

### Discrete MOSFET - Low Voltage Trench Gate 4.0V and 2.5V SOP-8 n-channel and p-channel MOSFETs

| Device<br>Number | Maximum Ratings, $T_c = 25^\circ\text{C}$ |              |                 | Electrical Characteristics |      |                     |                   | Package |      |
|------------------|-------------------------------------------|--------------|-----------------|----------------------------|------|---------------------|-------------------|---------|------|
|                  | $V_{DS}$<br>(V)                           | $I_D$<br>(A) | $V_{GS}$<br>(V) | $r_{DS(on)}$ (m $\Omega$ ) |      | $V_{GS(th)}$<br>(V) | $C_{iss}$<br>(pF) | Outline | Page |
|                  |                                           |              |                 | Typ.                       | Max. |                     |                   |         |      |
| FY10AAJ-03       | 30                                        | 10           | $\pm 20$        | 9                          | 13.5 | 1.5                 | 2850              | SOP-8   | 33   |
| FY7AAJ-03        | 30                                        | 7            | $\pm 20$        | 23                         | 30   | 1.5                 | 1000              | SOP-8   | 33   |
| FY3ABJ-03        | -30                                       | -3           | $\pm 20$        | 57                         | 70   | -2                  | 2100              | SOP-8   | 33   |
| FY8ABJ-03        | -30                                       | -8           | $\pm 20$        | 14                         | 20   | -2                  | 3650              | SOP-8   | 33   |
| FY5ACH-03A       | 30                                        | 5            | $\pm 10$        | 38                         | 50   | 1.5                 | —                 | SOP-8   | 33   |
| FY6ACH-02A       | 20                                        | 6            | $\pm 10$        | 25                         | 30   | 1                   | 900               | SOP-8   | 33   |

$r_{DS(on)}$  (m $\Omega$ ) - shows value of on-resistance at  $V_{GS} = 4V$

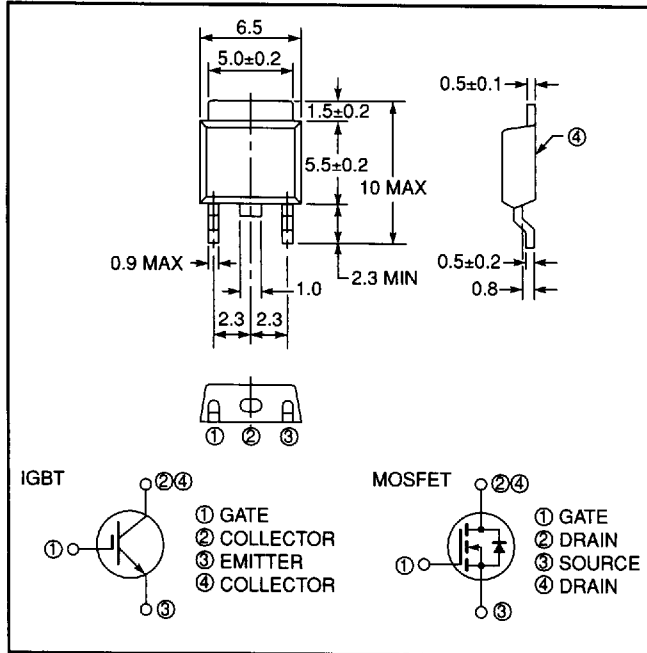
### Discrete MOSFET - Medium Voltage FS Series MOSFETs (200V)

| Device<br>Number | Maximum Ratings, $T_c = 25^\circ\text{C}$ |              |                     | Electrical Characteristics |      |                     |                   | Package  |      |
|------------------|-------------------------------------------|--------------|---------------------|----------------------------|------|---------------------|-------------------|----------|------|
|                  | $V_{DS}$<br>(V)                           | $I_D$<br>(A) | $V_{GS}$<br>(+/- V) | $r_{DS(on)}$ ( $\Omega$ )  |      | $V_{GS(th)}$<br>(V) | $C_{iss}$<br>(pF) | Outline  | Page |
|                  |                                           |              |                     | Typ.                       | Max. |                     |                   |          |      |
| FS10KM-4A        | 200                                       | 10           | $\pm 20$            | 0.4                        | 0.52 | 3                   | 650               | TO-220FN | 31   |
| FS10UM-4A        | 200                                       | 10           | $\pm 20$            | 0.4                        | 0.52 | 3                   | 650               | TO-220   | 31   |
| FS12KM-4A        | 200                                       | 12           | $\pm 20$            | 0.3                        | 0.4  | 3                   | 700               | TO-220FN | 31   |
| FS12UM-4A        | 200                                       | 12           | $\pm 20$            | 0.3                        | 0.4  | 3                   | 700               | TO-220   | 31   |
| FS16KM-4A        | 200                                       | 16           | $\pm 20$            | 0.2                        | 0.25 | 3                   | 1150              | TO-220FN | 31   |
| FS16UM-4A        | 200                                       | 16           | $\pm 20$            | 0.2                        | 0.25 | 3                   | 1150              | TO-220   | 31   |
| FS20KM-4A        | 200                                       | 20           | $\pm 20$            | 0.14                       | 0.18 | 3                   | 1650              | TO-220FN | 31   |
| FS20UM-4A        | 200                                       | 20           | $\pm 20$            | 0.14                       | 0.18 | 3                   | 1650              | TO-220   | 31   |
| FS20VS-4A        | 200                                       | 20           | $\pm 20$            | 0.14                       | 0.18 | 3                   | 1650              | TO-220S  | 31   |
| FS20SM-4A        | 200                                       | 20           | $\pm 20$            | 0.14                       | 0.18 | 3                   | 1650              | TO-3P    | 31   |

$r_{DS(on)}$  ( $\Omega$ ) - shows maximum value of on-resistance at  $V_{GS} = 10V$

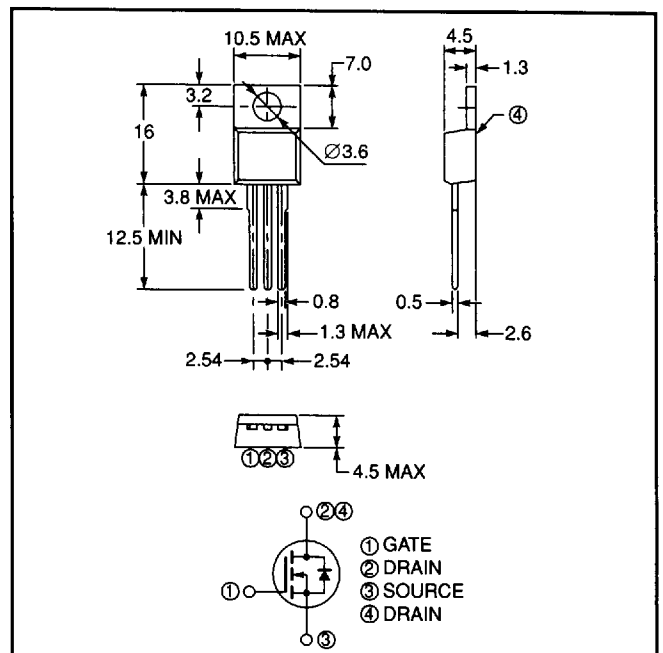
## Device Outline Drawings

### MP-3



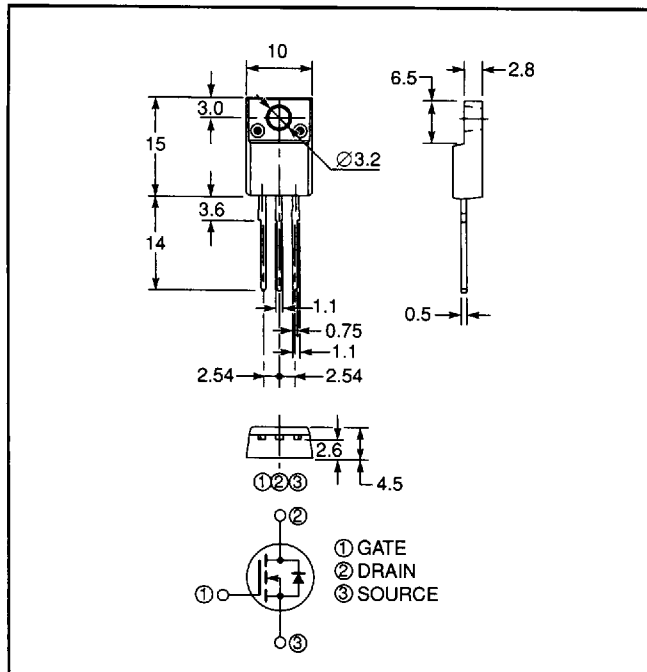
IGBT CT\*\*AS-8  
MOSFET FS\*\*AS-8

### TO-220



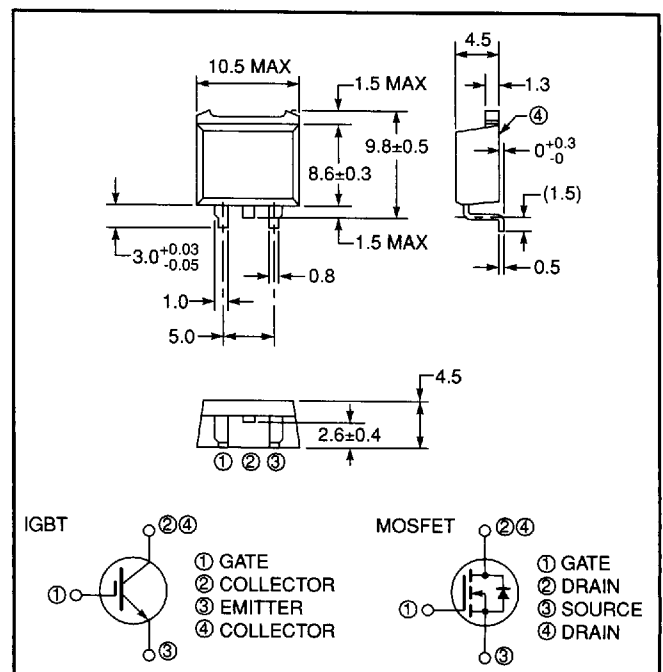
MOSFET FK\*\*UM-\*\*, FS\*\*UM-\*

### TO-220FN



MOSFET FK\*\*KM-\*, FS\*\*KM-\*

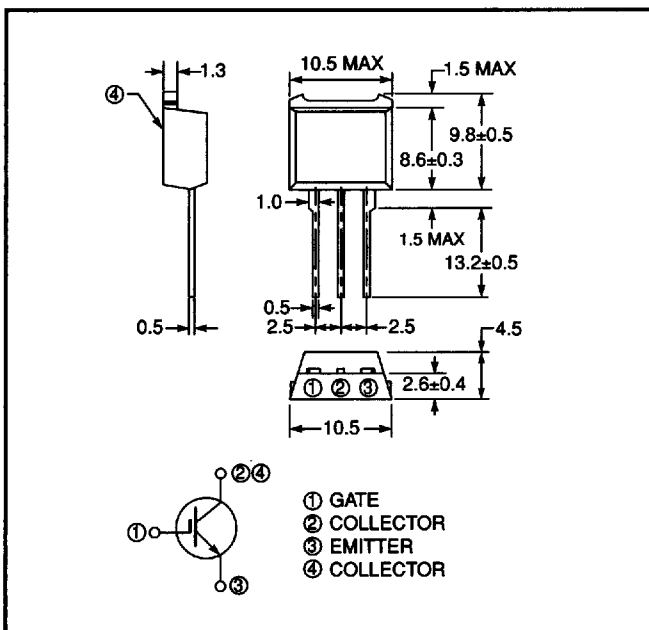
### TO-220S



IGBT CT\*\*VS-8  
MOSFET FK\*\*VS-\*, FS\*\*VS-\*

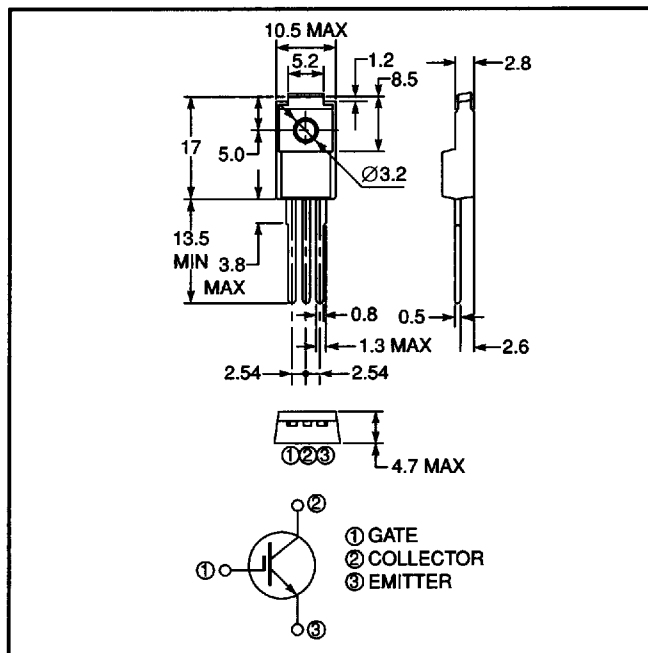
## Device Outline Drawings

### TO-220C



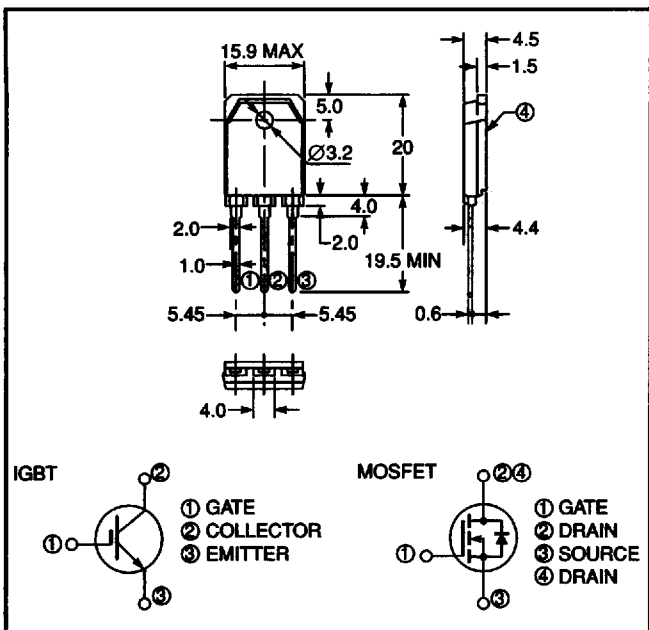
IGBT CT\*\*VM-8

### TO-220F



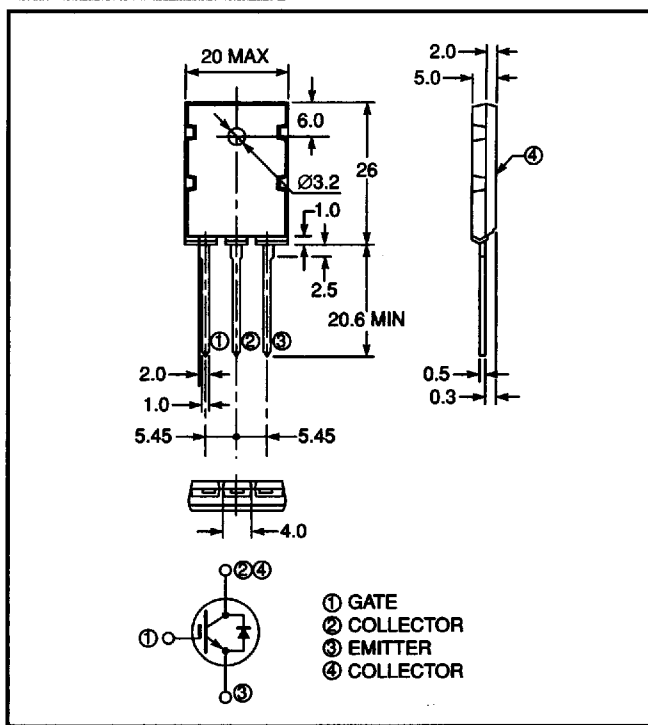
IGBT CT\*\*TM-\*\*

### TO-3P



IGBT CT\*\*SM-8  
MOSFET FK\*\*SM-\*, FS\*\*SM-\*

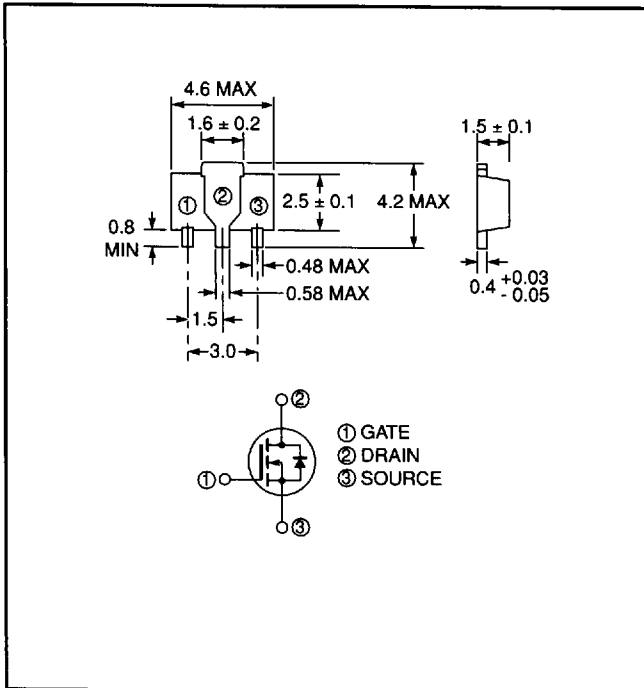
### TO-3PL



IGBT CT\*\*AM-\*

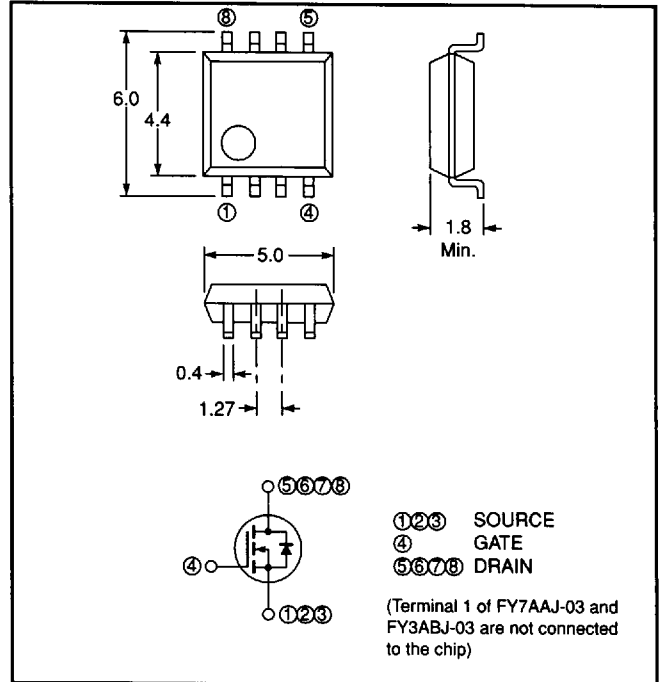
## Device Outline Drawings

### SOT-89



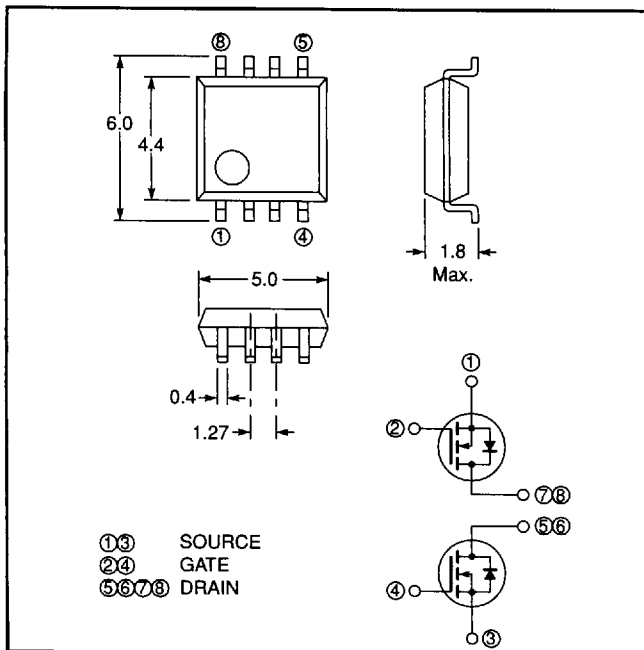
MOSFET FS\*\*, FX\*\*

### SOP-8 (Single)



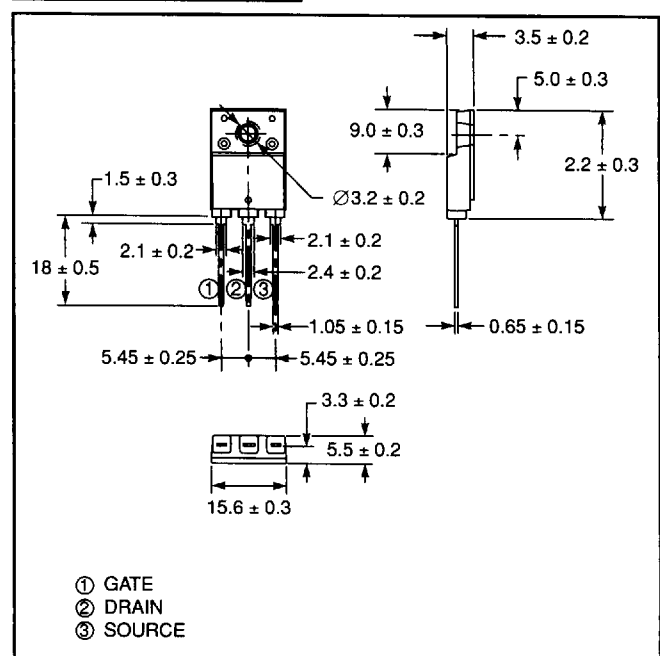
MOSFET FY\*\*

### SOP-8 (Dual)



MOSFET FY\*\*

### TO-3PF



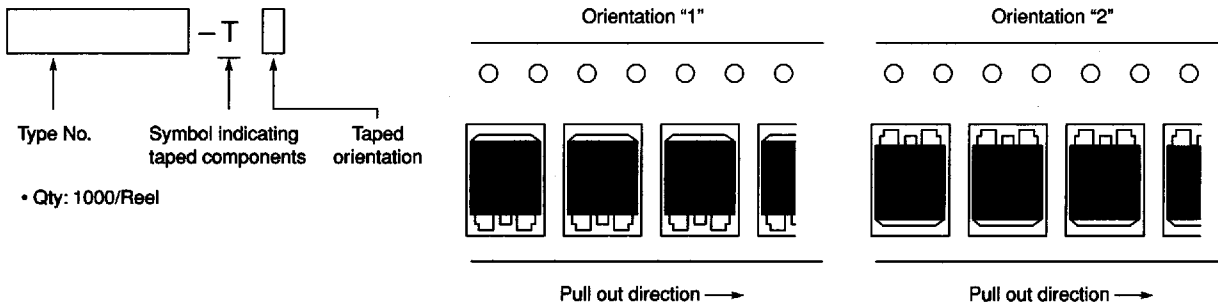
MOSFET FS\*\*RM-\*\*

### MOSFET Packing Quantities and Types

| Package  | Outline Code | Packing | Minimum Quantity per Package |
|----------|--------------|---------|------------------------------|
| TO-220   | UM           | Bag     | 100                          |
| TO-220FN | KM           | Tube    | 50                           |
| TO-220S  | VS           | Bag     | 100                          |
| TO-220S  | VS           | Reel    | 1000                         |
| TO-3P    | SM           | Bag     | 20                           |
| MP-3     | AS           | Bag     | 500                          |
| MP-3     | AS           | Reel    | 3000                         |
| SOP-8    | FY           | Reel    | 3000                         |

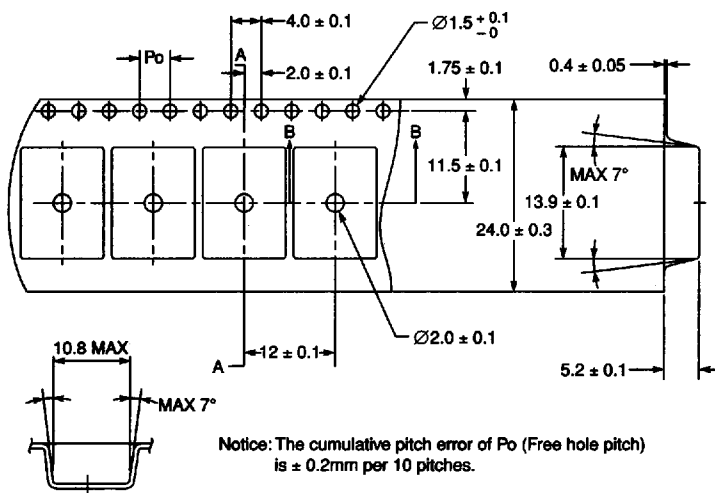
### TO-220S Taping

#### (a) Marking

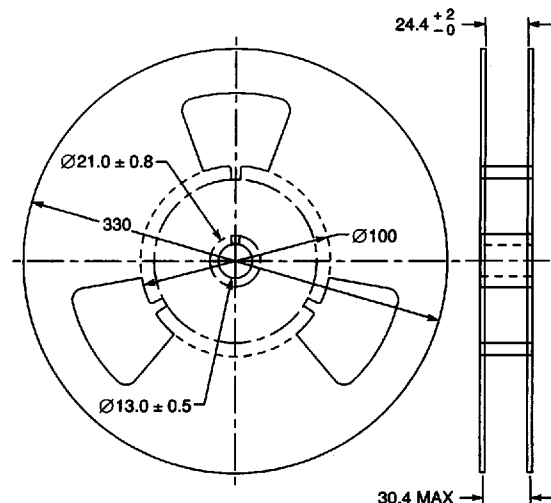


#### (b) Taping

##### • Tape Shape and Dimensions



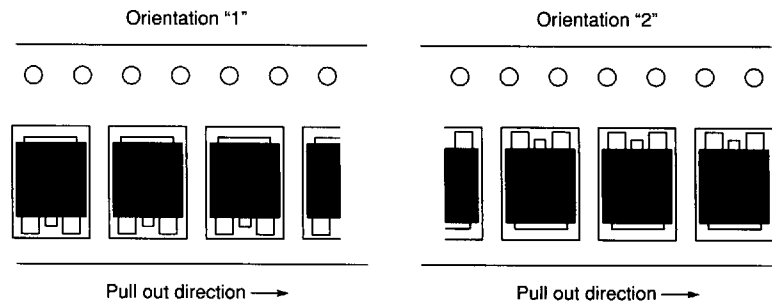
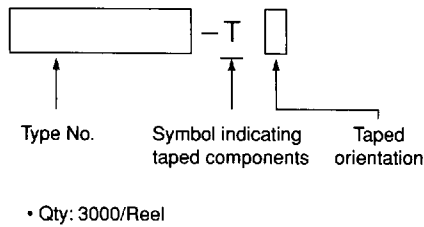
##### • Reel Shape and Dimensions



## Packaging Information

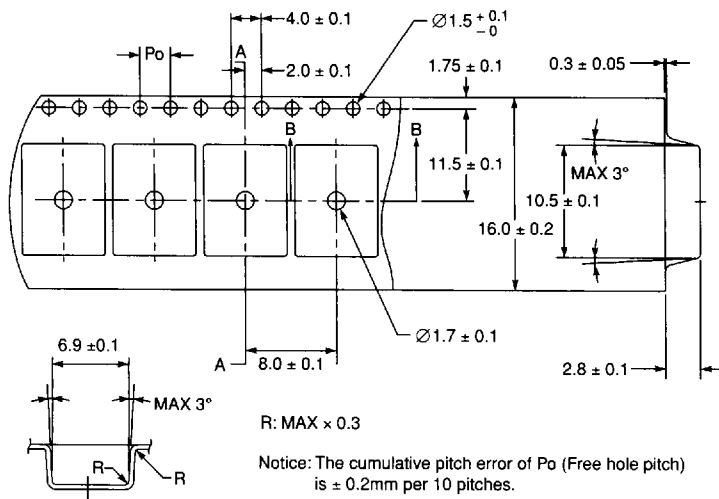
### MP-3 Taping

#### (a) Marking

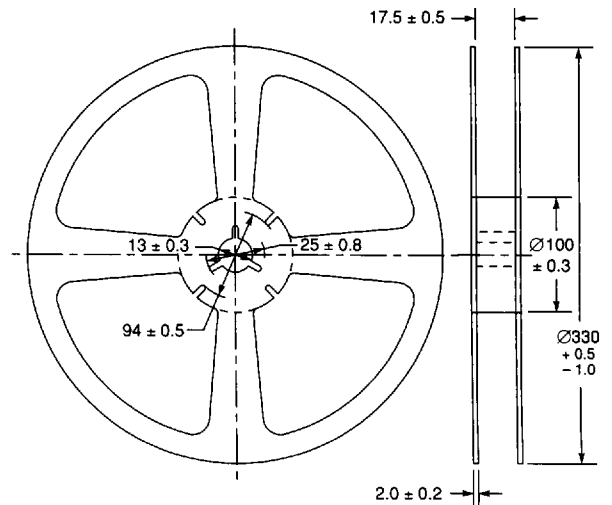


#### (b) Taping

##### • Tape Shape and Dimensions



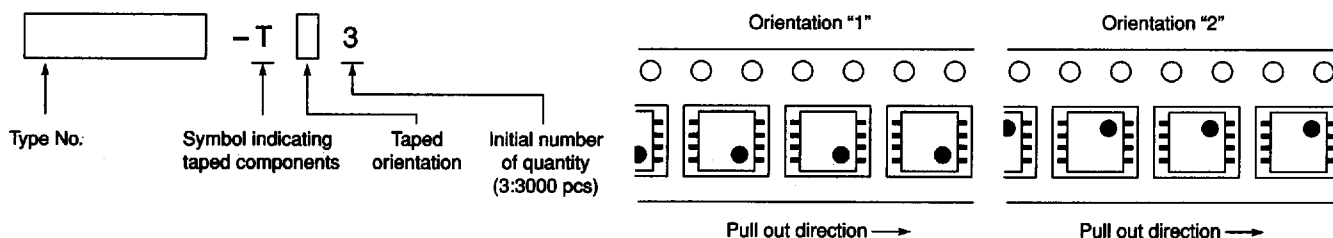
##### • Reel Shape and Dimensions



## Packaging Information

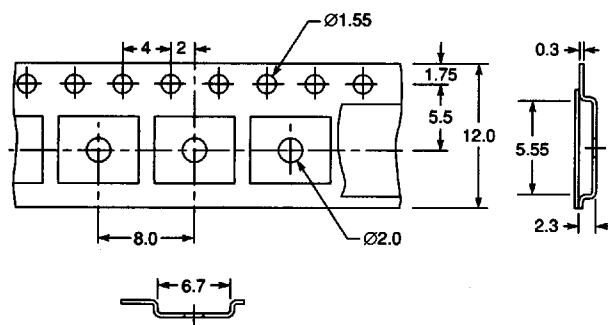
### SOP-8 Taping

#### (a) Marking

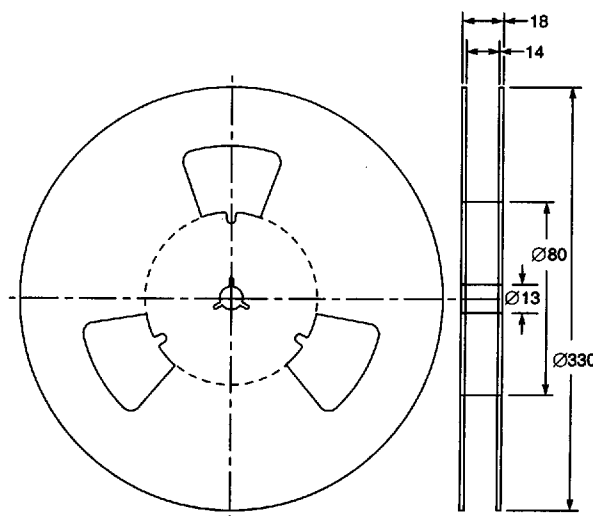


#### (b) Taping

##### • Tape Shape and Dimensions

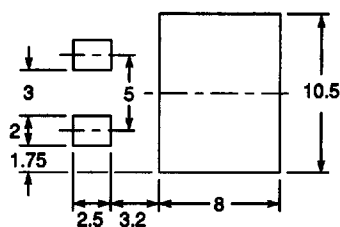


##### • Reel Shape and Dimensions

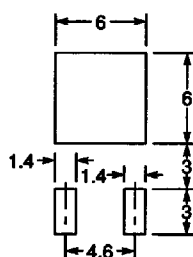


### Recommended Mounting Pad

#### TO-220S Package



#### MP-3 Package



#### SOP-8 Package

