

NPN SILICON DUAL TRANSISTOR

Qualified per MIL-PRF-19500/495

Devices

2N5793

2N5794
2N5794U

Qualified Level

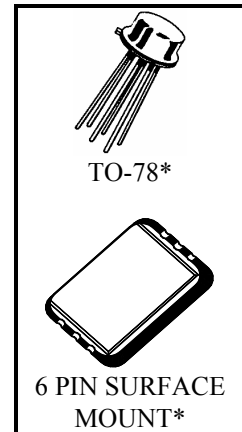
JAN
JANTX
JANTXV

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
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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

ELECTRICAL CHARACTERISTICS (con't)

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

DYNAMIC CHARACTERISTICS

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

SWITCHING CHARACTERISTICS

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

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