

TO-92 Plastic-Encapsulate Transistors

BF421
BF423

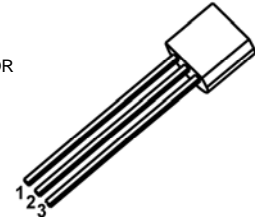
TRANSISTOR (PNP)

FEATURES

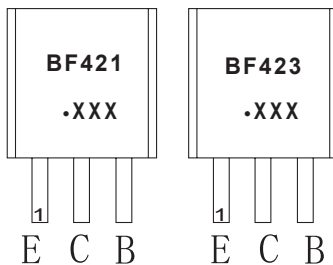
- Low Feedback Capacitance.
- PNP Transistors in a TO-92 Plastic Package.
NPN Complements: BF420 and BF422
- Class-B Video Output Stages in Colour Television and Professional Monitor Equipment.

TO-92

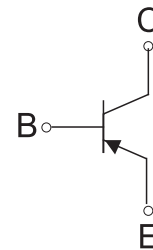
1. EMITTER
2. COLLECTOR
3. BASE



MARKING



Equivalent Circuit



BF421, BF423=Device code

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

XXX=Code

ORDERING INFORMATION

| Part Number | Package | Packing Method | Pack Quantity |
|-------------|---------|----------------|---------------|
| BF421 | TO-92 | Bulk | 1000pcs/Bag |
| BF421-TA | TO-92 | Tape | 2000pcs/Box |
| BF423 | TO-92 | Bulk | 1000pcs/Bag |
| BF423-TA | TO-92 | Tape | 2000pcs/Box |

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

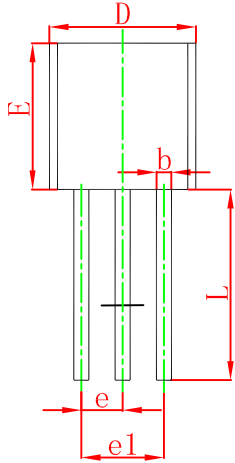
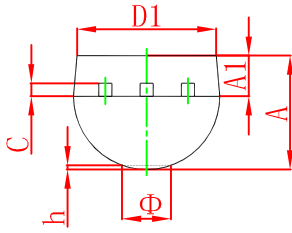
| Symbol | Parameter | BF421 | BF423 | Unit |
|-----------------------------------|--|------------|-------|-------|
| V _{CB0} | Collector-Base Voltage | -300 | -250 | V |
| V _{CE0} | Collector-Emitter Voltage | -300 | -250 | V |
| V _{EB0} | Emitter-Base Voltage | -5 | | V |
| I _C | Collector Current -Continuous | -100 | | mA |
| P _C | Collector Power Dissipation | 0.83 | | W |
| R _{thja} | Thermal resistance from junction to ambient | 151 | | °C /W |
| T _J , T _{stg} | Operation Junction and Storage Temperature Range | -55 ~ +150 | | °C |

ELECTRICAL CHARACTERISTICS

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

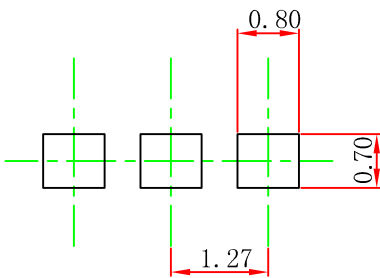
| Parameter | Symbol | Test conditions | Min | Max | Unit |
|--------------------------------------|---------------------------------|--|--------------|---------------|---------------|
| Collector-base breakdown voltage | BF421 BF423 $V_{(BR)CBO}$ | $I_C=-100\mu\text{A}, I_E=0$ | -300 -250 | | V |
| Collector-emitter breakdown voltage | BF421 BF423 $V_{(BR)CEO}$ | $I_C=-1\text{mA}, I_B=0$ | -300 -250 | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=-100\mu\text{A}, I_C=0$ | -5 | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=-200\text{V}, I_E=0$ | | -0.01 | μA |
| Emitter cut-off current | BF421 BF423 I_{EBO} | $V_{EB}=-5\text{V}, I_C=0$ | | -0.1 -0.05 | μA |
| DC current gain | h_{FE} | $V_{CE}=-20\text{V}, I_C=-25\text{mA}$ | 50 | | |
| Collector-emitter saturation voltage | BF421 BF423 $V_{CE(sat)}$ | $I_C=-20\text{mA}, I_B=-2\text{mA}$ $I_C=-30\text{mA}, I_B=-5\text{mA}$ | | -0.6 | V |
| Transition frequency | f_T | $V_{CE}=-10\text{V}, I_C=-10\text{mA}$ $f=100\text{MHz}$ | 60 | | MHz |
| Feedback capacitance | C_{re} | $V_{CE}=-30\text{V}, I_C=0, f=1\text{MHz}$ | | 1.6 | pF |

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



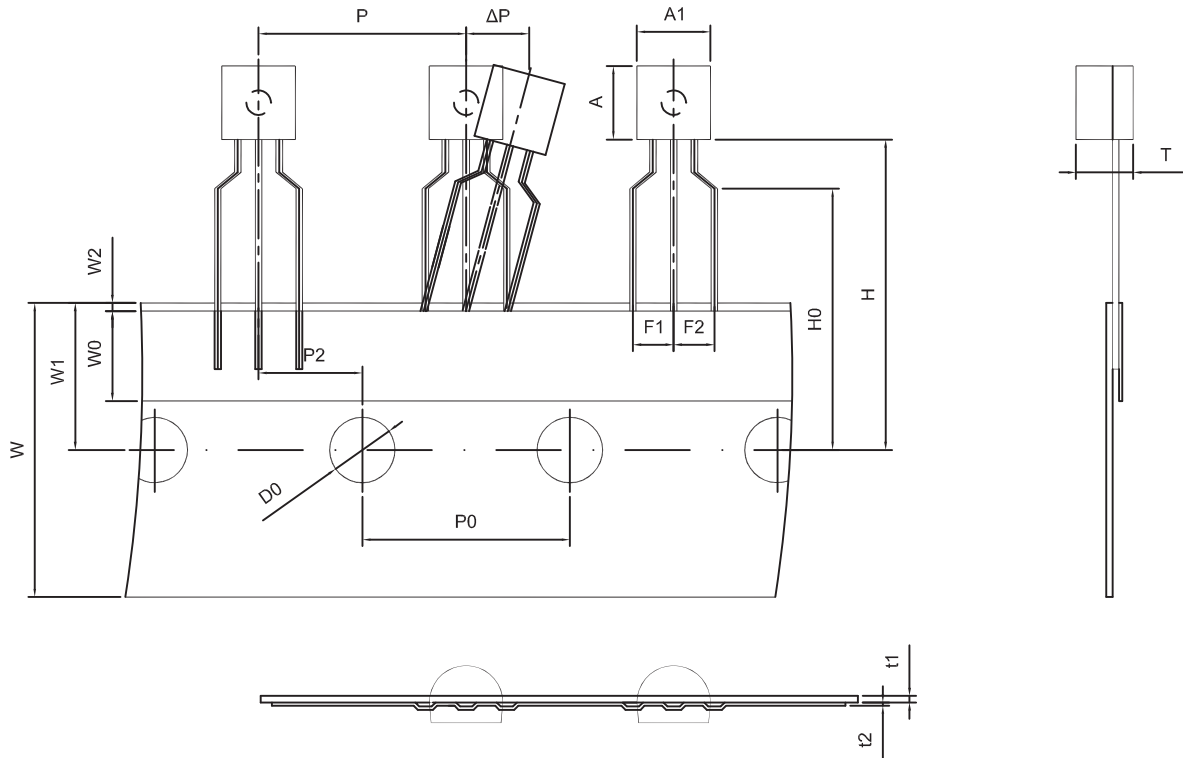
Note:

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

NOTICE

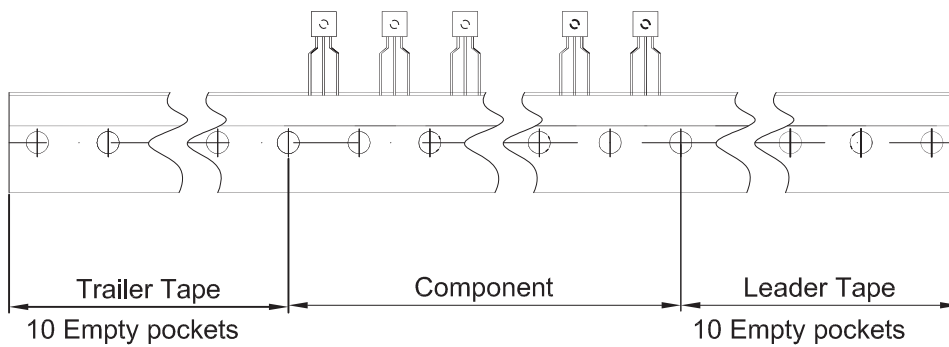
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TO-92 PACKAGE TAPING DIMENSION



Dimensions 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 |