

NPN SILICON EPITAXIAL TRANSISTOR
(WITH BUILT-IN 2 ELEMENTS) MINI MOLD

The 2SC4571 has built-in 2 transistors which were developed for UHF.

FEATURES

- High f_T
 $f_T = 5.0$ GHz TYP. (@ $V_{CE} = 5$ V, $I_C = 5$ mA, $f = 1$ GHz)
- Small Collector Capacitance
 $C_{ob} = 0.9$ pF TYP. (@ $V_{CB} = 5$ V, $I_E = 0$, $f = 1$ MHz)
- A surface Mounting Package Adopted
- Built-in 2 Transistors ($2 \times 2SC4571$)

ORDERING INFORMATION

PART NUMBER	QUANTITY	PACKING STYLE
μ PA804T	Loose products (50 PCS)	Embossed tape 8 mm wide. Pin 6 (Q1 Base), Pin 5 (Q2 Base), Pin 4 (Q2 Emitter) face to perforation side of the tape.
μ PA804T-T1	Taping products (3 KPCS/Reel)	

Remark If you require an evaluation sample, please contact an NEC Sales Representative. (Unit sample quantity is 50 pcs.)

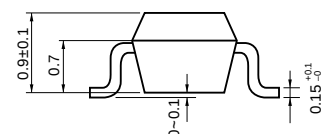
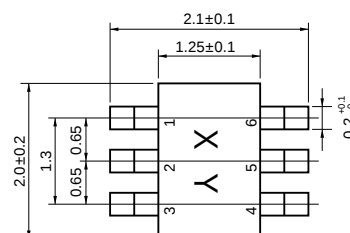
ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

PARAMETER	SYMBOL	RATING	UNIT
Collector to Base Voltage	V_{CBO}	20	V
Collector to Emitter Voltage	V_{CEO}	12	V
Emitter to Base Voltage	V_{EBO}	3	V
Collector Current	I_C	60	mA
Total Power Dissipation	P_T	120 in 1 element 160 in 2 elements ^{Note}	mW
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to 125	$^\circ\text{C}$

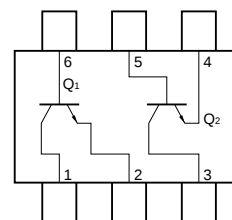
Note 90 mW must not be exceeded in 1 element.

PACKAGE DRAWINGS

(Unit: mm)



PIN CONFIGURATION (Top View)



PIN CONNECTIONS

- | | |
|-------------------|-----------------|
| 1. Collector (Q1) | 4. Emitter (Q2) |
| 2. Emitter (Q1) | 5. Base (Q2) |
| 3. Collector (Q2) | 6. Base (Q1) |

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

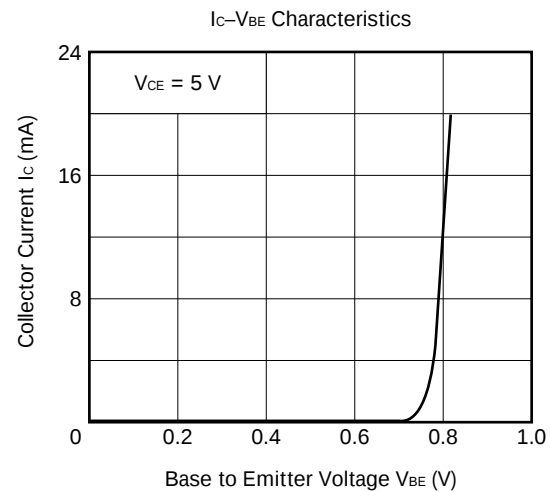
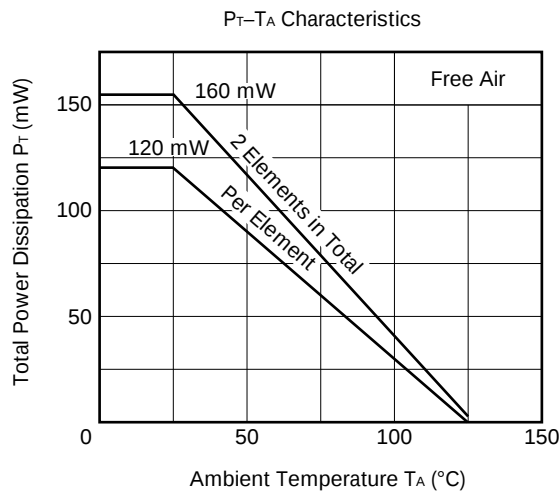
PARAMETER	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cutoff Current	I_{CBO}	$V_{CB} = 15\text{ V}, I_E = 0$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 1\text{ V}, I_C = 0$			0.1	μA
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$h_{FE} = 10, I_C = 5\text{ mA}$			0.5	V
DC Current Gain	h_{FE}	$V_{CE} = 5\text{ V}, I_C = 5\text{ mA}$ Note 1	60		200	
Gain Bandwidth Product (1)	f_T	$V_{CE} = 5\text{ V}, I_C = 5\text{ mA}, f = 1\text{ GHz}$	3	5		GHz
Feed-back Capacitance	C_{re}	$V_{CB} = 5\text{ V}, I_E = 0, f = 1\text{ MHz}$ Note 2		0.9	1.2	pF
Insertion Power Gain (1)	$ S_{21} ^2$	$V_{CE} = 5\text{ V}, I_C = 5\text{ mA}, f = 1\text{ GHz}$	5			dB
h_{FE} Ratio	h_{FE1}/h_{FE2}	$V_{CE} = 5\text{ V}, I_C = 5\text{ mA}$ A smaller value among h_{FE} of $h_{FE1} = Q1, Q2$ A larger value among h_{FE} of $h_{FE2} = Q1, Q2$	0.85			

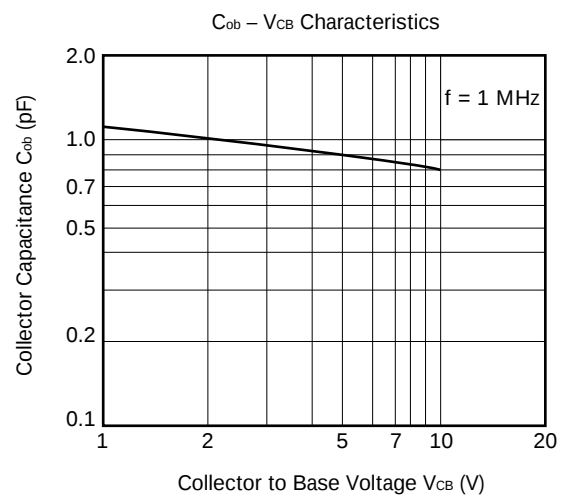
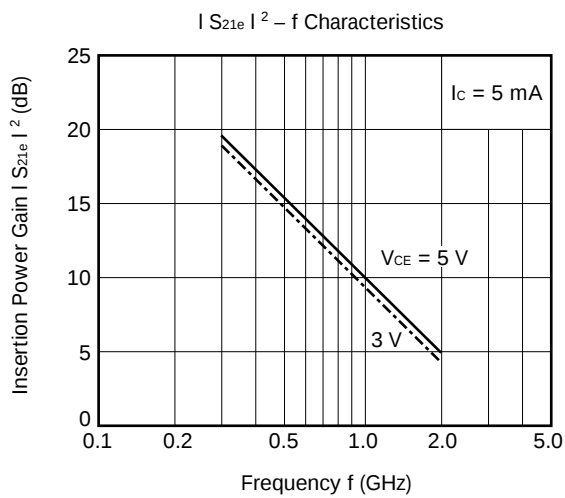
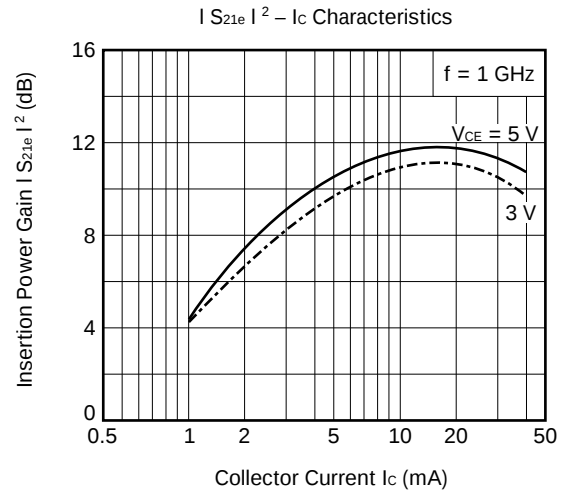
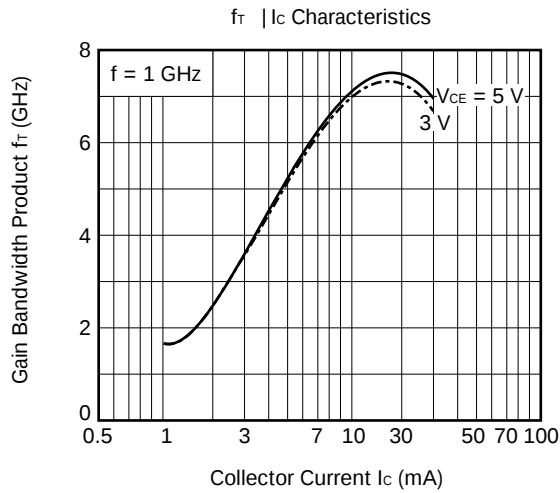
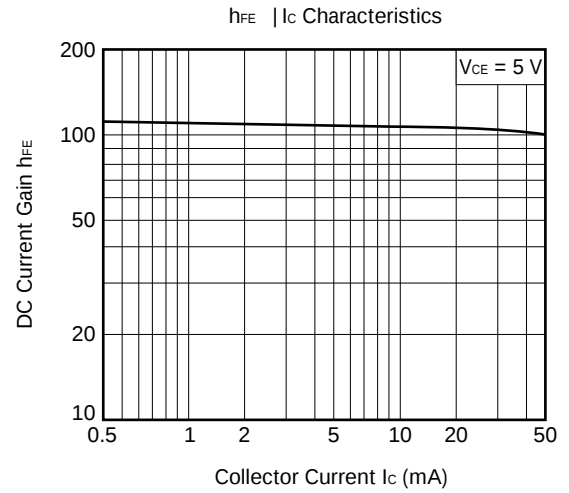
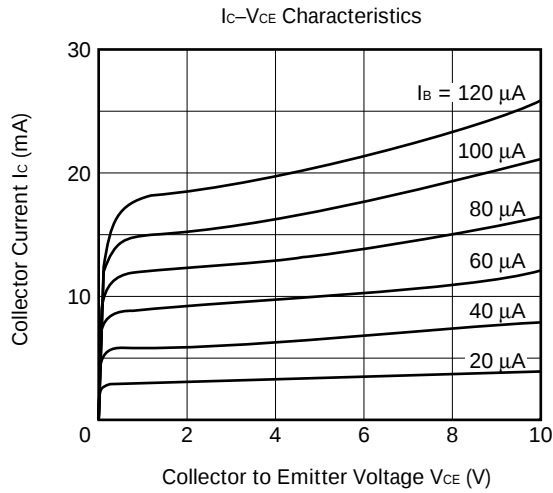
Notes 1. Pulse Measurement: $P_w \leq 350\text{ }\mu\text{s}$, Duty cycle $\leq 2\%$

2. Measured with 3-pin bridge, emitter and case should be connected to guard pin of bridge.

 h_{FE} CLASSIFICATION

Rank	FB	GB
Marking	T76	T77
h_{FE} Value	60 to 120	100 to 200

TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)



S-PARAMETERS $V_{CE} = 5 \text{ V}$, $I_C = 5 \text{ mA}$, $Z_0 = 50 \Omega$

FREQUENCY MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100.00	.874	-24.2	8.628	152.9	.032	71.8	.910	-18.4
200.00	.752	-49.1	8.089	135.3	.054	61.2	.763	-30.3
300.00	.625	-70.9	7.278	121.4	.068	55.5	.643	-36.7
400.00	.523	-89.3	6.406	110.0	.079	52.9	.560	-40.1
500.00	.444	-105.3	5.617	101.1	.088	52.1	.502	-42.3
600.00	.396	-117.4	4.890	94.1	.097	51.8	.462	-43.8
700.00	.359	-129.0	4.345	88.0	.105	51.9	.434	-45.2
800.00	.336	-138.5	3.893	82.9	.114	52.0	.414	-46.6
900.00	.318	-147.3	3.529	78.3	.122	52.4	.398	-47.9
1000.00	.307	-155.3	3.221	74.0	.131	52.3	.385	-49.5
1100.00	.299	-162.8	2.959	70.1	.140	52.2	.376	-51.0
1200.00	.294	-169.3	2.751	66.4	.149	52.0	.371	-52.7
1300.00	.292	-175.3	2.565	62.9	.158	52.4	.364	-54.2
1400.00	.292	-179.1	2.407	59.5	.167	51.9	.359	-55.6
1500.00	.293	-173.6	2.269	56.4	.177	51.3	.356	-57.3
1600.00	.296	-168.8	2.155	53.3	.186	51.2	.350	-58.9
1700.00	.298	-164.4	2.045	50.2	.195	50.6	.346	-60.4
1800.00	.300	-160.2	1.950	47.4	.206	49.9	.342	-62.3
1900.00	.302	-156.1	1.873	44.6	.215	49.4	.337	-64.5
2000.00	.310	-151.8	1.793	41.6	.225	48.8	.327	-67.1
2100.00	.314	-148.3	1.726	38.9	.235	48.2	.322	-69.4
2200.00	.318	-144.7	1.662	36.3	.245	47.2	.317	-72.4
2300.00	.323	-141.3	1.609	33.7	.255	46.3	.312	-75.3
2400.00	.328	-138.2	1.556	31.2	.265	45.4	.307	-78.9
2500.00	.335	-135.1	1.513	28.7	.274	44.5	.304	-82.9
2600.00	.339	-131.9	1.466	26.3	.284	43.4	.302	-87.1
2700.00	.345	-129.3	1.427	23.9	.294	42.5	.302	-91.0
2800.00	.349	-126.3	1.387	21.5	.304	41.5	.304	-94.8
2900.00	.356	-123.8	1.353	19.3	.315	40.4	.309	-98.9
3000.00	.361	-121.0	1.323	17.2	.323	39.4	.313	-102.4

 $V_{CE} = 5 \text{ V}$, $I_C = 3 \text{ mA}$, $Z_0 = 50 \Omega$

FREQUENCY MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100.00	.923	-19.2	5.456	157.3	.034	75.1	.951	-13.6
200.00	.844	-39.4	5.317	142.0	.060	63.0	.852	-24.1
300.00	.746	-57.9	5.047	128.9	.078	55.7	.752	-31.3
400.00	.660	-74.5	4.667	118.1	.091	51.5	.674	-35.8
500.00	.575	-90.3	4.321	108.3	.101	48.3	.612	-39.0
600.00	.516	-102.7	3.860	100.4	.108	46.4	.567	-41.5
700.00	.461	-114.8	3.546	93.2	.115	45.7	.532	-43.6
800.00	.423	-125.2	3.237	87.1	.122	45.3	.507	-45.4
900.00	.396	-134.9	2.979	81.6	.128	44.8	.486	-47.1
1000.00	.375	-143.6	2.749	76.6	.134	45.2	.471	-48.8
1100.00	.362	-151.4	2.547	72.4	.142	45.3	.461	-50.5
1200.00	.349	-158.8	2.380	68.0	.147	45.4	.452	-52.3
1300.00	.343	-165.2	2.222	64.2	.154	45.9	.445	-54.0
1400.00	.339	-171.7	2.101	60.4	.161	46.1	.438	-55.6
1500.00	.336	-177.6	1.984	57.0	.169	46.4	.433	-57.3
1600.00	.337	-177.0	1.887	53.5	.177	46.5	.428	-59.0
1700.00	.338	-172.0	1.798	50.3	.184	46.6	.423	-61.1
1800.00	.337	-167.1	1.719	47.2	.193	46.7	.419	-63.1
1900.00	.339	-162.7	1.648	44.0	.201	46.5	.411	-65.2
2000.00	.345	-158.0	1.579	41.2	.211	46.3	.405	-68.0
2100.00	.348	-153.8	1.524	38.4	.219	46.0	.399	-70.4
2200.00	.351	-150.0	1.470	35.4	.229	45.6	.394	-73.4
2300.00	.357	-146.1	1.424	32.8	.238	45.3	.389	-76.4
2400.00	.361	-142.5	1.376	30.1	.247	44.6	.386	-80.0
2500.00	.367	-139.2	1.338	27.5	.257	44.0	.383	-83.8
2600.00	.371	-135.8	1.296	25.0	.266	43.5	.381	-88.0
2700.00	.376	-132.6	1.263	22.5	.275	42.9	.380	-91.4
2800.00	.381	-129.3	1.231	20.1	.287	42.1	.385	-95.4
2900.00	.387	-126.4	1.199	17.9	.297	41.4	.389	-99.2
3000.00	.392	-123.4	1.169	15.7	.306	40.4	.391	-103.0