

## TO-92 Plastic-Encapsulate Transistors

### 2N6718 TRANSISTOR (NPN)

#### FEATURES

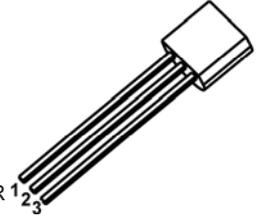
- General Purpose Switching Application

#### TO – 92

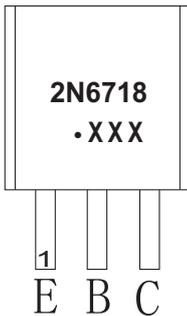
1. EMITTER

2. BASE

3. COLLECTOR



#### MARKING

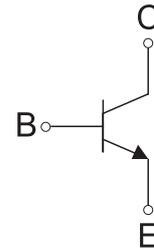


2N6718=Device code

Solid dot=Green molding compound device,  
if none,the normal device

XXX=Code

#### Equivalent Circuit



#### ORDERING INFORMATION

| Part Number | Package | Packing Method | Pack Quantity |
|-------------|---------|----------------|---------------|
| 2N6718      | TO-92   | Bulk           | 1000pcs/Bag   |
| 2N6718-TA   | TO-92   | Tape           | 2000pcs/Box   |

#### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

| Symbol           | Parameter                                   | Value    | Unit  |
|------------------|---|----------|-------|
| V <sub>CBO</sub> | Collector-Base Voltage                      | 100      | V     |
| V <sub>CEO</sub> | Collector-Emitter Voltage                   | 100      | V     |
| V <sub>EBO</sub> | Emitter-Base Voltage                        | 5        | V     |
| I <sub>C</sub>   | Collector Current                           | 1        | A     |
| P <sub>C</sub>   | Collector Power Dissipation                 | 625      | mW    |
| R <sub>θJA</sub> | Thermal Resistance From Junction To Ambient | 200      | °C /W |
| T <sub>j</sub>   | Junction Temperature                        | 150      | °C    |
| T <sub>stg</sub> | Storage Temperature                         | -55~+150 | °C    |

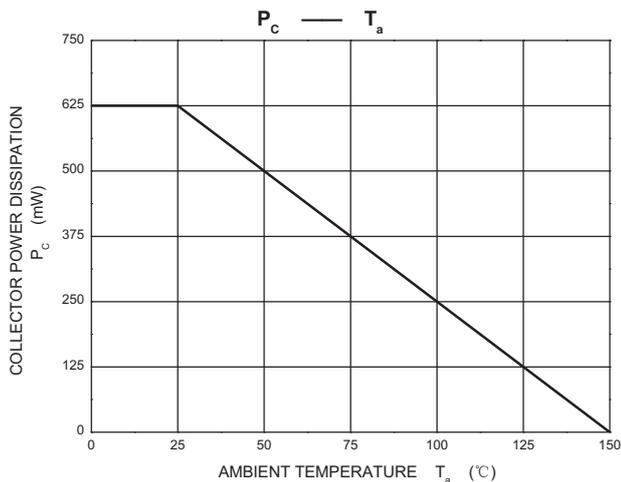
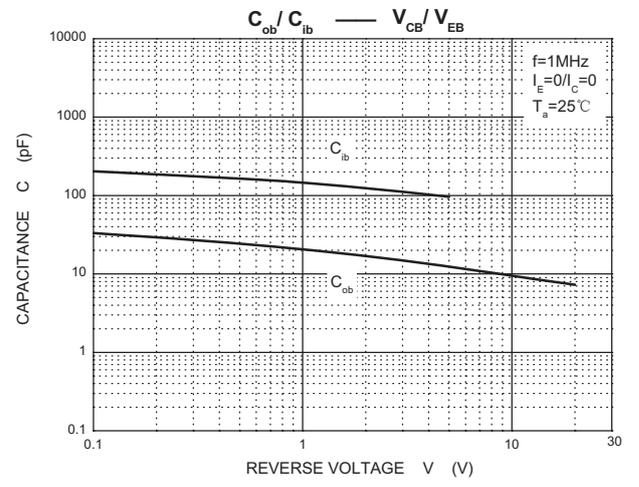
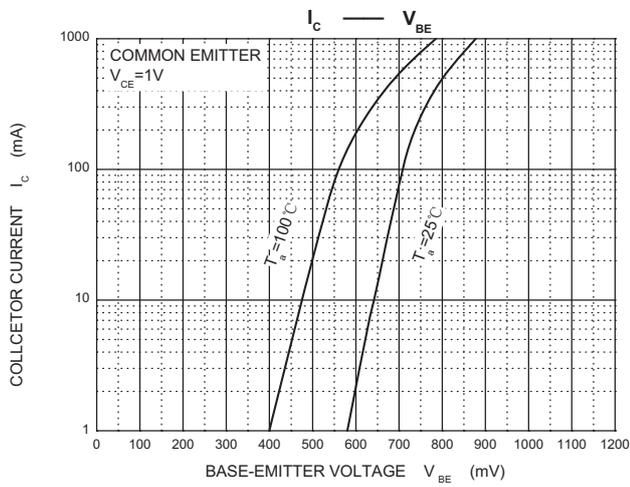
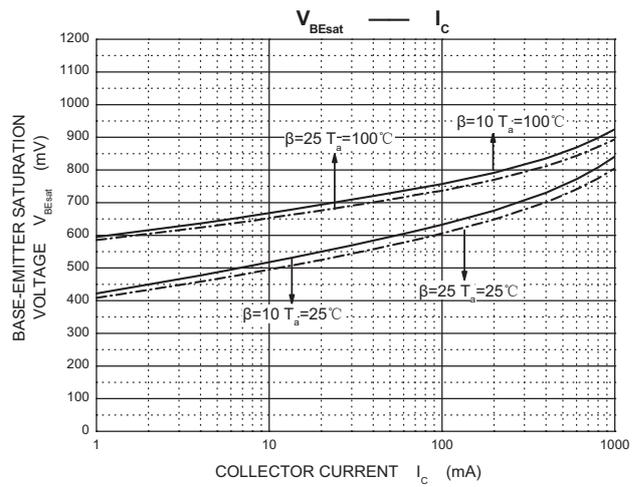
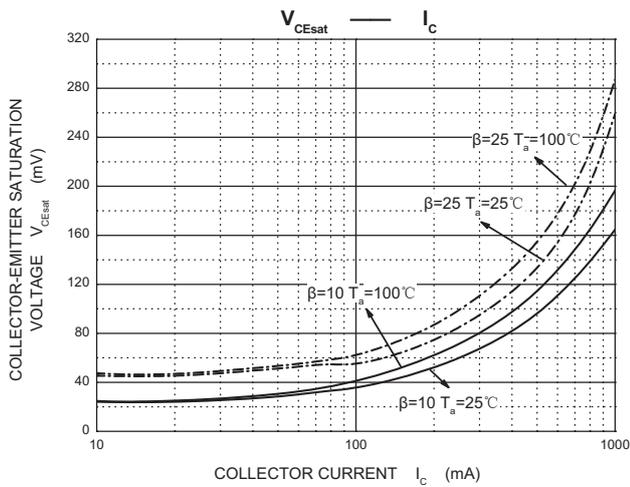
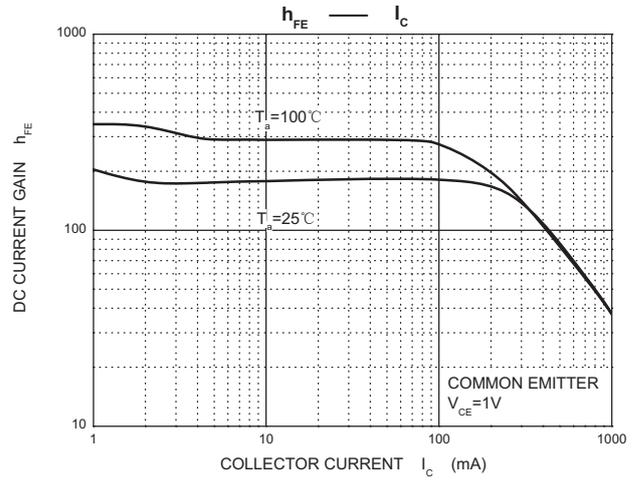
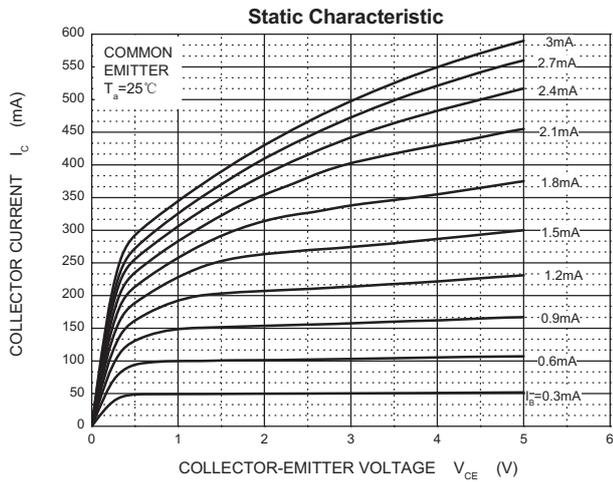
## ELECTRICAL CHARACTERISTICS

$T_a=25^\circ\text{C}$  unless otherwise specified

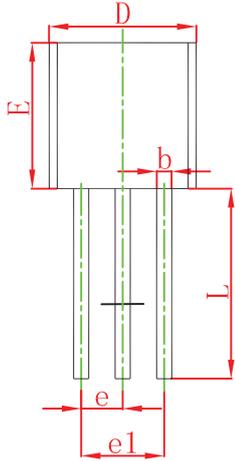
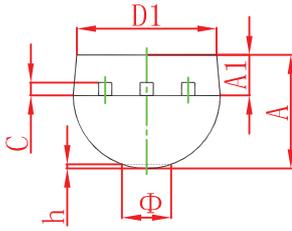
| Parameter                            | Symbol             | Test conditions                      | Min | Typ | Max  | Unit          |
|--------------------------------------|--------------------|--------------------------------------|-----|-----|------|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$      | $I_C=0.1\text{mA}, I_E=0$            | 100 |     |      | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$      | $I_C=1\text{mA}, I_B=0$              | 100 |     |      | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$      | $I_E=1\text{mA}, I_C=0$              | 5   |     |      | V             |
| Collector cut-off current            | $I_{CBO}$          | $V_{CB}=100\text{V}, I_E=0$          |     |     | 1    | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$          | $V_{EB}=5\text{V}, I_C=0$            |     |     | 1    | $\mu\text{A}$ |
| DC current gain                      | $h_{FE(1)}^*$      | $V_{CE}=1\text{V}, I_C=50\text{mA}$  | 80  |     |      |               |
|                                      | $h_{FE(2)}^*$      | $V_{CE}=1\text{V}, I_C=250\text{mA}$ | 50  |     | 250  |               |
|                                      | $h_{FE(3)}^*$      | $V_{CE}=1\text{V}, I_C=500\text{mA}$ | 20  |     |      |               |
| Collector-emitter saturation voltage | $V_{CE(sat)(1)}^*$ | $I_C=250\text{mA}, I_B=10\text{mA}$  |     |     | 0.5  | V             |
|                                      | $V_{CE(sat)(2)}^*$ | $I_C=250\text{mA}, I_B=25\text{mA}$  |     |     | 0.35 | V             |
| Base-emitter voltage                 | $V_{BE}^*$         | $V_{CE}=1\text{V}, I_C=250\text{mA}$ |     |     | 1.2  | V             |
| Collector output capacitance         | $C_{ob}$           | $V_{CB}=10\text{V}, f=1\text{MHz}$   |     |     | 30   | pF            |
| Transition frequency                 | $f_T$              | $V_{CE}=10\text{V}, I_C=50\text{mA}$ | 50  |     |      | MHz           |

\*Pulse test: pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2.0\%$ .

# Typical Characteristics

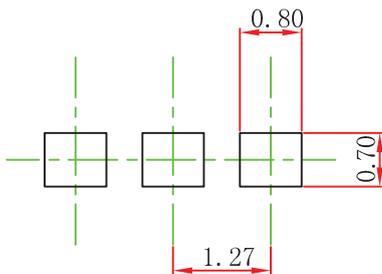


## TO-92 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min                       | Max    | Min                  | Max   |
| A      | 3.300                     | 3.700  | 0.130                | 0.146 |
| A1     | 1.100                     | 1.400  | 0.043                | 0.055 |
| b      | 0.380                     | 0.550  | 0.015                | 0.022 |
| c      | 0.360                     | 0.510  | 0.014                | 0.020 |
| D      | 4.300                     | 4.700  | 0.169                | 0.185 |
| D1     | 3.430                     |        | 0.135                |       |
| E      | 4.300                     | 4.700  | 0.169                | 0.185 |
| e      | 1.270 TYP                 |        | 0.050 TYP            |       |
| e1     | 2.440                     | 2.640  | 0.096                | 0.104 |
| L      | 14.100                    | 14.500 | 0.555                | 0.571 |
| Φ      |                           | 1.600  |                      | 0.063 |
| h      | 0.000                     | 0.380  | 0.000                | 0.015 |

## TO-92 Suggested Pad Layout



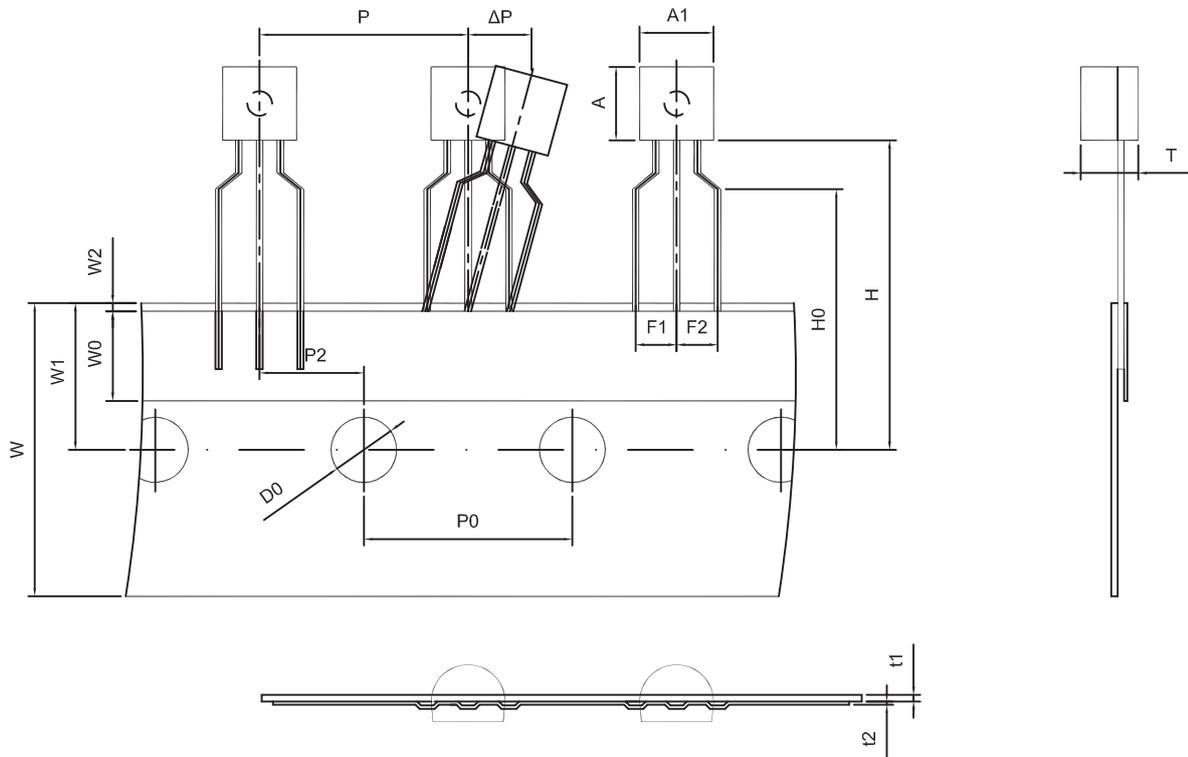
### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

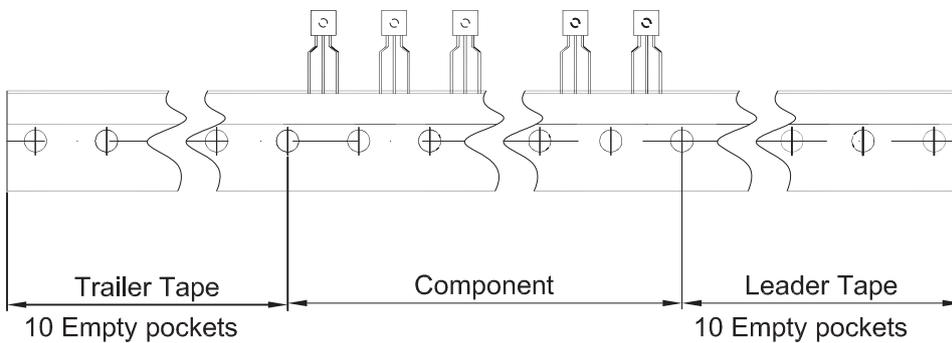
### NOTICE

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TO-92 PACKAGE TAPEING DIMENSION



| Dimiensions are in millimeter |     |          |      |      |      |     |     |      |
|-------------------------------|-----|----------|------|------|------|-----|-----|------|
| A1                            | A   | T        | P    | P0   | P2   | F1  | F2  | W    |
| 4.5                           | 4.5 | 3.5      | 12.7 | 12.7 | 6.35 | 2.5 | 2.5 | 18.0 |
| W0                            | W1  | W2       | H    | H0   | D0   | t1  | t2  | ΔP   |
| 6.0                           | 9.0 | 1.0 MAX. | 19.0 | 16.0 | 4.0  | 0.4 | 0.2 | 0    |



| Package | Box      | Box Size(mm) | Carton     | Carton Size(mm) |
|---------|----------|--------------|------------|-----------------|
| TO-92   | 2000 pcs | 333×162×43   | 20,000 pcs | 350×340×250     |