

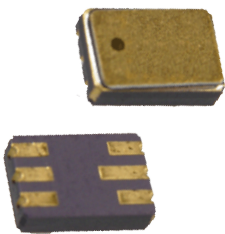
Surface Mount Dual NPN Transistor

2N5794U (TX, TXV)



Features:

- Ceramic 6 pin surface mount package
- Small package to minimize circuit board area
- Hermetically sealed
- Electrical performance similar to dual 2N2222
- Processed per MIL-PRF-19500/495



Description:

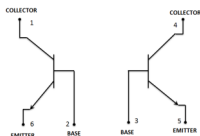
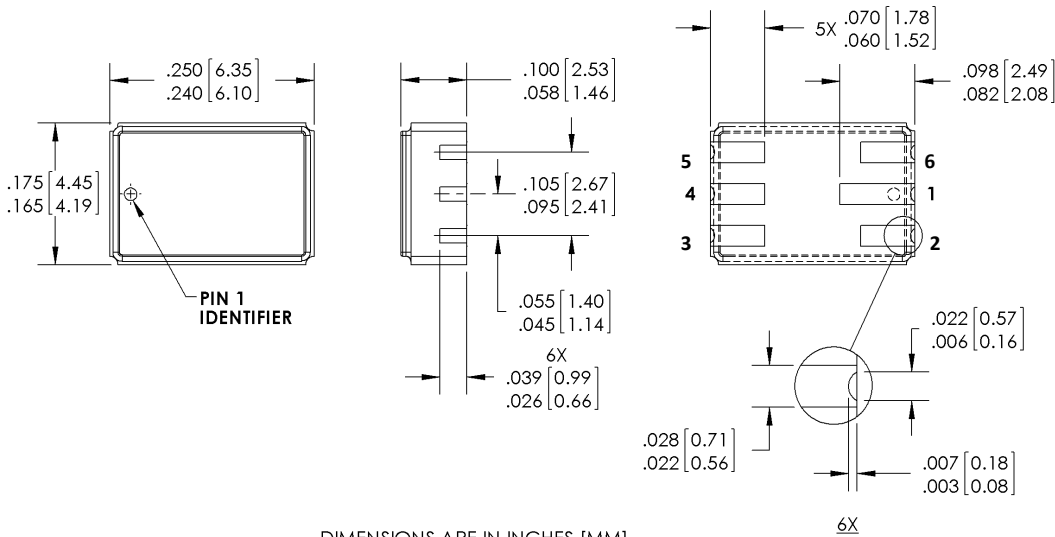
The 2N5794U (TX, TXV) are hermetically sealed, ceramic surface mount devices, consisting of two individual silicon NPN transistors. The six pin ceramic package is ideal for designs where board space and device weight are important design considerations.

Typical screening and lot acceptance tests are per MIL-PRF-19500/495. The burn-in condition is $V_{CB} = 30\text{ V}$, $P_D = 300\text{ mW}$ each transistor, $T_A = 25^\circ\text{C}$. Refer to MIL-PRF-19500/495 for complete requirements.

When ordering parts without processing, do not use the TX or TXV suffix.

Applications:

- General switching
- Amplification
- Signal processing
- Radio transmission
- Logic gates



| Pin # | LED | Pin # | Transistor |
|-------|-----------|-------|------------|
| 3 | Base | 2 | Base |
| 4 | Collector | 1 | Collector |
| 5 | Emitter | 6 | Emitter |

General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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Electrical Specifications

Absolute Maximum Ratings ($T_A = 25^\circ \text{C}$ unless otherwise noted)

| | |
|---|---|
| Collector-Emitter Voltage | 45 V |
| Collector-Base Voltage | 75 V |
| Emitter-Base Voltage | 6 V |
| Collector Current-Continuous | 600 mA |
| Operating Junction Temperature (T_J) | -65°C to $+200^\circ \text{C}$ |
| Storage Junction Temperature (T_{stg}) | -65°C to $+200^\circ \text{C}$ |
| Power Dissipation @ $T_A = 25^\circ \text{C}$ | 0.5 W |
| Power Dissipation @ $T_c = 25^\circ \text{C}$ | 0.6 W ⁽¹⁾ |
| Soldering Temperature (vapor phase reflow for 30 seconds) | 215°C |
| Soldering Temperature (heated collet for 5 seconds) | 260°C |

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

| SYMBOL | PARAMETER | MIN | MAX | UNITS | TEST CONDITIONS |
|----------------------------|-------------------------------------|-----|-----|---------------|---|
| OFF CHARACTERISTICS | | | | | |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | 40 | - | V | $I_C = 10 \text{ mA}^{(1)}$ |
| I_{CBO1} | Collector-Base Cutoff Current | | 10 | μA | $V_{CB} = 75 \text{ V}$ |
| I_{CBO2} | Collector-Base Cutoff Current | | 10 | nA | $V_{CB} = 50 \text{ V}$ |
| I_{CBO3} | Collector-Base Cutoff Current | | 10 | μA | $V_{BC} = 50 \text{ V}$, $T_A = 150^\circ \text{C}$ |
| I_{EBO1} | Emitter-Base Breakdown Voltage | | 10 | V | $V_{EB} = 6 \text{ V}$ |
| I_{EBO2} | Emitter-Base Cutoff Current | | 10 | nA | $V_{EB} = 4 \text{ V}$ |
| h_{FE1} | Forward-Current Transfer Ratio | 35 | | - | $V_{CE} = 10 \text{ V}$, $I_C = 0.1 \text{ mA}$ |
| h_{FE2} | | 50 | | - | $V_{CE} = 10 \text{ V}$, $I_C = 1.0 \text{ mA}$ |
| h_{FE3} | | 75 | | - | $V_{CE} = 10 \text{ V}$, $I_C = 10 \text{ mA}^{(1)}$ |
| h_{FE4} | | 100 | 300 | - | $V_{CE} = 10 \text{ V}$, $I_C = 150 \text{ mA}^{(1)}$ |
| h_{FE5} | | 40 | | - | $V_{CE} = 10 \text{ V}$, $I_C = 300 \text{ mA}^{(1)}$ |
| h_{FE6} | | 50 | | - | $V_{CE} = 1.0 \text{ V}$, $I_C = 150 \text{ mA}^{(1)}$ |
| h_{FE7} | | 40 | | - | $V_{CE} = 10 \text{ V}$, $I_C = 150 \text{ mA}$, $T_A = -55^\circ \text{C}^{(1)}$ |

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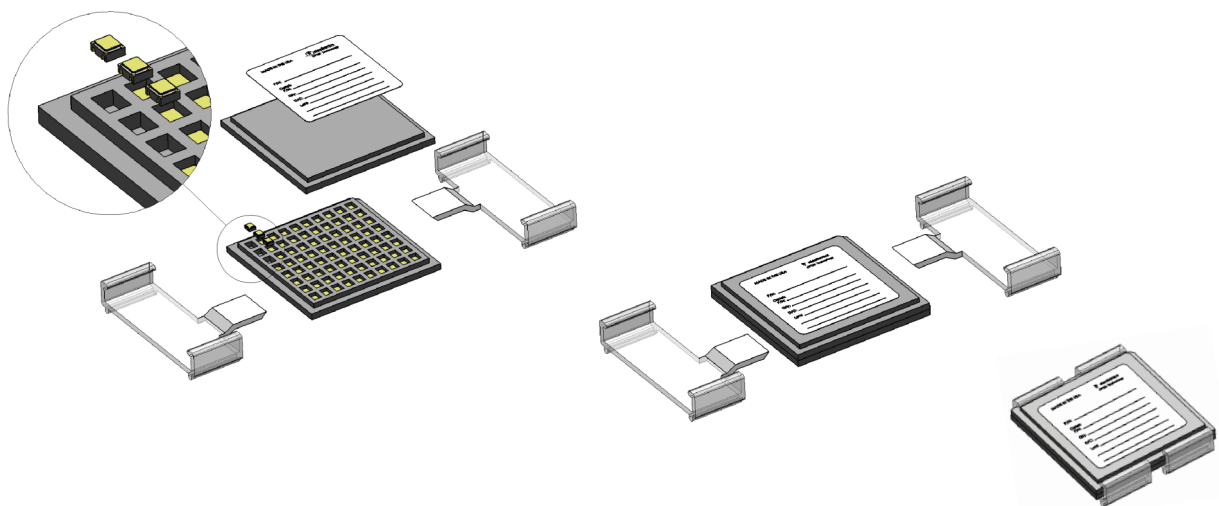
Electrical Specifications

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

| SYMBOL | PARAMETER | MIN | MAX | UNITS | TEST CONDITIONS |
|--------------------------------------|--|-----|-----|-------|--|
| Off Characteristics continued | | | | | |
| $V_{CE(SAT)1}$ | Collector-Emitter Saturation Voltage | | 0.3 | V | $I_C = 150 \text{ mA}$, $I_B = 15 \text{ mA}^{(1)}$ |
| $V_{CE(SAT)2}$ | Collector-Emitter Saturation Voltage | | 0.9 | V | $I_C = 300 \text{ mA}$, $I_B = 30 \text{ mA}^{(1)}$ |
| $V_{BE(SAT)1}$ | Base-Emitter Saturation Voltage | 0.6 | 1.2 | V | $I_C = 150 \text{ mA}$, $I_B = 15 \text{ mA}^{(1)}$ |
| $V_{BE(SAT)1}$ | Base-Emitter Saturation Voltage | | 1.8 | V | $I_C = 300 \text{ mA}$, $I_B = 30 \text{ mA}^{(1)}$ |
| $ h_{fe} $ | Magnitude of Small-Signal Short-Circuit Forward Current Transfer Ratio | 2 | 10 | | $V_{CE} = 20 \text{ V}$, $I_C = 20 \text{ mA}$, $f = 100 \text{ MHz}$ |
| C_{obo} | Open Circuit Output Capacitance | | 8 | pF | $V_{CB} = 10 \text{ V}$, $I_E = 0$, $100 \text{ kHz} \leq f \leq 1 \text{ MHz}$ |
| C_{ibo} | Input Capacitance (output open) | | 33 | pF | $V_{EB} = 0.5 \text{ V}$, $I_C = 0$, $100 \text{ kHz} \leq f \leq 1 \text{ MHz}$ |
| t_{on} | Turn-on Time | | 45 | ns | $V_{CC} = 30 \text{ V}$, $I_C = 150 \text{ mA}$, $I_{B1} = 15 \text{ mA}$, $PW = 200 \text{ ns}$ |
| t_{off} | Turn-off Time | | 310 | ns | $V_{CC} = 30 \text{ V}$, $I_C = 150 \text{ mA}$, $I_{B1} = I_{B2} = 15 \text{ mA}$, $PW = 10 \mu\text{s}$ |

Standard Packaging:

Waffle Pack



Note:

1. Pulsed Test: Pulse Width = $300 \mu\text{s} \pm 50$, 1-2 % Duty Cycle

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