

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 ($T_J = 150^\circ\text{C}$)	2 A
Emitter Reverse Voltage ($T_J = 150^\circ\text{C}$)	60 V
Operating Temperature Range	-65° to $+140^\circ\text{C}$
Operating Temperature Range (Stabilized)	-65° to $+175^\circ\text{C}$
Storage Temperature Range	-65° to $+175^\circ\text{C}$

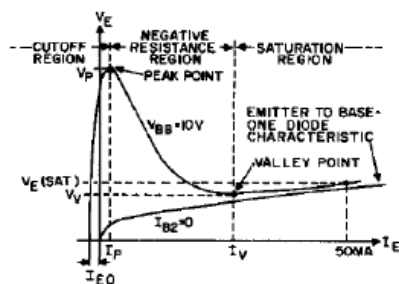
ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Part number	Intrinsic standoff ratio ⁽¹⁾		Interbase resistance ⁽²⁾		Modulated interbase current		Maximum					Minimum		
	V _{RR} = 10V		V _{BB} = 3V		I _R = 50mA V _{BB} = 10V		Emitter saturation voltage		Emitter reverse current			Peak point current	Valley point current	Base one peak pulse voltage
							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	
	η		kΩ		mA		Volts		μA	μA	μA	μA	mA	
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	

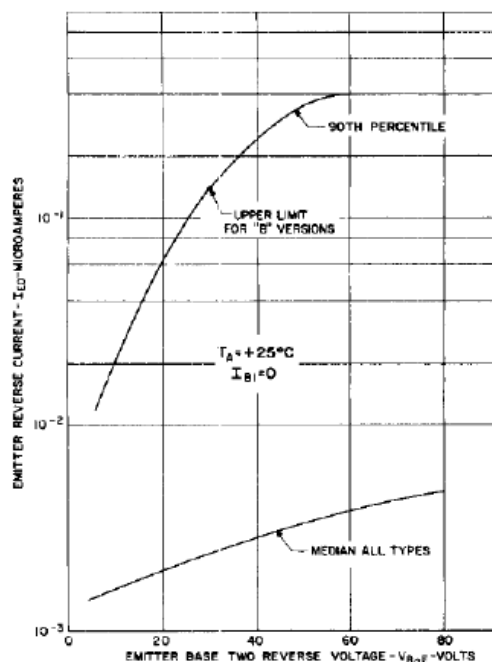
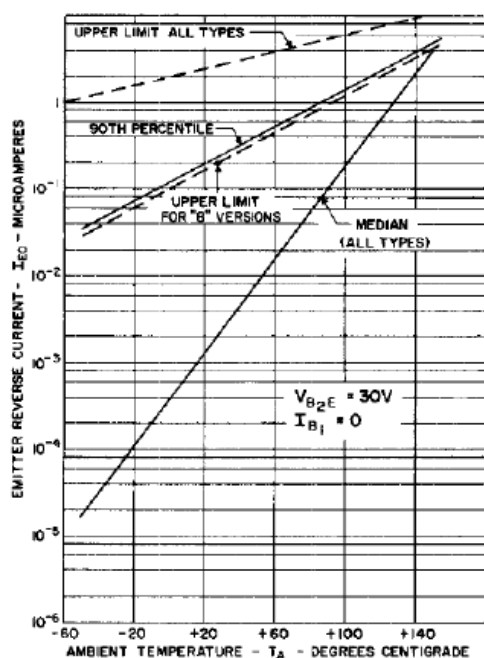
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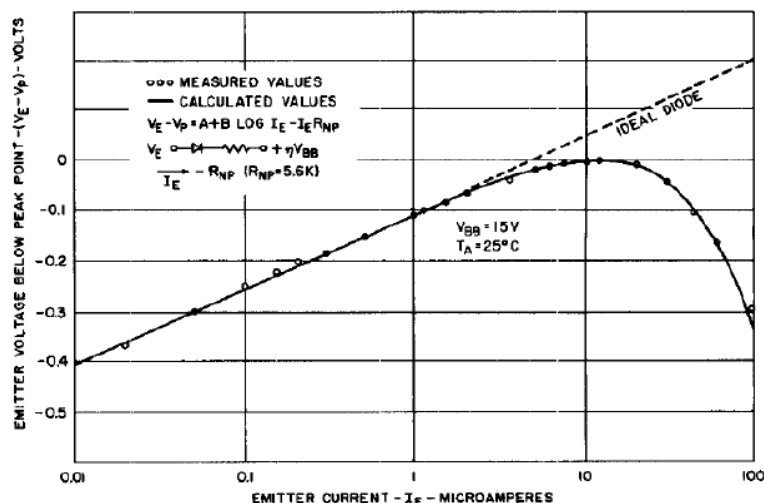
NPN SILICON UNIJUNCTION TRANSISTOR



Static emitter characteristic curves showing important parameters and measurement points.



Emitter reverse current characteristics

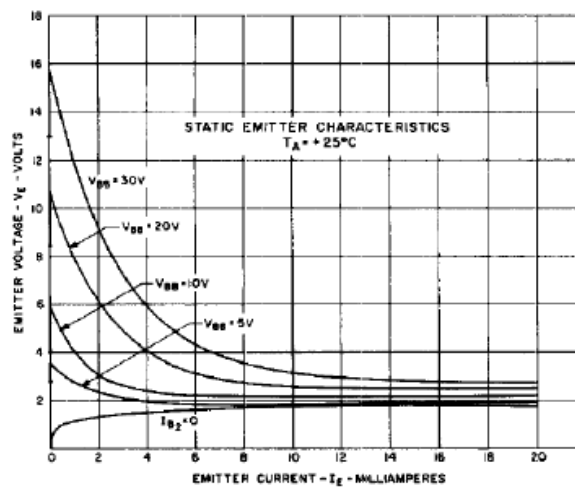
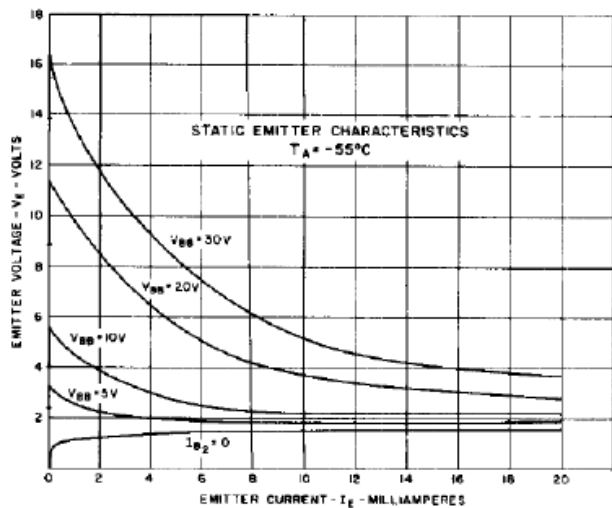
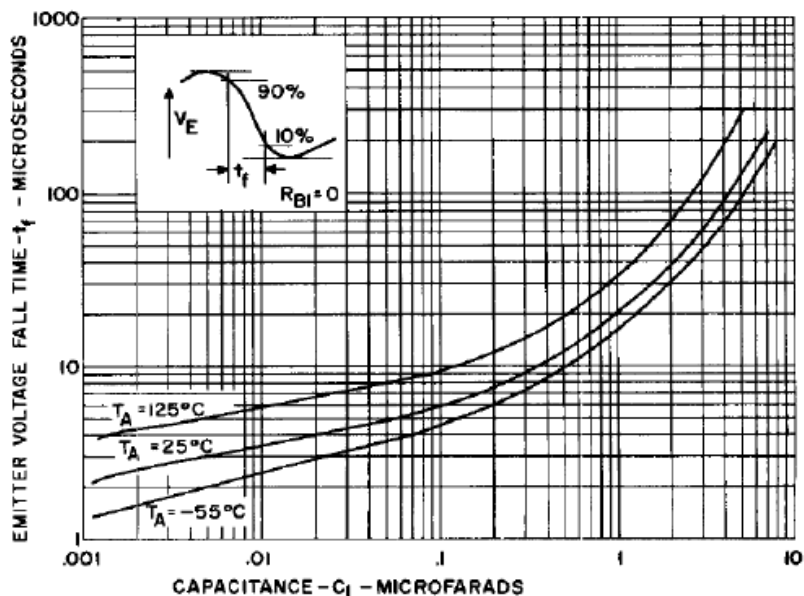


Static emitter characteristics at peak point

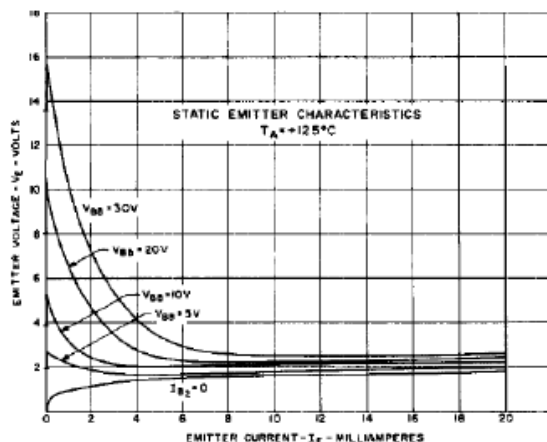
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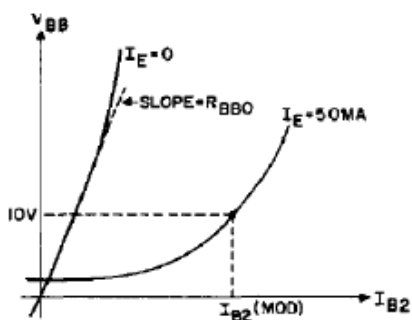
Static emitter characteristics



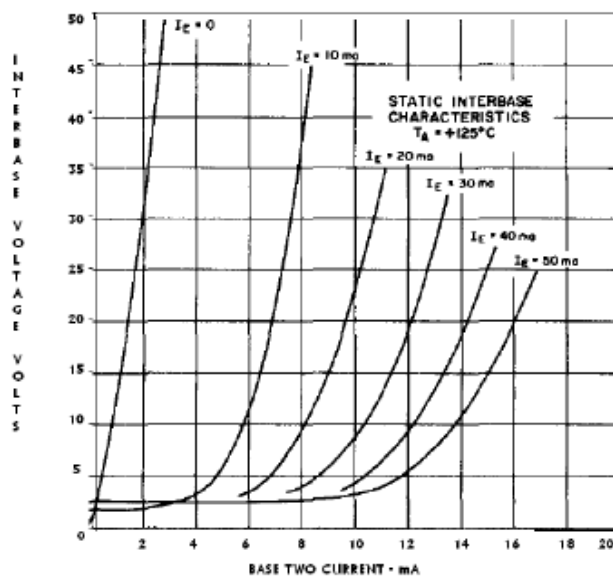
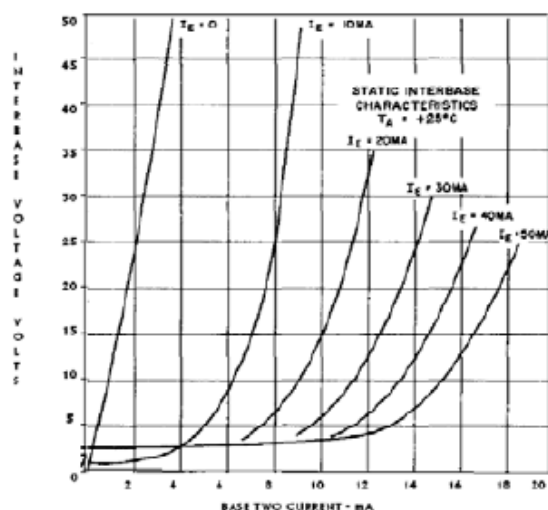
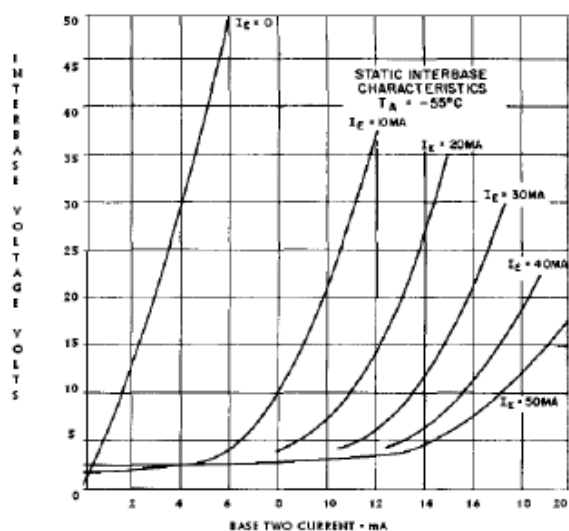
Static emitter characteristics

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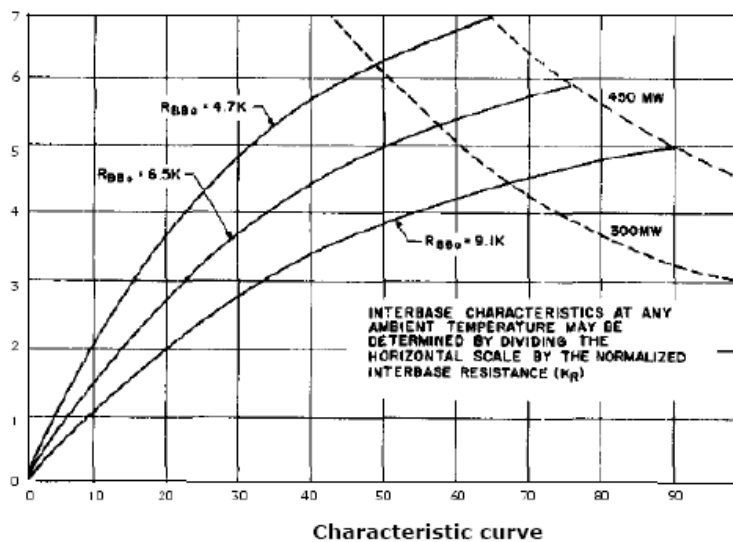
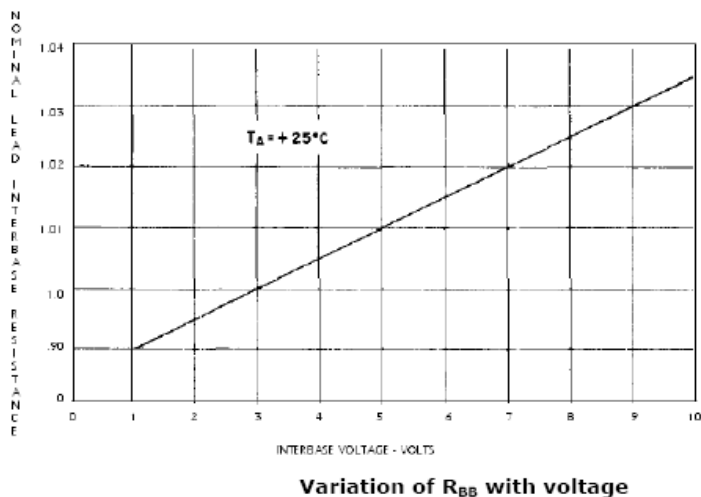
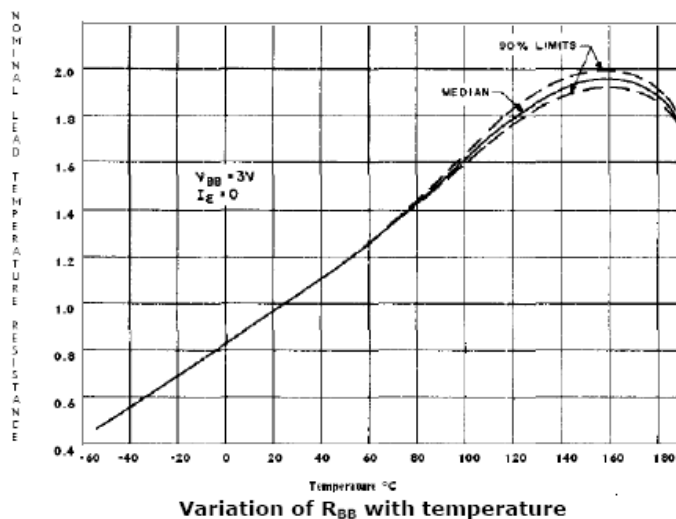
Static interbase characteristic curves showing important parameters and measurement points



Static emitter characteristics

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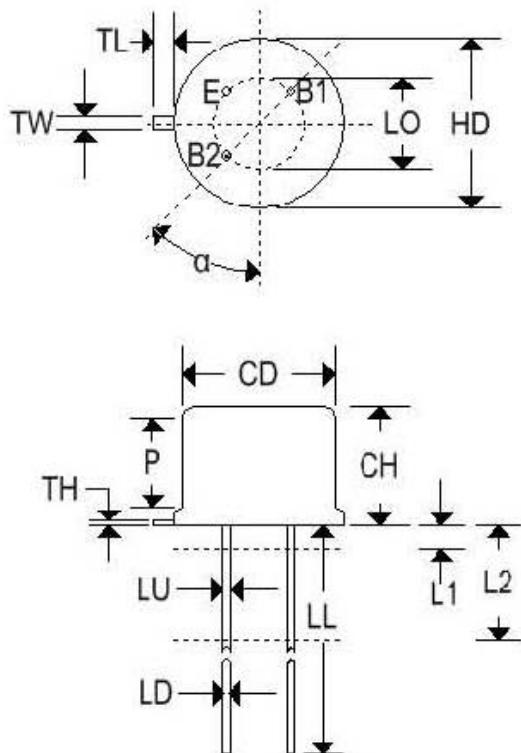
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Dim	TO-5			
	Inches		Millimeters	
	Min	Max	Min	Max
HD	0.335	0.370	8.510	9.400
CD	0.305	0.335	7.750	8.510
CH	0.240	0.260	6.100	6.600
LL	1.500	-	38.100	-
LD	0.016	0.021	0.410	0.530
LU	0.016	0.019	0.410	0.480
P	0.100	-	2.540	-
TL	0.029	0.045	0.740	1.140
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	