{FE} @ I_C & V_{CE} Min. Max. | | | $V_{CE(sat)}$ Max. & $V_{BE(sat)}$ Max. @ I_C | C_{ob} Max. | f_T Min. @ I_C | t_{off}/NF | I_C Max. | Marking | DIE NO. | | |
|---------------------|---------|-------------------|-------------------|-------------------|------------------------------|---|------|----|---|------------------|-----------------------|--------------|---------------|---------|------------|-----|-----|
| SST | SMT | | | | | | | | | | | | | | | | |
| SSTA63 | MMSTA63 | 30V | 30V (CES) | 10V | 100nA 30V | 5K | 10mA | 5V | 1.5V | 100mA | 7pF | 125MHz | 10mA | 3dB | 300mA | R2U | B25 |
| SSTA64 | MMSTA64 | 30V | 30V (CES) | 10V | 100nA 30V | 10K | 10mA | 5V | 1.5V | 100mA | 7pF | 125MHz | 10mA | 3dB | 300mA | R2V | B25 |
| SSTA65 | — | 30V | (CES) 30V | 8V | 100nA 30V | 50K | 10mA | 5V | 1.5V | 100mA | | 100MHz | 10mA | 2dB | 300mA | R65 | B25 |

Ordering Information

Product designation consists of type No. and packaging specification code is needed for ordering information.



Packaging specifications code

| Package | Code | Packaging type | Packaging condition | Direction | Quantity/Taping (pcs) |
|---------|------|----------------|----------------------------|-----------------------------------|-----------------------|
| SST | T116 | Taping | Embossed smaller reel tape | 1 pin side on sprocket hole side | 3,000 |
| | T117 | | | 2 pins side on sprocket hole side | |
| | T216 | | Embossed larger reel tape | 1 pin side on sprocket hole side | |
| | - | | | 2 pins side on sprocket hole side | |
| SMT | T146 | Taping | Embossed smaller reel tape | 1 pin side on sprocket hole side | 3,000 |
| | T147 | | | 2 pins side on sprocket hole side | |
| | T246 | | Embossed larger reel tape | 1 pin side on sprocket hole side | |
| | T247 | | | 2 pins side on sprocket hole side | |

Packaging specifications

(Unit : mm)

SST · SMT

Reel

SMALLER REEL

LARGER REEL

Tape

| Package | Code | |
|---------|--------------|------|
| SST | Smaller reel | T116 |
| | Larger reel | T216 |
| SMT | Smaller reel | T146 |
| | Larger reel | T246 |

| Package | Size | | |
|---------|----------|----------|----------|
| | A | B | C |
| SST | 3.15±0.1 | 2.85±0.1 | 1.4±0.1 |
| SMT | 3.1±0.1 | 3.2±0.1 | 1.35±0.1 |

| Package | Code | |
|---------|--------------|------|
| SST | Smaller reel | T117 |
| | Larger reel | - |
| SMT | Smaller reel | T147 |
| | Larger reel | T247 |