

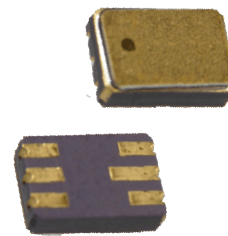
# Surface Mount Dual NPN Transistor

## 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:

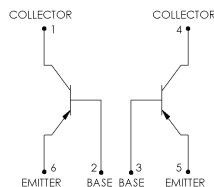
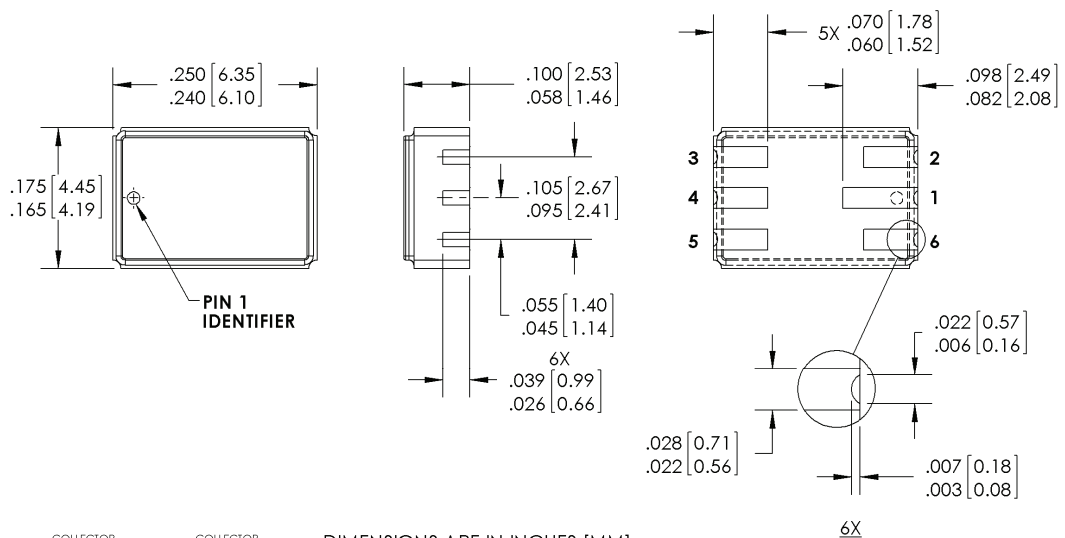
The 2N5794U (TX, TXV) are hermetically sealed, ceramic surface mount devices, consisting of two individual silicon NPN transistors. The six pin ceramic package is ideal for designs where board space and device weight are important design considerations.

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 ( $T_J$ )	$-65^\circ\text{C}$ to $+200^\circ\text{C}$
Storage Junction Temperature ( $T_{stg}$ )	$-65^\circ\text{C}$ 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 <sup>(1)</sup>
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
<b>OFF CHARACTERISTICS</b>					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	40	-	V	$I_C = 10\text{ mA}^{(1)}$
$I_{CBO1}$	Collector-Base Cutoff Current		10	$\mu\text{A}$	$V_{CB} = 75\text{ V}$
$I_{CBO2}$	Collector-Base Cutoff Current		10	nA	$V_{CB} = 50\text{ V}$
$I_{CBO3}$	Collector-Base Cutoff Current		10	$\mu\text{A}$	$V_{BC} = 50\text{ V}, T_A = 150^\circ\text{C}$
$I_{EBO1}$	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		-	$V_{CE} = 10\text{ V}, I_C = 150\text{ mA}, T_A = -55^\circ\text{C}^{(1)}$

Note:

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

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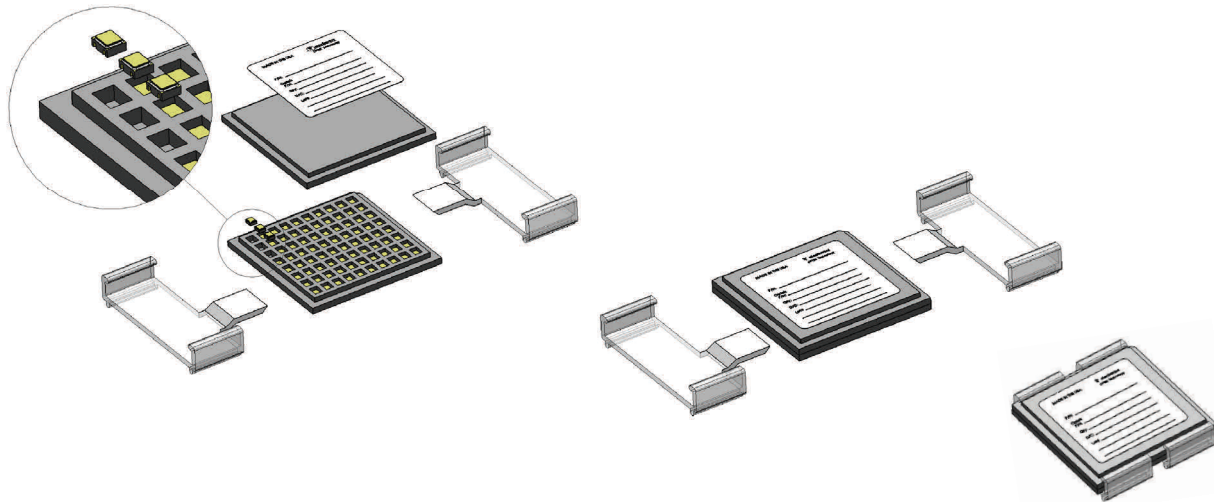
2N5794U (TX, TXV)



Electrical Characteristics (T <sub>A</sub> = 25° C unless otherwise noted)					
SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
<b>Off Characteristics continued</b>					
V <sub>CE(SAT)1</sub>	Collector-Emitter Saturation Voltage		0.3	V	I <sub>C</sub> = 150 mA, I <sub>B</sub> = 15 mA <sup>(1)</sup>
V <sub>CE(SAT)2</sub>	Collector-Emitter Saturation Voltage		0.9	V	I <sub>C</sub> = 300 mA, I <sub>B</sub> = 30 mA <sup>(1)</sup>
V <sub>BE(SAT)1</sub>	Base-Emitter Saturation Voltage	0.6	1.2	V	I <sub>C</sub> = 150 mA, I <sub>B</sub> = 15 mA <sup>(1)</sup>
V <sub>BE(SAT)1</sub>	Base-Emitter Saturation Voltage		1.8	V	I <sub>C</sub> = 300 mA, I <sub>B</sub> = 30 mA <sup>(1)</sup>
h <sub>fe</sub>	Magnitude of Small-Signal Short-Circuit Forward Current Transfer Ratio	2	10		V <sub>CE</sub> = 20 V, I <sub>C</sub> = 20 mA, f = 100 MHz
C <sub>obo</sub>	Open Circuit Output Capacitance		8	pF	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, 100 kHz ≤ f ≤ 1 MHz
C <sub>ibo</sub>	Input Capacitance (output open)		33	pF	V <sub>EB</sub> = 0.5 V, I <sub>C</sub> = 0, 100 kHz ≤ f ≤ 1 MHz
t <sub>on</sub>	Turn-on Time		45	ns	V <sub>CC</sub> = 30 V, I <sub>C</sub> = 150 mA, I <sub>B1</sub> = 15 mA, PW = 200 ns
t <sub>off</sub>	Turn-off Time		310	ns	V <sub>CC</sub> = 30 V, I <sub>C</sub> = 150 mA, I <sub>B1</sub> = I <sub>B2</sub> = 15 mA, PW = 10 μs

## Standard Packaging:

Waffle Pack



**Note:**

1. Pulsed Test: Pulse Width = 300 μs ± 50, 1-2 % Duty Cycle

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