

DIGITRON SEMICONDUCTORS

MU4891-MU4894 SILICON UNIJUNCTION TRANSISTOR

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Power dissipation ⁽¹⁾	P_D	300	mW
RMS emitter current	I_E	50	mA
Peak pulse emitter current ⁽²⁾	i_E	1.0	Amps
Emitter reverse voltage	V_{B2E}	30	Volts
Storage temperature range	T_{stg}	-65 to 150	°C

Note 1: Derate 3mW/°C increase in ambient temperature. The total power dissipation must be limited by the external circuitry.

$$V_{B2B1} = \sqrt{R_{BB} \cdot P_D}$$

Note 2: Capacitance discharge must fall to 0.37 Amp within 3.0ms and PRR \leq 10PPS.

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

Parameter	Symbol	Min	Typ	Max	Unit
Intrinsic standoff ratio ($V_{B2B1} = 10V$) ⁽¹⁾	MU4892	0.51	-	0.69	-
	MU4891, MU4893	0.55	-	0.82	
	MU4894	0.74	-	0.86	
Interbase resistance ($V_{B2B1} = 3V, I_E = 0$)	MU4891, MU4892	4.0	7.0	9.1	k Ω
	MU4893, MU4894	4.0	7.0	12.0	
Interbase resistance temperature coefficient ($V_{B2B1} = 3V, I_E = 0, T_A = -65^\circ$ to 100°C)	αR_{BB}	0.1	-	0.9	%/°C
Emitter saturation voltage ($V_{B2B1} = 10V, I_E = 50\text{mA}$) ⁽²⁾	$V_{EB1(sat)}$	-	2.5	4.0	Volts
Modulated interbase current ($V_{B2B1} = 10V, I_E = 50\text{mA}$)	$I_{B2(mod)}$	10	15	-	mA
Emitter reverse current ($V_{B2E} = 30V, I_{B1} = 0$)	I_{EB2O}	-	5.0	10	nA
Peak point emitter current ($V_{B2B1} = 25V$)	MU4891	-	0.6	5.0	μA
	MU4892, MU4893	-	0.6	2.0	
	MU4894	-	0.6	1.0	
Valley point current ($V_{B2B1} = 20V, R_{B2} = 100\text{ohms}$) ⁽²⁾	MU4891, MU4893, MU4894	2.0	4.0	-	mA
	MU4892	2.0	3.0	-	
Base-one peak pulse voltage ⁽³⁾ Figure 3	MU4891, MU4892, MU4894 MU4893	3.0	5.0	-	Volts
		6.0	8.0	-	

Note 1: Intrinsic standoff ratio: $\eta = (V_p - V_{EB1})/V_{B2B1}$, where V_p = peak point emitter voltage, V_{B2B1} = interbase voltage, V_{EB1} = emitter to base one junction diode drop ($\approx 0.5V @ 10\mu\text{A}$).

Note 2: PW $\approx 300\mu\text{s}$, duty cycle $\leq 2\%$ to avoid internal heating due to interbase modulation which may result in erroneous readings

Note 3: Base one peak pulse voltage is used to ensure minimum pulse amplitude for applications in SCR firing circuits and other types of pulse circuits.

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MU4891-MU4894

SILICON UNIJUNCTION TRANSISTOR

FIGURE 1 — UNIJUNCTION TRANSISTOR SYMBOL AND NOMENCLATURE

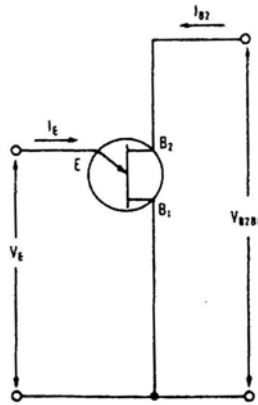


FIGURE 2 — STATIC EMITTER CHARACTERISTICS CURVES

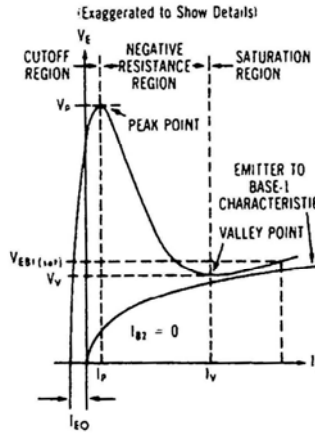
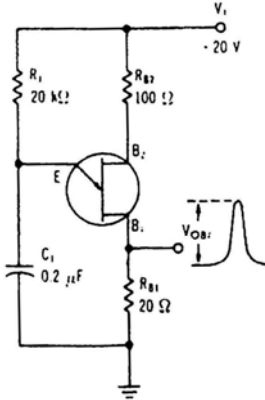
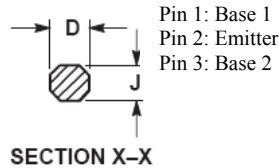
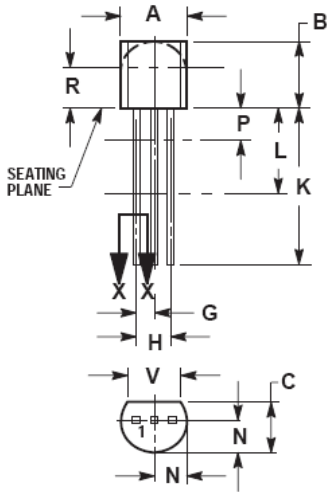


FIGURE 3 — V_{OB1} TEST CIRCUIT
(Typical Relaxation Oscillator)



TO-92 case



Dim	TO-92			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.175	0.205	4.45	5.2
B	0.17	0.21	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.02	0.39	0.5
K	0.5	-	12.7	-
L	0.25	-	6.35	-
N	0.08	0.105	2.04	2.66
P	-	0.1	-	2.54
R	0.115	-	2.93	-
V	0.135	-	3.43	-

Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).
Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.