DIGITRON SEMICONDUCTORS

2N489-2N494, A, B NPN SILICON UNIJUNCTION TRANSISTOR

Silicon unijunction transistors are three-terminal device having a stable "N" type negative resistance characteristic over a wide temperature range.

FEATURES

- Stable operation over wide temperature range
- Low leakage current
- Low peak point current
- Guaranteed minimum pulse voltage
- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).

MAXIMUM RATINGS

Rating	Value
Total RMS Power Dissipation (Unstabilized)	450mW
Total RMS Power Dissipation (Stabilized)	600mW
RMS Emitter Current	70mA
Peak Emitter Current (T_J = 150°C)	2 A
Emitter Reverse Voltage (T_J = 150°C)	60 V
Operating Temperature Range	-65° to +140°C
Operating Temperature Range (Stabilized)	-65° to +175°C
Storage Temperature Range	-65° to +175°C

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Part number	Intrinsic standoff ratio (1)		Interbase resistance (2)		Modulated interbase current		Maximum					Minimum	
							Emitter saturation voltage	Emitter reverse current			Peak point current	Valley point current	Base one peak pulse voltage
	V_{RR} = 10V		V_{BB} = 3V		I_R = 50mA V_{BB} = 10V		I_E = 50mA V_{BB} = 10V	V_{B2E} = 60V	T_J = 150°C V_{B2E} = 10V	V_{B2E} =30V	V_{BB} = 25V	R_{B2} = 100Ω V_{BB} = 20V	
			R_{BBO}		$I_{B2(MOI)}$		$V_{E(SAT)}$	I_{EB2O}	I_{EB2O}	I_{EB2O}	I_P	I_V	V_{OB1}
	η		kΩ		mA		Volts	µA	µA	µA	µA	mA	Volts
	Min	Max	Min	Max	Min	Max							
2N489	.51	.62	4.7	6.8	6.8	22	5	2	20	-	12	8	-
2N489A	.51	.62	4.7	6.8	6.8	22	4	2	20	-	12	8	3
2N489B	.51	.62	4.7	6.8	6.8	22	4	2	20	0.2	6	8	3
2N490	.51	.62	6.2	9.1	6.8	22	5	2	20	-	12	8	-
2N490A	.51	.62	6.2	9.1	6.8	22	4	2	20	-	12	8	3
2N490B	.51	.62	6.2	9.1	6.8	22	4	2	20	0.2	6	8	3
2N490C	.51	.62	6.2	9.1	6.8	22	4	2	20	0.02	2	8	3
2N491	.56	.68	4.7	6.8	6.8	22	5	2	20	-	12	8	-
2N491A	.56	.68	4.7	6.8	6.8	22	4.3	2	20	-	12	8	3
2N491B	.56	.68	4.7	6.8	6.8	22	4.3	2	20	0.2	6	8	3
2N492	.56	.68	6.2	9.1	6.8	22	5	2	20	-	12	8	-
2N492A	.56	.68	6.2	9.1	6.8	22	4.3	2	20	-	12	8	3
2N492B	.56	.68	6.2	9.1	6.8	22	4.3	2	20	0.2	6	8	3
2N492C	.56	.68	6.2	9.1	6.8	22	4.3	2	20	0.02	2	8	3
2N493	.62	.75	4.7	6.8	6.8	22	5	2	20	-	12	8	-
2N493A	.62	.75	4.7	6.8	6.8	22	4.6	2	20	-	12	8	3
2N493B	.62	.75	4.7	6.8	6.8	22	4.6	2	20	0.2	6	8	3
2N494	.62	.75	6.2	9.1	6.8	22	5	2	20	-	12	8	-
2N494A	.62	.75	6.2	9.1	6.8	22	4.6	2	20	-	12	8	3
2N494B	.62	.75	6.2	9.1	6.8	22	4.6	2	20	0.2	6	8	3
2N494C	.62	.75	6.2	9.1	6.8	22	4.6	2	20	0.02	2	8	3

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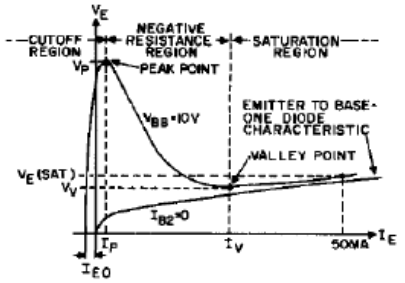
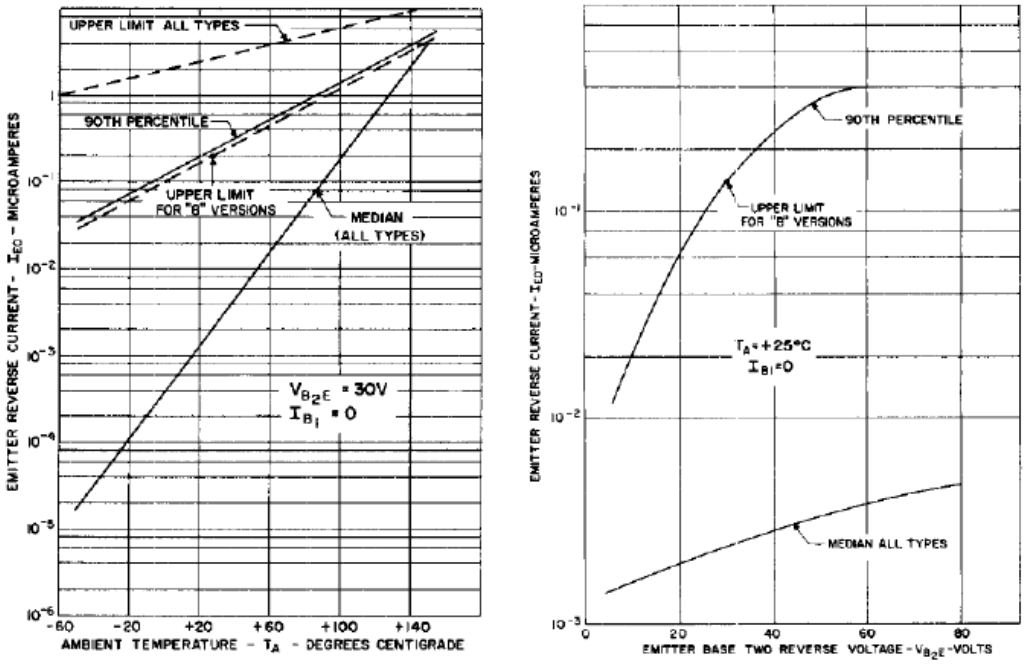
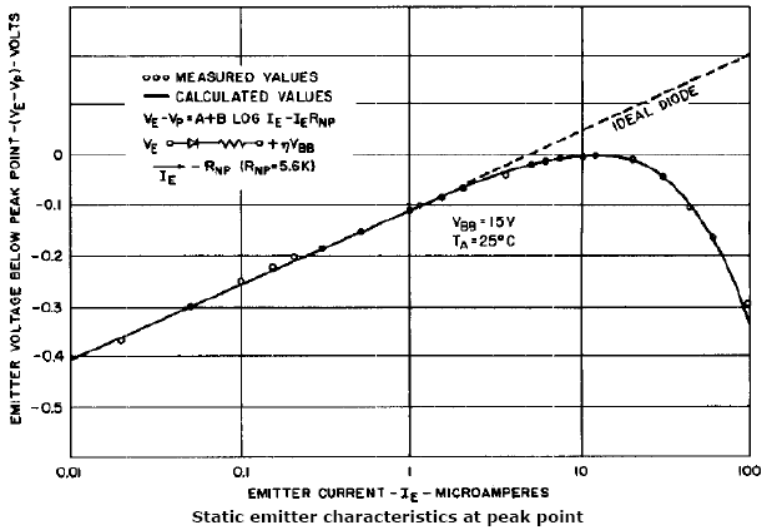


Static emitter characteristic curves showing important parameters and measurement points.



Emitter reverse current characteristics



Static emitter characteristics at peak point

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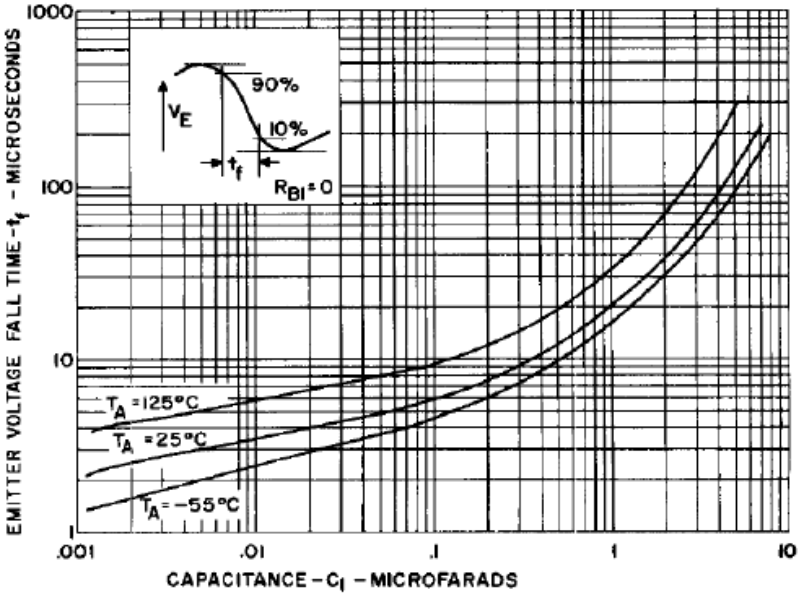
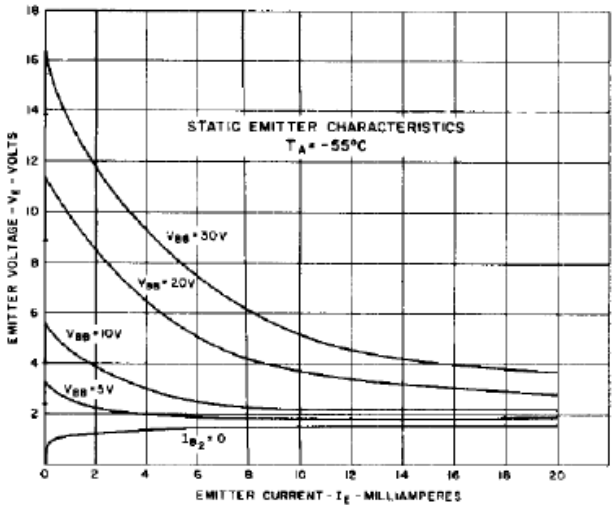
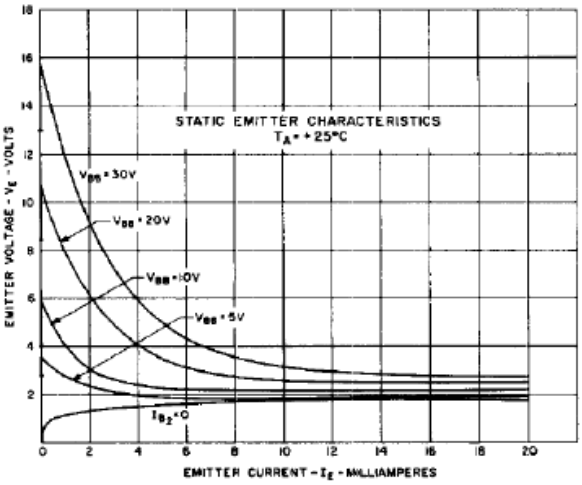
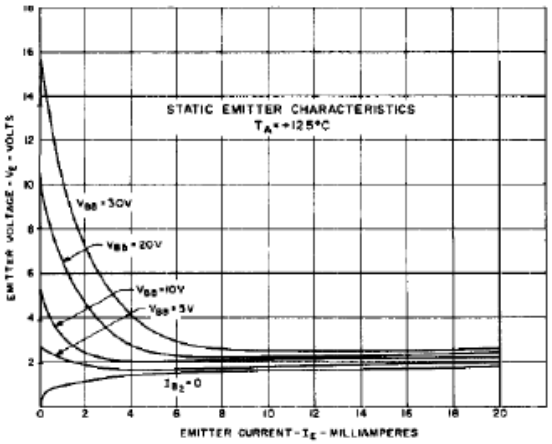


Emitter voltage fall time vs. capacitance in relaxation oscillator





Static emitter characteristics



Static emitter characteristics

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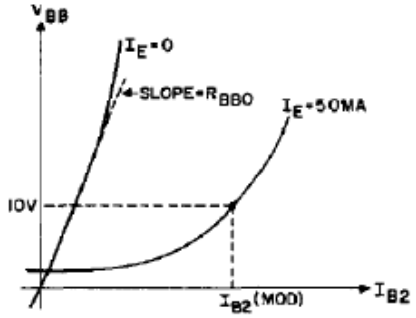
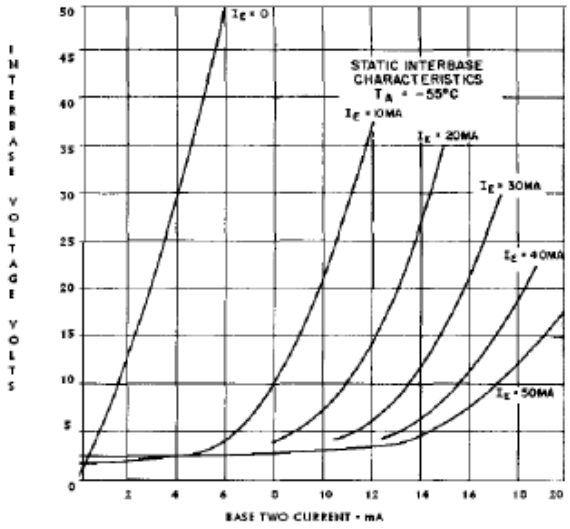
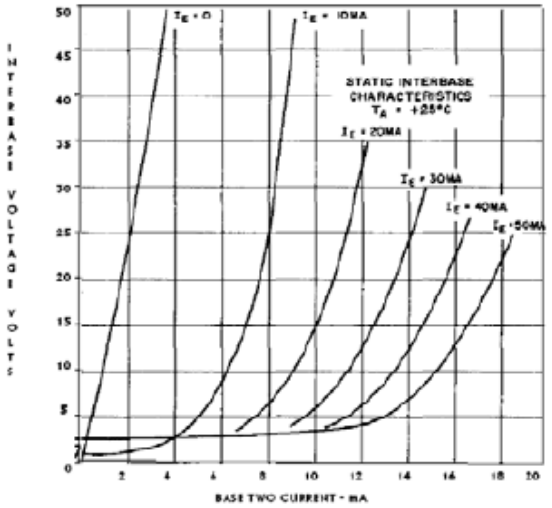
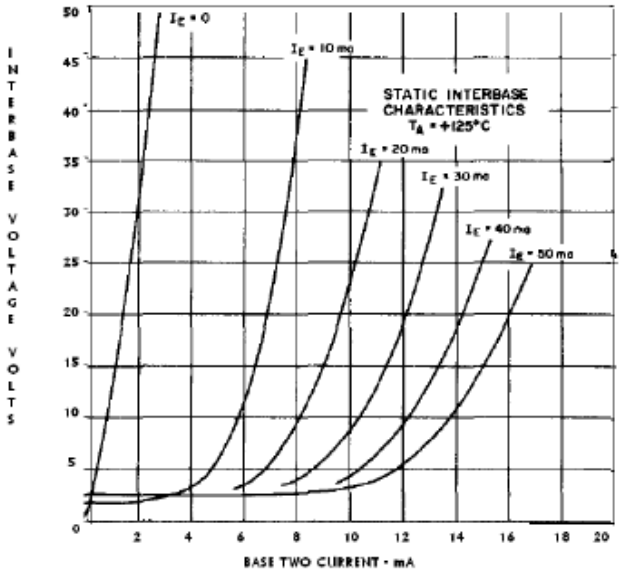


Static interbase characteristic curves showing important parameters and measurement points







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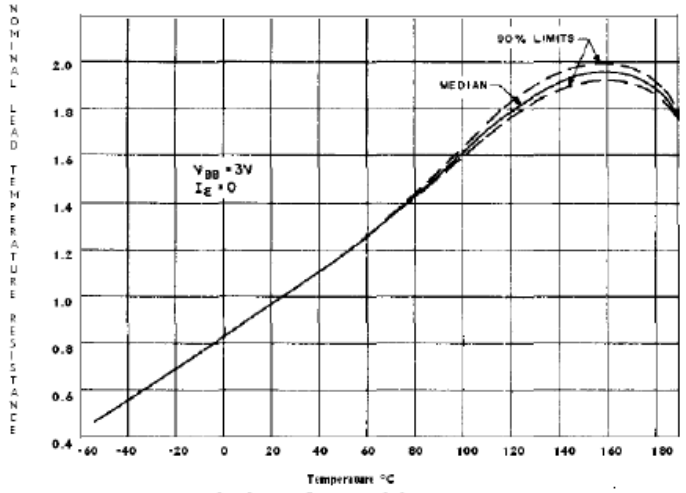
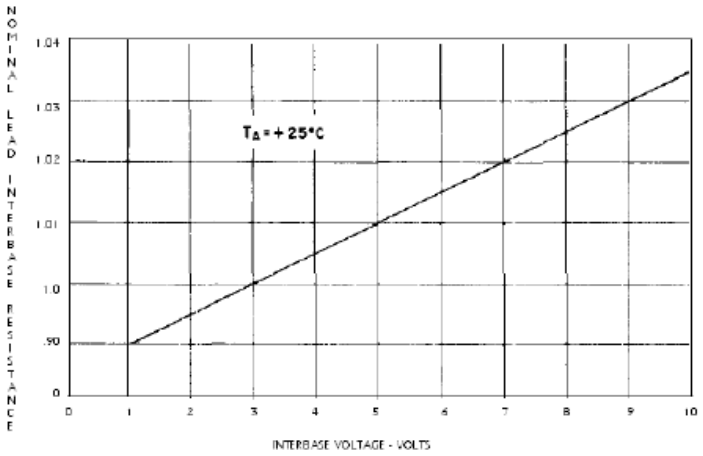
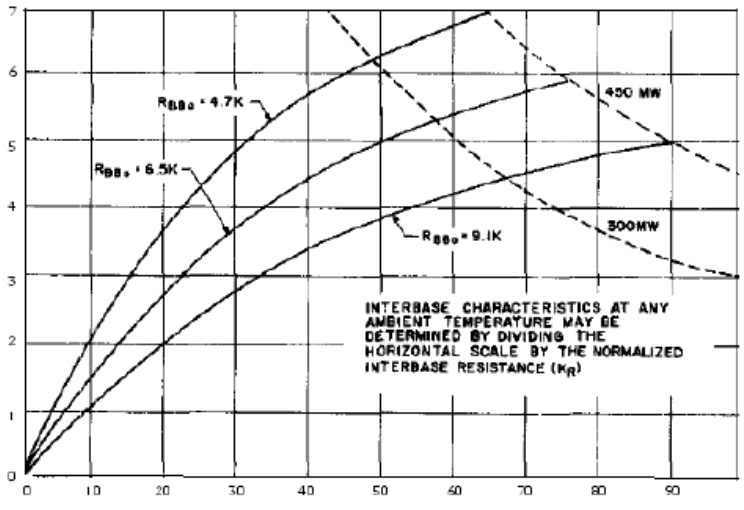


Variation of R_{BB} with temperature



Variation of R_{BB} with voltage



Characteristic curve

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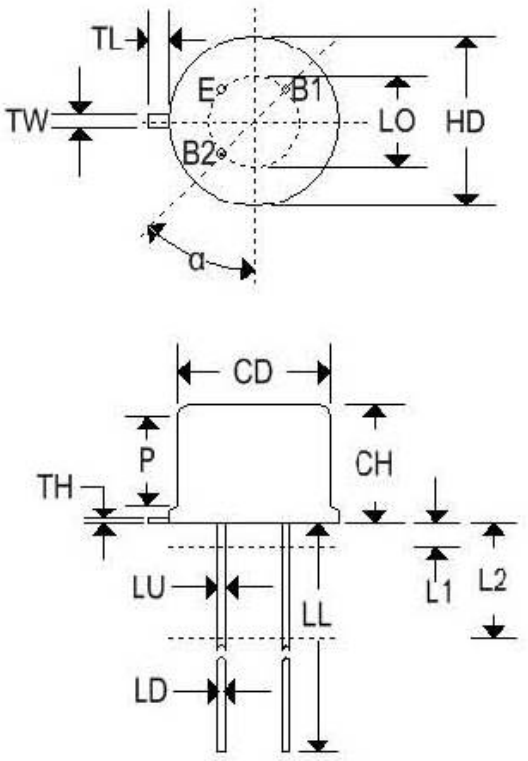

Dim	TO-5			
	Inches		Millimeters	
	Min	Max	Min	Max
HD	0.335	0.370	8.510	9.400
CD	0.305	0.335	7.750	8.510
CH	0.240	0.260	6.100	6.600
LL	1.500	-	38.100	-
LD	0.016	0.021	0.410	0.530
LU	0.016	0.019	0.410	0.480
P	0.100	-	2.540	-
TL	0.029	0.045	0.740	1.140
TW	0.028	0.034	0.710	0.860
TH	0.009	0.125	0.230	3.180
LO	0.141 NOM		3.590 NOM	
α	45°TP		45°TP	

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