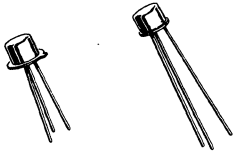


2N718 (SILICON)

2N1420



NPN silicon annular Star transistors for medium-current switching and amplifier applications.

2N718 **2N1420**
CASE 22 **CASE 31**
 (TO-18) (TO-5)

Collector connected to case

MAXIMUM RATINGS

| Rating | Symbol | Value | | Unit |
|--|-----------|----------------|----------------|----------------|
| Collector-Base Voltage | V_{CB} | 60 | | Vdc |
| Collector-Emitter Voltage | V_{CER} | 40 30 | | Vdc |
| | | 2N718 | 2N1420 | |
| Emitter-Base Voltage | V_{EB} | 5.0 | | Vdc |
| | | 2N1420 TO-5 | 2N718 TO-18 | |
| Total Device Dissipation at 25°C Case Temperature Derating Factor Above 25°C | P_D | 3.0 20 | 1.5 10 | Watts mW/°C |
| Total Device Dissipation at 25°C Ambient Temperatures Derating Factor Above 25°C | P_D | 0.6 4.0 | 0.4 2.66 | Watts mW/°C |
| Junction Temperature | T_J | + 175 | | °C |
| Storage Temperature range | T_{stg} | -65 to + 200 | | °C |

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|--|---------------|----------|-----------|------------|-----------------|
| Collector Cutoff Current ($V_{CB} = 30$ Vdc, $I_E = 0$) ($V_{CB} = 30$ Vdc, $I_E = 0$, $T_A = 150^\circ\text{C}$) | I_{CBO} | — — | .001 — | 1.0 100 | μAdc |
| Collector-Base Breakdown Voltage ($I_C = 100$ μAdc , $I_E = 0$) | BV_{CBO} | 60 | — | — | Vdc |
| Collector-Emitter Breakdown Voltage ($I_C = 100$ mAdc, pulsed; $R_B \leq 10$ Ohms) | BV_{CER} | 40 30 | — — | — — | Vdc |
| | | 2N718 | | | |
| | | 2N1420 | | | |
| Collector-Emitter Saturation Voltage ⁽¹⁾ ($I_C = 150$ mAdc, $I_B = 15$ mAdc) | $V_{CE(sat)}$ | — | 0.3 | 1.5 | Vdc |
| Base-Emitter Saturation Voltage ⁽¹⁾ ($I_C = 150$ mAdc, $I_B = 15$ mAdc) | $V_{BE(sat)}$ | — | — | 1.3 | Vdc |

⁽¹⁾ Pulse Test: $PW \leq 300$ μs , Duty Cycle $\leq 2\%$

2N718, 2N1420 (continued)**ELECTRICAL CHARACTERISTICS (continued)**

| Characteristic | Symbol | Min | Typ | Max | Unit | |
|---|--|--------|-----|-----|------|--|
| DC Forward Current Transfer Ratio ⁽¹⁾ ($I_C = 1 \text{ mA dc}$, $V_{CE} = 10 \text{ V dc}$) | h_{FE} | 2N718 | — | 20 | — | |
| | | 2N1420 | — | 35 | — | |
| | ($I_C = 150 \text{ mA dc}$, $V_{CE} = 10 \text{ V dc}$) | 2N718 | 40 | — | 120 | |
| | | 2N1420 | 100 | — | 300 | |
| | ($I_C = 500 \text{ mA dc}$, $V_{CE} = 10 \text{ V dc}$) | 2N718 | — | 20 | — | |
| | | 2N1420 | — | 35 | — | |
| Small Signal Forward Current Transfer Ratio ($I_C = 50 \text{ mA dc}$, $V_{CE} = 10 \text{ V dc}$, $f = 20 \text{ MHz}$) | h_{fe} | 2.5 | 15 | — | — | |
| Output Capacitance ($V_{CB} = 10 \text{ V dc}$, $I_E = 0$) | C_{ob} | — | 5.0 | 35 | pF | |

⁽¹⁾ Pulse Test: $PW \leq 300 \mu s$, Duty Cycle $\leq 2\%$