

**NPN SILICON EPITAXIAL TWIN TRANSISTOR  
(WITH BUILT-IN 2 × 2SC5010)  
FLAT-LEAD 6-PIN THIN -TYPE ULTRA SUPER MINIMOLD**

#### FEATURES

- Low noise and high gain
- Operable at low voltage
- Small feedback capacitance:  $C_{re} = 0.4$  pF TYP.
- Flat-lead 6-pin thin-type ultra super minimold package
- Built-in 2 transistors (2 × 2SC5010)

#### ORDERING INFORMATION

Part Number	Package	Quantity	Supplying Form
μPA826TC	Flat-lead 6-pin thin-type ultra super minimold	Loose products (50 pcs)	Embossed tape 8 mm wide. Pin 6 (Q1 Base), Pin 5 (Q2 Emitter), Pin 4 (Q2 Base) face to perforation side of the tape.
μPA826TC-T1		Taping products (3 kp/reel)	

**Remark** To order evaluation samples, please contact your local NEC sales office. (Part number for sample order: μPA826TC. Unit sample quantity is 50 pcs).

#### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = +25°C)

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	V <sub>CB0</sub>	9	V
Collector to Emitter Voltage	V <sub>CE0</sub>	6	V
Emitter to Base Voltage	V <sub>EBO</sub>	2	V
Collector Current	I <sub>c</sub>	30	mA
Total Power Dissipation	P <sub>T</sub> <sup>Note</sup>	180 in 1 element 230 in 2 elements	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-65 to 150	°C

**Note** Mounted on 1.08 cm<sup>2</sup> × 1.0 mm glass epoxy substrate.

#### Caution Electro-static sensitive devices

The information in this document is subject to change without notice. Before using this document, please confirm that this is the latest version.  
Not all devices/types available in every country. Please check with local NEC representative for availability and additional information.

**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = +25 °C)**

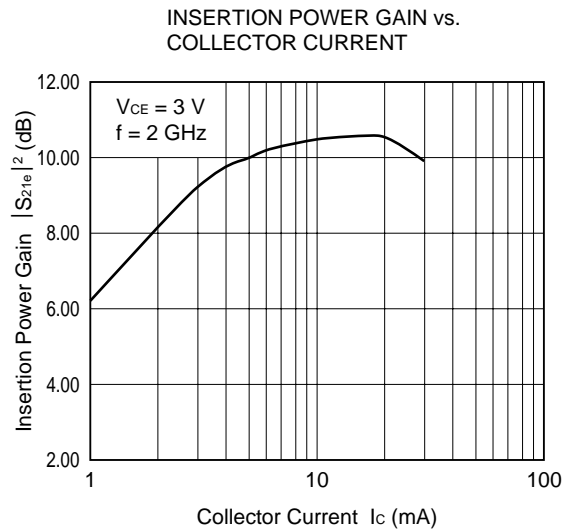
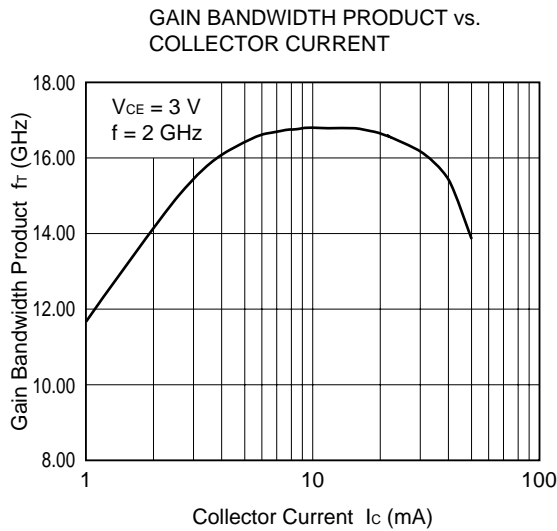
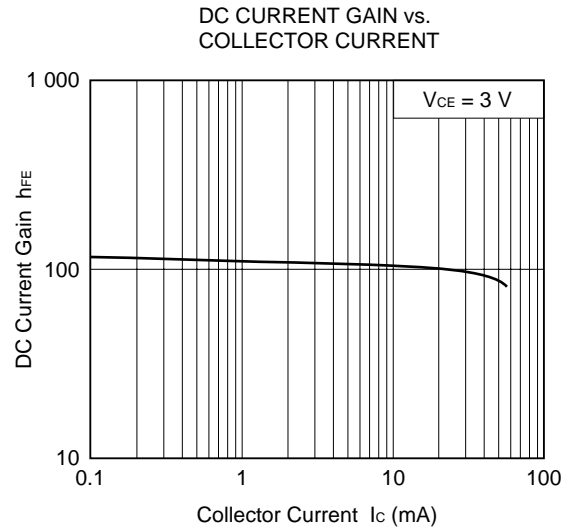
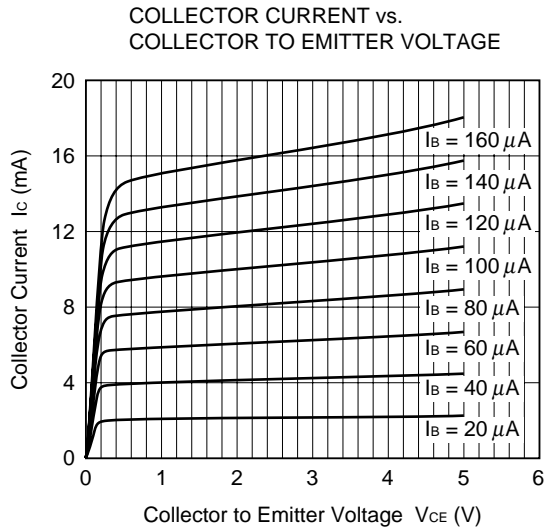
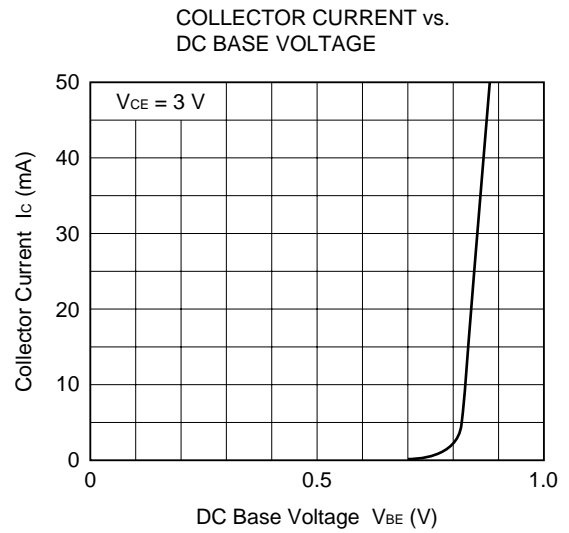
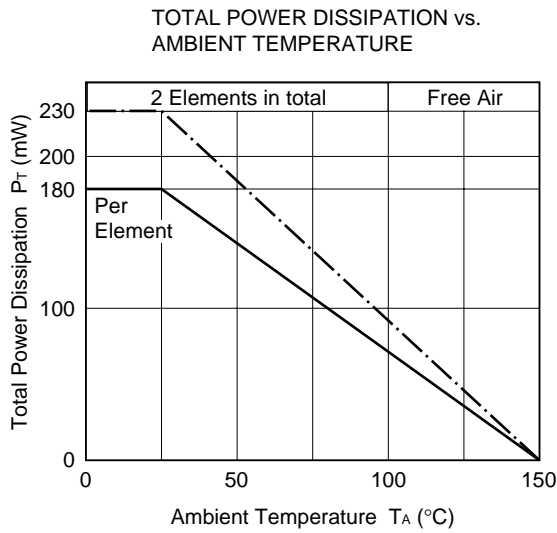
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0	–	–	0.1	μA
Emitter Cutoff Current	I <sub>EB0</sub>	V <sub>EB</sub> = 1 V, I <sub>C</sub> = 0	–	–	0.1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 3 V, I <sub>C</sub> = 7 mA <sup>Note 1</sup>	75	–	150	
Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = 3 V, I <sub>C</sub> = 7 mA, f = 1 GHz	10.0	12.0	–	GHz
Feedback Capacitance	C <sub>re</sub>	V <sub>CB</sub> = 3 V, I <sub>E</sub> = 0, f = 1 MHz <sup>Note 2</sup>	–	0.4	0.7	pF
Insertion Power Gain	S <sub>21e</sub>   <sup>2</sup>	V <sub>CE</sub> = 3 V, I <sub>C</sub> = 7 mA, f = 1 GHz	7.0	8.5	–	dB
Noise Figure	NF	V <sub>CE</sub> = 3 V, I <sub>C</sub> = 7 mA, f = 1 GHz	–	1.5	2.5	dB

- Notes 1.** Pulse Measurement: PW ≤ 350 μs, Duty Cycle ≤ 2%
- 2.** Capacitance between collector and base measured with a capacitance meter (auto-balancing bridge method). Emitter should be connected to the guard pin of capacitance meter.

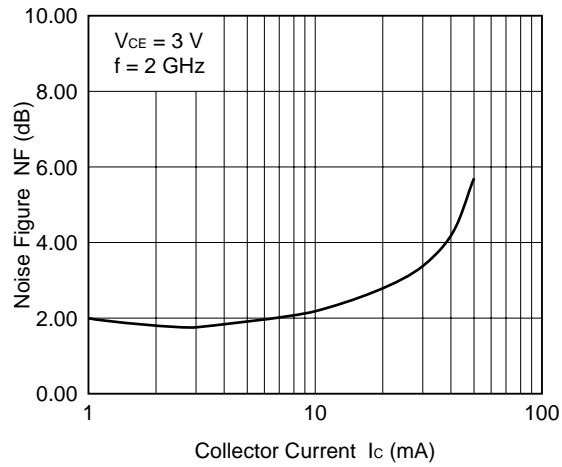
**h<sub>FE</sub> CLASSIFICATION**

Rank	KB
Marking	83
h <sub>FE</sub> Value	75 to 150

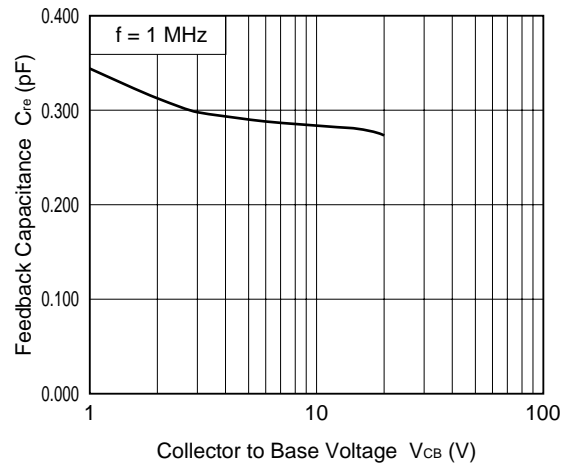
TYPICAL CHARACTERISTICS ( $T_A = +25\text{ }^\circ\text{C}$ )



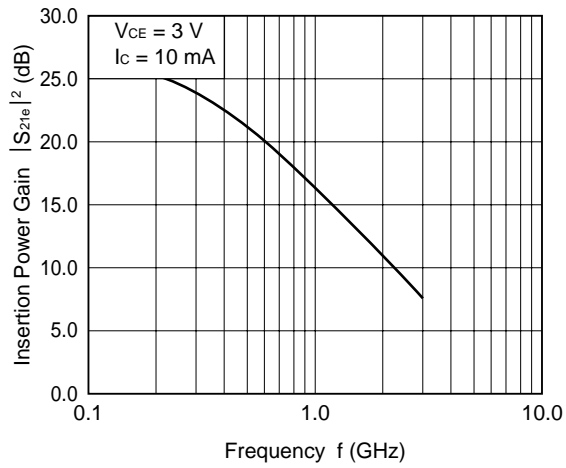
NOISE FIGURE vs. COLLECTOR CURRENT



FEEDBACK CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



INSERTION POWER GAIN vs. FREQUENCY



**S-PARAMETERS Q1**

V<sub>CE</sub> = 3 V, I<sub>c</sub> = 1 mA

FREQUENCY GHz	S <sub>11</sub>		S <sub>21</sub>		S <sub>12</sub>		S <sub>22</sub>	
	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.
0.1	0.962	-14.0	3.900	166.5	0.031	34.7	1.012	-9.6
0.2	0.939	-25.6	3.769	154.0	0.044	70.0	0.986	-19.1
0.3	0.925	-38.2	3.657	142.4	0.058	61.6	0.980	-28.7
0.4	0.900	-51.3	3.558	130.1	0.075	48.7	0.965	-38.0
0.5	0.887	-63.0	3.505	118.5	0.089	39.6	0.941	-47.0
0.6	0.841	-75.3	3.365	106.7	0.105	30.7	0.918	-56.1
0.7	0.809	-88.2	3.262	94.8	0.115	20.4	0.889	-64.7
0.8	0.774	-100.0	3.176	83.8	0.127	10.5	0.865	-73.4
0.9	0.737	-111.6	3.064	72.8	0.140	3.2	0.838	-82.0
1.0	0.695	-123.9	2.954	61.9	0.144	-6.4	0.806	-90.6
1.1	0.656	-135.9	2.843	51.6	0.155	-15.5	0.775	-98.6
1.2	0.622	-147.4	2.760	41.1	0.162	-23.4	0.753	-106.5
1.3	0.591	-159.8	2.660	30.8	0.170	-30.9	0.726	-114.6
1.4	0.557	-171.5	2.579	21.0	0.175	-38.4	0.705	-122.4
1.5	0.528	176.8	2.491	11.1	0.178	-46.0	0.679	-130.1
1.6	0.501	164.3	2.414	1.0	0.185	-53.6	0.655	-137.7
1.7	0.477	151.6	2.333	-8.7	0.186	-61.2	0.635	-145.6
1.8	0.453	139.1	2.267	-18.1	0.191	-68.4	0.613	-153.2
1.9	0.434	126.6	2.196	-27.3	0.196	-75.6	0.594	-160.6
2.0	0.416	114.2	2.120	-37.0	0.196	-82.6	0.573	-168.1
2.1	0.400	100.9	2.060	-46.1	0.197	-89.9	0.557	-175.3
2.2	0.389	88.4	1.988	-55.7	0.199	-95.5	0.535	176.8
2.3	0.381	75.3	1.930	-64.5	0.197	-102.9	0.515	169.2
2.4	0.372	62.9	1.866	-73.7	0.200	-108.7	0.494	161.7
2.5	0.364	50.9	1.801	-82.2	0.200	-115.5	0.478	154.7
2.6	0.369	39.1	1.753	-90.6	0.203	-119.5	0.468	147.9
2.7	0.371	27.4	1.706	-99.1	0.202	-126.2	0.465	140.3
2.8	0.374	16.2	1.662	-107.7	0.204	-132.3	0.456	131.9
2.9	0.380	5.3	1.622	-115.8	0.203	-138.6	0.445	124.1
3.0	0.387	-5.7	1.575	-124.6	0.207	-144.4	0.438	115.8

V<sub>CE</sub> = 3 V, I<sub>c</sub> = 3 mA

FREQUENCY GHz	S <sub>11</sub>		S <sub>21</sub>		S <sub>12</sub>		S <sub>22</sub>	
	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.
0.1	0.897	-19.4	9.548	161.9	0.017	64.0	0.985	-13.5
0.2	0.852	-34.6	8.940	146.2	0.038	62.6	0.955	-25.7
0.3	0.811	-50.0	8.404	131.7	0.059	54.4	0.918	-37.0
0.4	0.753	-66.7	7.863	117.0	0.066	44.1	0.864	-48.0
0.5	0.693	-81.0	7.381	103.8	0.072	36.3	0.804	-58.1
0.6	0.630	-94.7	6.795	91.1	0.082	25.6	0.754	-67.8
0.7	0.572	-109.1	6.304	78.9	0.088	14.9	0.707	-76.1
0.8	0.520	-121.6	5.842	67.8	0.095	7.6	0.662	-84.3
0.9	0.477	-135.0	5.452	56.8	0.107	2.4	0.623	-92.6
1.0	0.430	-147.6	5.076	46.4	0.110	-5.0	0.587	-100.0
1.1	0.396	-160.5	4.745	36.3	0.117	-12.0	0.559	-107.5
1.2	0.364	-173.4	4.475	26.7	0.122	-18.8	0.529	-114.8
1.3	0.338	173.4	4.206	17.2	0.129	-26.4	0.504	-122.1
1.4	0.313	160.3	3.973	8.1	0.133	-32.3	0.481	-129.2
1.5	0.298	147.3	3.765	-0.9	0.137	-38.6	0.463	-136.2
1.6	0.281	133.4	3.574	-9.9	0.144	-44.6	0.443	-143.5
1.7	0.271	120.0	3.416	-18.8	0.147	-50.0	0.425	-150.7
1.8	0.262	106.3	3.252	-27.4	0.154	-56.2	0.406	-157.9
1.9	0.258	93.2	3.122	-36.0	0.159	-63.2	0.393	-165.3
2.0	0.255	80.2	2.976	-44.6	0.165	-68.0	0.376	-172.0
2.1	0.258	66.4	2.868	-52.9	0.168	-75.3	0.361	-179.6
2.2	0.260	54.1	2.743	-61.4	0.172	-81.5	0.348	173.0
2.3	0.265	42.4	2.644	-69.6	0.176	-87.4	0.334	165.3
2.4	0.275	31.1	2.548	-77.8	0.183	-93.4	0.321	157.6
2.5	0.280	19.4	2.455	-85.9	0.188	-99.6	0.308	149.7
2.6	0.293	9.2	2.380	-94.1	0.194	-104.8	0.298	141.6
2.7	0.301	-1.5	2.301	-101.8	0.198	-110.8	0.285	133.8
2.8	0.312	-11.1	2.223	-109.9	0.203	-118.0	0.274	125.6
2.9	0.324	-20.5	2.163	-117.8	0.208	-123.6	0.266	116.6
3.0	0.335	-29.5	2.090	-125.7	0.214	-129.9	0.257	108.0

V<sub>CE</sub> = 3 V, I<sub>C</sub> = 5 mA

FREQUENCY GHz	S <sub>11</sub>		S <sub>21</sub>		S <sub>12</sub>		S <sub>22</sub>	
	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.
0.1	0.826	-21.1	14.048	158.2	0.034	61.3	0.983	-15.5
0.2	0.768	-41.4	12.791	140.1	0.038	63.4	0.917	-29.2
0.3	0.698	-59.8	11.643	123.8	0.048	50.7	0.848	-42.4
0.4	0.621	-76.6	10.439	108.1	0.054	41.1	0.770	-53.7
0.5	0.550	-92.4	9.468	94.4	0.062	35.2	0.699	-63.0
0.6	0.481	-105.8	8.453	81.9	0.075	23.9	0.643	-72.1
0.7	0.424	-120.4	7.645	70.2	0.077	16.2	0.590	-79.7
0.8	0.378	-134.0	6.978	59.2	0.085	13.4	0.549	-87.0
0.9	0.337	-146.8	6.337	49.0	0.092	5.2	0.514	-94.7
1.0	0.301	-159.9	5.839	39.1	0.099	-1.0	0.484	-101.5
1.1	0.271	-173.9	5.407	29.6	0.103	-6.9	0.455	-108.4
1.2	0.248	172.7	5.042	20.6	0.112	-12.8	0.435	-114.4
1.3	0.232	159.0	4.697	11.6	0.116	-19.1	0.415	-121.9
1.4	0.217	145.0	4.423	2.9	0.124	-24.5	0.396	-128.5
1.5	0.210	131.7	4.184	-5.7	0.130	-30.4	0.383	-135.8
1.6	0.200	115.3	3.921	-14.2	0.135	-36.9	0.365	-142.3
1.7	0.200	102.9	3.724	-22.7	0.143	-43.1	0.349	-149.7
1.8	0.199	88.9	3.544	-31.1	0.152	-49.2	0.335	-156.6
1.9	0.202	75.8	3.400	-38.9	0.156	-55.4	0.322	-163.7
2.0	0.207	62.7	3.229	-47.3	0.162	-61.6	0.312	-171.0
2.1	0.216	49.7	3.095	-55.3	0.168	-68.4	0.296	-178.7
2.2	0.223	38.6	2.968	-63.7	0.174	-73.7	0.283	-173.5
2.3	0.233	28.1	2.860	-71.4	0.180	-80.5	0.272	-166.3
2.4	0.244	17.2	2.751	-79.4	0.187	-87.0	0.261	-158.1
2.5	0.254	6.4	2.652	-87.3	0.193	-92.9	0.247	-149.5
2.6	0.266	-2.5	2.567	-95.1	0.199	-99.3	0.238	-141.5
2.7	0.281	-11.9	2.471	-102.7	0.206	-105.5	0.228	-132.0
2.8	0.290	-20.6	2.392	-110.5	0.212	-112.9	0.221	-123.1
2.9	0.301	-29.6	2.321	-118.3	0.218	-118.4	0.209	-114.6
3.0	0.317	-37.3	2.251	-125.9	0.225	-125.7	0.203	-104.7

V<sub>CE</sub> = 3 V, I<sub>C</sub> = 10 mA

FREQUENCY GHz	S <sub>11</sub>		S <sub>21</sub>		S <sub>12</sub>		S <sub>22</sub>	
	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.
0.1	0.733	-29.0	21.168	152.6	0.019	22.5	0.956	-19.9
0.2	0.629	-52.2	18.320	130.8	0.033	55.6	0.842	-36.2
0.3	0.531	-73.1	15.647	112.6	0.046	47.9	0.739	-49.3
0.4	0.433	-91.9	13.294	96.9	0.046	38.3	0.638	-59.6
0.5	0.368	-107.2	11.506	83.8	0.049	39.7	0.564	-67.2
0.6	0.314	-122.4	9.992	71.9	0.065	28.2	0.514	-74.7
0.7	0.270	-137.0	8.802	61.3	0.068	23.4	0.469	-80.8
0.8	0.237	-152.3	7.864	51.2	0.073	15.0	0.432	-87.6
0.9	0.210	-165.9	7.091	41.6	0.085	11.8	0.408	-94.1
1.0	0.188	178.6	6.459	32.4	0.090	6.1	0.386	-99.7
1.1	0.171	163.3	5.944	23.5	0.095	0.4	0.368	-106.8
1.2	0.160	148.5	5.495	15.0	0.108	-6.2	0.352	-113.0
1.3	0.160	133.4	5.104	6.4	0.110	-12.2	0.337	-119.9
1.4	0.153	117.1	4.780	-1.8	0.116	-18.5	0.323	-126.2
1.5	0.158	102.8	4.493	-9.9	0.123	-25.1	0.309	-133.5
1.6	0.163	89.3	4.226	-18.5	0.133	-30.2	0.298	-140.5
1.7	0.168	76.9	4.010	-26.2	0.142	-37.7	0.286	-148.0
1.8	0.175	64.2	3.788	-34.4	0.147	-42.9	0.277	-155.0
1.9	0.186	52.7	3.622	-41.8	0.150	-50.5	0.264	-162.5
2.0	0.196	41.6	3.433	-50.0	0.162	-56.5	0.253	-169.5
2.1	0.209	30.7	3.296	-57.9	0.168	-63.1	0.241	-177.5
2.2	0.220	20.8	3.152	-65.9	0.176	-69.6	0.230	-174.4
2.3	0.231	11.5	3.031	-73.5	0.180	-75.9	0.217	-166.3
2.4	0.245	2.5	2.913	-81.1	0.189	-82.3	0.209	-158.1
2.5	0.258	-6.2	2.803	-88.9	0.197	-89.4	0.197	-148.9
2.6	0.270	-14.0	2.711	-96.4	0.203	-96.1	0.188	-139.2
2.7	0.284	-22.6	2.615	-104.1	0.212	-101.9	0.177	-130.3
2.8	0.293	-30.2	2.529	-111.6	0.216	-108.9	0.172	-121.0
2.9	0.305	-38.8	2.453	-119.2	0.222	-115.3	0.161	-110.5
3.0	0.321	-45.8	2.367	-126.8	0.232	-122.2	0.154	-100.0

**S-PARAMETERS Q2**

V<sub>CE</sub> = 3 V, I<sub>c</sub> = 1 mA

FREQUENCY GHz	S <sub>11</sub>		S <sub>21</sub>		S <sub>12</sub>		S <sub>22</sub>	
	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.
0.1	0.970	-13.8	4.079	166.5	0.029	51.6	1.002	-9.5
0.2	0.946	-25.9	3.922	153.7	0.040	68.9	0.984	-19.3
0.3	0.926	-38.7	3.809	142.2	0.053	60.3	0.974	-29.0
0.4	0.902	-51.6	3.696	129.7	0.069	49.1	0.960	-38.3
0.5	0.878	-64.1	3.620	117.8	0.088	40.2	0.931	-47.3
0.6	0.847	-76.1	3.484	106.0	0.101	30.8	0.906	-56.1
0.7	0.802	-88.4	3.363	94.4	0.112	22.0	0.880	-64.7
0.8	0.769	-100.4	3.229	83.4	0.122	12.2	0.850	-73.5
0.9	0.737	-112.0	3.120	72.5	0.137	3.4	0.824	-82.0
1.0	0.700	-123.5	3.018	62.0	0.141	-4.9	0.794	-90.0
1.1	0.664	-135.2	2.897	51.5	0.151	-12.8	0.767	-98.2
1.2	0.633	-146.6	2.810	41.3	0.156	-21.6	0.738	-105.9
1.3	0.606	-158.3	2.706	31.3	0.164	-30.1	0.716	-113.9
1.4	0.574	-169.4	2.617	21.6	0.168	-37.7	0.690	-121.2
1.5	0.545	-179.3	2.519	11.9	0.173	-45.0	0.665	-129.1
1.6	0.526	167.4	2.445	1.9	0.179	-51.8	0.642	-136.5
1.7	0.500	156.0	2.361	-7.5	0.182	-58.7	0.623	-144.4
1.8	0.479	144.8	2.291	-16.5	0.184	-65.7	0.601	-151.9
1.9	0.464	133.0	2.224	-25.9	0.188	-73.4	0.580	-159.2
2.0	0.445	121.5	2.152	-35.1	0.192	-79.5	0.568	-166.5
2.1	0.428	109.3	2.091	-44.2	0.191	-87.0	0.543	-173.5
2.2	0.418	98.5	2.028	-53.4	0.194	-92.4	0.532	178.7
2.3	0.408	87.2	1.970	-62.0	0.196	-99.0	0.511	171.2
2.4	0.401	75.6	1.916	-70.8	0.197	-105.2	0.498	163.5
2.5	0.392	64.4	1.862	-79.5	0.200	-111.9	0.482	155.8
2.6	0.393	52.9	1.814	-88.1	0.202	-117.3	0.469	147.8
2.7	0.388	42.2	1.763	-96.8	0.204	-122.7	0.456	139.9
2.8	0.387	32.0	1.715	-105.1	0.207	-129.6	0.444	132.4
2.9	0.385	21.2	1.671	-113.3	0.207	-135.3	0.430	124.4
3.0	0.387	10.9	1.628	-121.8	0.210	-140.8	0.421	116.1

V<sub>CE</sub> = 3 V, I<sub>c</sub> = 3 mA

FREQUENCY GHz	S <sub>11</sub>		S <sub>21</sub>		S <sub>12</sub>		S <sub>22</sub>	
	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.
0.1	0.884	-18.2	9.862	161.4	0.025	51.3	0.990	-13.2
0.2	0.854	-34.8	9.160	145.9	0.033	71.8	0.950	-25.5
0.3	0.811	-50.9	8.603	131.2	0.056	47.3	0.914	-37.0
0.4	0.747	-66.6	8.001	116.6	0.057	44.8	0.853	-48.2
0.5	0.695	-81.2	7.497	103.4	0.075	36.0	0.798	-58.0
0.6	0.631	-94.9	6.889	90.5	0.083	28.0	0.739	-66.8
0.7	0.575	-108.5	6.360	78.5	0.087	18.2	0.692	-75.3
0.8	0.531	-121.2	5.887	67.6	0.099	9.6	0.648	-83.3
0.9	0.484	-133.6	5.475	57.0	0.102	1.8	0.609	-91.3
1.0	0.449	-145.6	5.118	46.6	0.106	-3.9	0.574	-98.2
1.1	0.414	-158.0	4.781	36.7	0.113	-9.9	0.543	-105.7
1.2	0.386	-169.8	4.498	27.2	0.121	-18.4	0.516	-112.7
1.3	0.362	178.3	4.232	17.9	0.127	-22.6	0.493	-119.6
1.4	0.339	166.5	4.008	8.9	0.131	-29.9	0.468	-126.5
1.5	0.324	154.5	3.795	-0.1	0.135	-35.5	0.448	-133.2
1.6	0.309	142.0	3.602	-9.0	0.141	-41.7	0.429	-140.5
1.7	0.301	130.0	3.440	-17.7	0.149	-48.2	0.413	-147.4
1.8	0.286	118.9	3.274	-25.9	0.150	-54.2	0.392	-153.8
1.9	0.280	106.7	3.143	-34.6	0.157	-59.9	0.379	-160.8
2.0	0.277	94.6	3.014	-43.0	0.162	-65.5	0.364	-167.8
2.1	0.274	82.5	2.893	-51.3	0.166	-73.1	0.346	-174.6
2.2	0.273	71.2	2.788	-59.7	0.174	-78.3	0.334	177.5
2.3	0.276	60.5	2.685	-67.7	0.178	-84.6	0.319	170.4
2.4	0.276	49.5	2.587	-75.9	0.182	-90.5	0.305	163.3
2.5	0.279	38.2	2.502	-83.9	0.189	-96.3	0.292	155.4
2.6	0.287	28.6	2.423	-91.9	0.193	-102.4	0.279	147.8
2.7	0.289	17.9	2.350	-99.9	0.201	-108.7	0.267	139.4
2.8	0.297	8.4	2.273	-107.8	0.207	-115.0	0.257	131.4
2.9	0.303	-0.8	2.208	-115.5	0.210	-120.8	0.243	123.9
3.0	0.313	-10.1	2.145	-123.3	0.220	-127.3	0.235	114.8

V<sub>CE</sub> = 3 V, I<sub>C</sub> = 5 mA

FREQUENCY GHz	S <sub>11</sub>		S <sub>21</sub>		S <sub>12</sub>		S <sub>22</sub>	
	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.
0.1	0.844	-22.4	13.863	158.4	0.032	25.1	0.989	-16.2
0.2	0.781	-41.1	12.602	140.6	0.032	63.4	0.916	-29.6
0.3	0.714	-58.5	11.489	124.4	0.046	50.1	0.846	-42.4
0.4	0.635	-76.3	10.332	108.8	0.057	42.6	0.775	-53.2
0.5	0.573	-91.3	9.395	95.1	0.062	33.1	0.696	-62.8
0.6	0.506	-105.5	8.394	82.7	0.072	28.2	0.642	-71.0
0.7	0.454	-119.5	7.618	71.0	0.077	18.4	0.591	-78.8
0.8	0.406	-132.3	6.913	60.0	0.084	10.4	0.548	-85.6
0.9	0.371	-144.2	6.330	50.2	0.093	8.1	0.512	-92.9
1.0	0.340	-156.8	5.828	40.4	0.099	-0.7	0.480	-99.8
1.1	0.310	-169.6	5.402	30.8	0.102	-5.6	0.453	-106.5
1.2	0.286	179.3	5.038	21.9	0.108	-12.4	0.429	-112.6
1.3	0.273	166.3	4.710	12.9	0.116	-17.8	0.411	-119.6
1.4	0.257	154.4	4.429	4.3	0.120	-24.7	0.391	-125.9
1.5	0.248	141.9	4.176	-4.2	0.130	-29.9	0.373	-132.9
1.6	0.238	129.3	3.957	-12.9	0.133	-36.7	0.355	-138.9
1.7	0.236	117.4	3.764	-21.2	0.141	-42.0	0.340	-146.5
1.8	0.232	105.0	3.582	-29.4	0.146	-48.4	0.329	-152.7
1.9	0.233	93.6	3.431	-37.6	0.154	-54.6	0.314	-159.6
2.0	0.229	81.8	3.262	-45.5	0.162	-60.1	0.301	-166.4
2.1	0.233	69.7	3.133	-53.7	0.165	-67.4	0.284	-173.4
2.2	0.236	59.9	3.007	-61.9	0.174	-72.8	0.272	-179.8
2.3	0.242	48.8	2.896	-69.6	0.180	-79.0	0.255	-171.7
2.4	0.246	38.0	2.793	-77.6	0.185	-85.5	0.246	-165.3
2.5	0.250	28.1	2.688	-85.3	0.191	-92.6	0.234	-157.2
2.6	0.262	18.8	2.606	-93.3	0.199	-98.4	0.222	-149.1
2.7	0.271	8.8	2.530	-101.1	0.205	-104.1	0.211	-140.4
2.8	0.279	0.1	2.447	-108.7	0.212	-111.3	0.201	-132.6
2.9	0.289	-9.4	2.366	-116.8	0.217	-117.1	0.187	-124.7
3.0	0.299	-17.6	2.298	-124.2	0.224	-123.5	0.181	-115.3

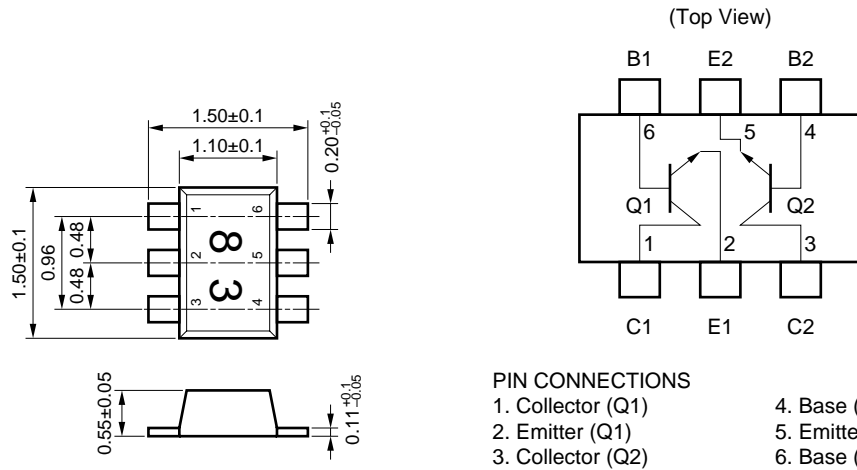
V<sub>CE</sub> = 3 V, I<sub>C</sub> = 10 mA

FREQUENCY GHz	S <sub>11</sub>		S <sub>21</sub>		S <sub>12</sub>		S <sub>22</sub>	
	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.	MAG.	ANG.
0.1	0.722	-28.8	21.436	152.5	0.023	23.1	0.955	-21.3
0.2	0.625	-52.9	18.522	130.8	0.036	60.5	0.836	-36.4
0.3	0.535	-73.7	15.755	112.8	0.038	46.3	0.726	-49.2
0.4	0.443	-91.6	13.325	97.0	0.047	41.9	0.630	-58.7
0.5	0.388	-108.2	11.605	83.9	0.052	33.9	0.555	-66.8
0.6	0.330	-121.2	10.044	72.5	0.062	32.8	0.506	-73.1
0.7	0.291	-136.6	8.855	61.4	0.066	21.3	0.461	-79.8
0.8	0.263	-149.1	7.909	51.6	0.075	15.9	0.424	-85.8
0.9	0.236	-162.4	7.131	42.3	0.083	12.1	0.402	-91.8
1.0	0.215	-175.4	6.521	33.2	0.088	7.1	0.375	-97.2
1.1	0.205	171.2	5.982	24.4	0.095	0.2	0.356	-103.4
1.2	0.194	157.8	5.546	15.9	0.102	-5.7	0.337	-109.3
1.3	0.187	145.7	5.160	7.6	0.110	-10.8	0.323	-116.2
1.4	0.182	133.0	4.823	-0.6	0.116	-18.0	0.308	-121.3
1.5	0.183	120.7	4.518	-8.8	0.123	-23.1	0.299	-128.5
1.6	0.182	108.1	4.283	-16.8	0.128	-30.1	0.281	-134.7
1.7	0.185	97.0	4.049	-24.7	0.140	-35.9	0.271	-142.0
1.8	0.188	85.5	3.842	-32.6	0.145	-41.3	0.259	-148.0
1.9	0.196	74.2	3.670	-40.4	0.151	-48.9	0.246	-154.8
2.0	0.202	64.0	3.508	-48.5	0.160	-55.0	0.234	-161.9
2.1	0.207	53.0	3.356	-56.2	0.167	-62.4	0.222	-168.6
2.2	0.215	43.4	3.207	-64.3	0.173	-68.3	0.210	-175.6
2.3	0.225	34.3	3.092	-71.8	0.182	-74.4	0.195	-176.5
2.4	0.233	24.5	2.977	-79.4	0.189	-81.1	0.187	-169.8
2.5	0.240	15.2	2.869	-87.0	0.195	-87.5	0.173	-161.8
2.6	0.254	6.7	2.764	-94.8	0.202	-94.5	0.161	-152.6
2.7	0.263	-1.8	2.669	-102.3	0.209	-100.5	0.150	-144.6
2.8	0.274	-10.0	2.587	-109.9	0.218	-107.5	0.140	-136.2
2.9	0.282	-18.0	2.507	-117.3	0.223	-113.3	0.124	-128.6
3.0	0.292	-26.1	2.432	-125.0	0.231	-120.3	0.119	-118.4



PACKAGE DIMENSIONS

FLAT-LEAD 6 PIN THIN-TYPE ULTRA SUPER MINIMOLD (UNIT: mm)



[MEMO]

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