

PRELIMINARY DATA SHEET

<p>SPT 3571 HIGH FREQUENCY TRANSISTOR NPN</p>	<p>SSDI X00212</p>
	<p>14830 VALLEY VIEW LA MIRADA, CA. 90638 (213)921-9660 TWX 910-583-4807 FAX 213-921-2396</p>

CASE STYLE

TO-72

FEATURES

- ▶ 900 MHz f_T MIN, 4 GHz f_T MAX
- ▶ GOLD EUTECTIC DIE ATTACH
- ▶ LOW NOISE FIGURE < 4 dB

MAXIMUM RATINGS

RATING	SYMBOL	VALUE	UNIT
Collector-Emitter Voltage Applicable 1.0 to 2.0 mA _{dc}	V _{CEO}	15	V _{dc}
Collector-Base Voltage	V _{CB0}	25	V _{dc}
Emitter-Base Voltage	V _{EB0}	3	V _{dc}
Collector Current	I _C	50	mA _{dc}
Total Device Dissipation @ T _A = 25°C Derate above 25°C	PD	200 1.14 :	mW mW/°C
Total Device Dissipation @ T _C = 25°C Derate above 25°C	PD	300 1.71	mW mW/°C
Storage Temperature	T _{stg}	-65 to +200	°C

ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MIN	MAX	UNIT
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage (I _C = 3.0 mA _{dc} , I _B = 0)	V _{CEO(sus)}	15	--	V _{dc}
Collector-Base Breakdown Voltage (I _C = 0.001 mA _{dc} , I _E = 0)	V(BR)C _{B0}	25	--	V _{dc}
Emitter-Base Breakdown Voltage (I _E = 0.01 mA _{dc} , I _C = 0)	V(BR)E _{B0}	3	--	V _{dc}
Collector Cutoff Current (V _{CB} = 6 V _{dc} , I _E = 0) (V _{CB} = 6 V _{dc} , I _E = 0, T _A = 150°C)	I _{CB0}	-- --	0.01 1.0	uA _{dc}

ELECTRICAL CHARACTERISTICS Cont'd

CHARACTERISTIC	SYMBOL	MIN	MAX	UNIT
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SMALL SIGNAL CHARACTERISTICS

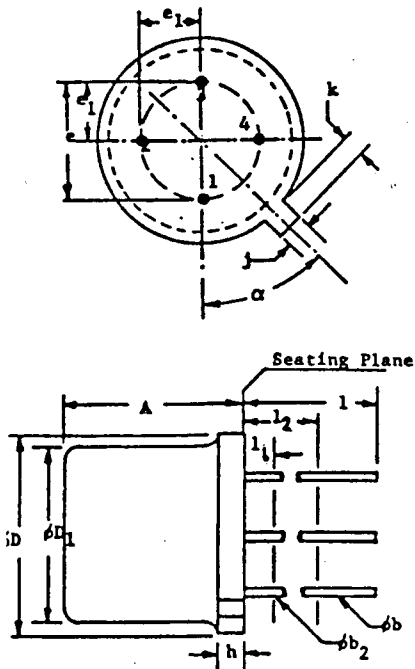
Current Gain - Bandwidth Product (1) ($I_C=5.0\text{mA}$, $V_{CE}=6.0\text{V}$, $f=100\text{MHz}$)	f_T	900	4000	MHz
Collector-Base Capacitance ($V_{CB} = 10\text{V}$, $I_E=0$, $f=0.1$ to 1.0MHz)	C_{cb}	--	.85	pF
Small Signal Current Gain ($I_C=2.0\text{mA}$, $V_{CB}=6.0\text{V}$, $f=1.0\text{kHz}$)	h_{fe}	25	300	--
Collector Base Time Constant ($I_E=2.0\text{mA}$, $V_{CB}=6.0\text{V}$, $f=79.8\text{MHz}$)	$r_b'C_c$	1.0	10.0	ps
Noise Figure (Figure) ($I_C=1.5\text{mA}$, $V_{CE}=6.0\text{V}$, $R_S=50\text{ohms}$,	NF	--	4.0	dB

FUNCTIONAL TEST

Common-Emitter Amplifier Power Gain ($V_{CE}=6.0\text{V}$, $I_C=5.0\text{mA}$, $f=200\text{MHz}$)	G_{pe}	15	--	dB
Power Output (Figure) ($V_{CB} = 10\text{V}$, $I_E=0$, $f=0.1$ to 1.0MHz)	P_{out}	20	--	dB

(1) f_T is defined as the frequency at which h_{fe} extrapolates to unity.

PHYSICAL DIMENSIONS:



SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	.170	.210	4.32	5.33	
ϕb	.016	.021	.406	.533	2
ϕb_2	.016	.019	.406	.483	2
ϕD	.209	.230	5.31	5.84	
ϕD_1	.178	.195	4.52	4.95	
e	.100 T.P.		2.54 T.P.		4
e_1	.050 T.P.		1.27 T.P.		4
h		.030		.762	
j	.036	.046	.914	1.17	
k	.028	.048	.711	1.22	3
l	.500		12.70		2
l_1		.050		1.27	2
l_2	.250		6.35		2
α	45° T.P.		45° T.P.		4, 6

SSDI

SOLID STATE DEVICES, INC.

P.O. BOX 577, LA MIRADA, CA. 90637

Telephone: (213) 921-9660 ♦ TWX 910-583-4807 ♦ FAX 213-921-2396

FIGURE 1 - CURRENT-GAIN-BANDWIDTH PRODUCT

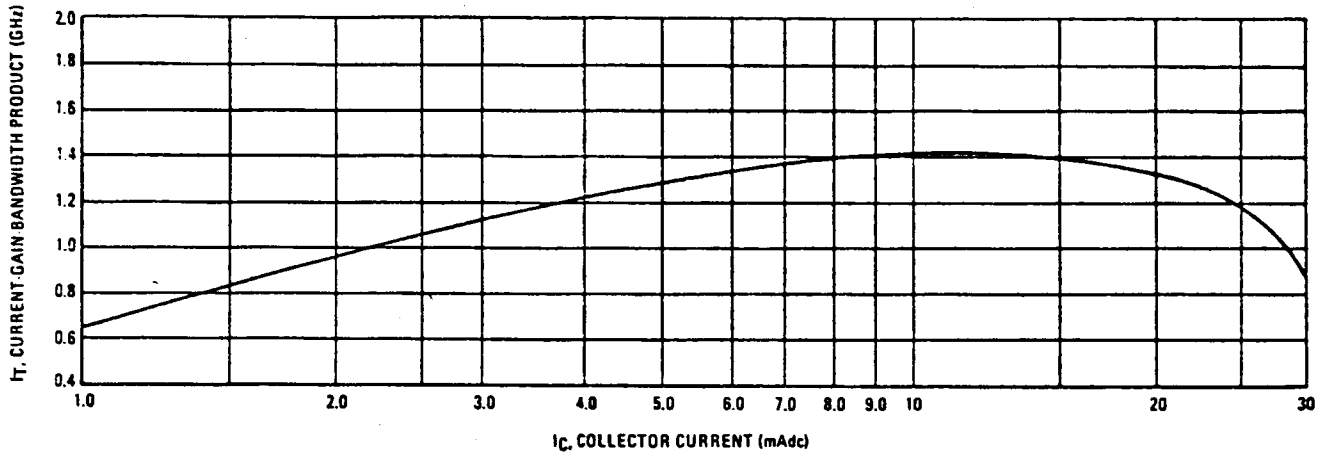


FIGURE 2 - INPUT ADMITTANCE versus FREQUENCY

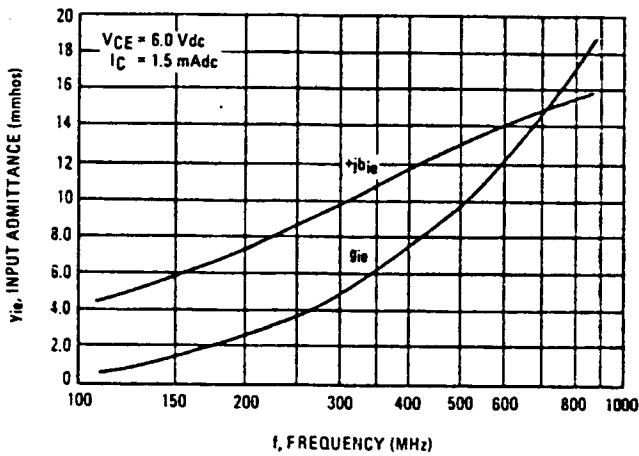


FIGURE 3 - OUTPUT ADMITTANCE versus FREQUENCY

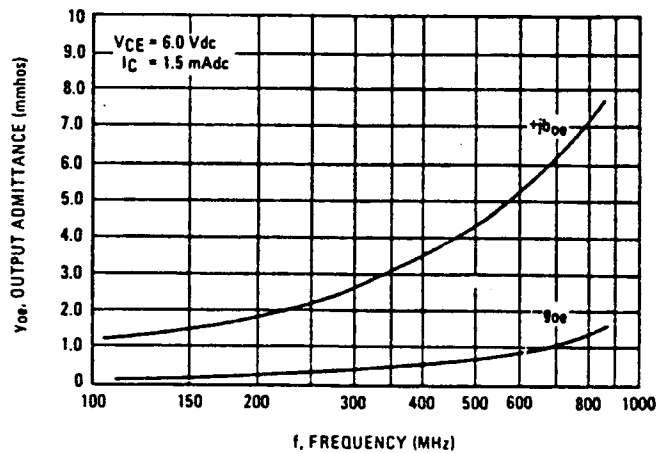


FIGURE 4 - FORWARD TRANSFER ADMITTANCE versus FREQUENCY

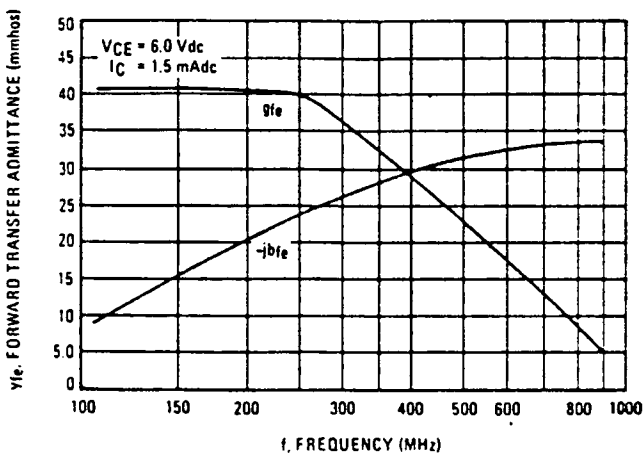


FIGURE 5 - REVERSE TRANSFER ADMITTANCE versus FREQUENCY

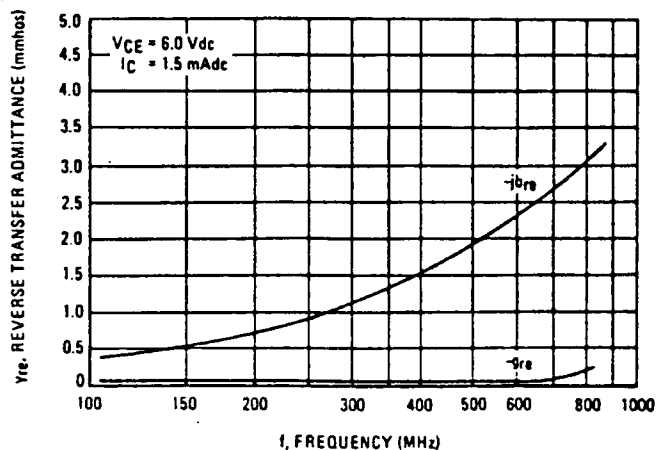


FIGURE 6 - INPUT REFLECTION COEFFICIENT
AND S22 OUTPUT REFLECTION COEFFICIENT

