

NPN SILICON DUAL TRANSISTOR

Qualified per MIL-PRF-19500/495

Devices

2N5793

2N5794
2N5794U

Qualified Level

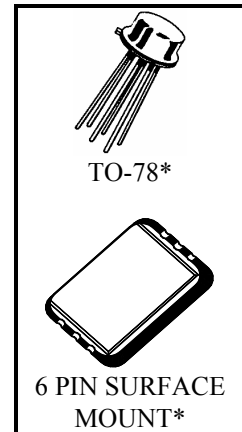
JAN
JANTX
JANTXV

MAXIMUM RATINGS

| Ratings | Symbol | Value | | Units |
|---|-------------------|----------------------------|-----------------------------|--------------------|
| Collector-Emitter Voltage | V_{CEO} | 40 | | Vdc |
| Collector-Base Voltage | V_{CBO} | 75 | | Vdc |
| Emitter-Base Voltage | V_{EBO} | 6.0 | | Vdc |
| Collector Current | I_C | 600 | | mAdc |
| | | One Section ⁽¹⁾ | Total Device ⁽²⁾ | |
| Total Power Dissipation @ $T_A = +25^{\circ}\text{C}$ | P_T | 0.5 | 0.6 | W |
| Operating & Storage Junction Temperature Range | T_{op}, T_{stg} | -65 to +200 | | $^{\circ}\text{C}$ |

1) Derate linearly 2.86 mW/ $^{\circ}\text{C}$ for $T_A > +25^{\circ}\text{C}$

2) Derate linearly 3.43 mW/ $^{\circ}\text{C}$ for $T_A > +25^{\circ}\text{C}$



*See MILPRF19500/495 for package outline

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

| Characteristics | Symbol | Min. | Max. | Unit |
|-----------------|--------|------|------|------|
|-----------------|--------|------|------|------|

OFF CHARACTERISTICS

| | | | | |
|---|---------------|----|----------|-------------------------------------|
| Collector-Emitter Breakdown Current $I_C = 10 \text{ mAdc}$ | $V_{(BR)CEO}$ | 40 | | Vdc |
| Collector-Base Cutoff Current $V_{CB} = 75 \text{ Vdc}$ $V_{CB} = 50 \text{ Vdc}$ | I_{CBO} | | 10 10 | μAdc ηAdc |
| Emitter-Base Cutoff Current $V_{EB} = 6.0 \text{ Vdc}$ $V_{EB} = 4.0 \text{ Vdc}$ | I_{EBO} | | 10 10 | μAdc ηAdc |

2N5793, 2N5794 JAN SERIES

ELECTRICAL CHARACTERISTICS (con't)

| Characteristics | Symbol | Min. | Max. | Unit | |
|--|---|--|---|------------------------------------|--|
| ON CHARACTERISTICS (3) | | | | | |
| Forward-Current Transfer Ratio $I_C = 100 \mu\text{A dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 1.0 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 10 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 150 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 300 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 150 \text{ mA dc}, V_{CE} = 1.0 \text{ V dc}$ $I_C = 100 \mu\text{A dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 1.0 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 10 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 150 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 300 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 150 \text{ mA dc}, V_{CE} = 1.0 \text{ V dc}$ | 2N5793 2N5794 2N5794U | h_{FE} h_{FE} | 20 25 35 40 25 20 35 50 75 100 40 50 | 120 300 | |
| Collector-Emitter Saturation Voltage $I_C = 150 \text{ mA dc}, I_B = 15 \text{ mA dc}$ $I_C = 300 \text{ mA dc}, I_B = 30 \text{ mA dc}$ | $V_{CE(sat)}$ | | 0.3 0.9 | Vdc | |
| Base-Emitter Saturation Voltage $I_C = 150 \text{ mA dc}, I_B = 15 \text{ mA dc}$ $I_C = 300 \text{ mA dc}, I_B = 30 \text{ mA dc}$ | $V_{BE(sat)}$ | 0.6 | 1.2 1.8 | Vdc | |

DYNAMIC CHARACTERISTICS

| | | | | |
|--|------------|-----|-----|----|
| Forward Current Transfer Ratio, Magnitude $I_C = 20 \text{ mA dc}, V_{CE} = 20 \text{ V dc}, f = 100 \text{ MHz}$ | $ h_{fe} $ | 2.0 | 10 | |
| Output Capacitance $V_{CB} = 10 \text{ V dc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$ | C_{obo} | | 8.0 | pF |
| Input Capacitance $V_{EB} = 0.5 \text{ V dc}, I_C = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$ | C_{ibo} | | 33 | pF |

SWITCHING CHARACTERISTICS

| | | | | |
|--|-----------|--|-----|----|
| Turn-On Time $V_{CC} = 30 \text{ V dc}; I_C = 150 \text{ mA dc}; I_{B1} = 15 \text{ mA dc}, V_{BE(off)} = 0.5 \text{ V dc}$ | t_{on} | | 45 | ns |
| Turn-Off Time $V_{CC} = 30 \text{ V dc}; I_C = 150 \text{ mA dc}; I_{B1} = I_{B2} = 15 \text{ mA dc}$ | t_{off} | | 310 | ns |

(3) Pulse Test: Pulse Width = 300µs, Duty Cycle ≤ 2.0%.