

THN5702F DC/AC Characteristics

Tachyonics Co., Ltd

DC Characteristics

Items	Condition	THN5702F	Unit
V_{FBE}	$I_B=10\text{mA}$	0.83	V
BV_{EBO}	$I_E=10\mu\text{A}$	<i>1.41 ~ 1.48</i>	V
	$I_E=100\mu\text{A}$	<i>1.89 ~ 1.94</i>	V
BV_{CBO}	$I_C=100\mu\text{A}$	<i>32.0</i>	V
BV_{CEO}	$I_C=100\mu\text{A}$	13	V
	$I_C=1\text{mA}$	13	V
h_{FE}	$V_{CE}=4.5\text{V}, I_C=300\text{mA}$	<i>75 ~ 80</i>	
C_C	$V_{CB}=4.5\text{V}, I_E=0, f=1\text{MHz}$	<i>6.3</i>	pF

AC (S-PARAMETER) Characteristics

Items	Condition		THN5702F	Unit	
	Frequency	DC BIAS	Value		
S11	f=450MHz	VCE=4.5V, Ic=400mA	0.958/170.0	[Mag/Ang]	
	f=900MHz		0.959/158.3		
	f=450MHz	VCE=6.0V, Ic=400mA	0.957/170.0		
	f=900MHz		0.957/158.3		
S21 ²	f=450MHz	VCE=4.5V, Ic=400mA	5.5	dB	
	f=900MHz		0.0		
	f=450MHz	VCE=6.0V, Ic=400mA	6.1		
	f=900MHz		0.6		
S12 ²	f=450MHz	VCE=4.5V, Ic=400mA	-34.8	dB	
	f=900MHz		-30.5		
	f=450MHz	VCE=6.0V, Ic=400mA	-34.7		
	f=900MHz		-30.5		
S22	f=450MHz	VCE=4.5V, Ic=400mA	0.873/173.2	[Mag/Ang]	
	f=900MHz		0.865/163.5		
	f=450MHz	VCE=6.0V, Ic=400mA	0.865/172.7		
	f=900MHz		0.855/163.0		
MAG	f=450MHz	VCE=4.5V, Ic=400mA	20.2	dB	
	f=900MHz		13.4		
	f=450MHz	VCE=6.0V, Ic=400mA	20.4		
	f=900MHz		13.7		

POWER Characteristics (I)

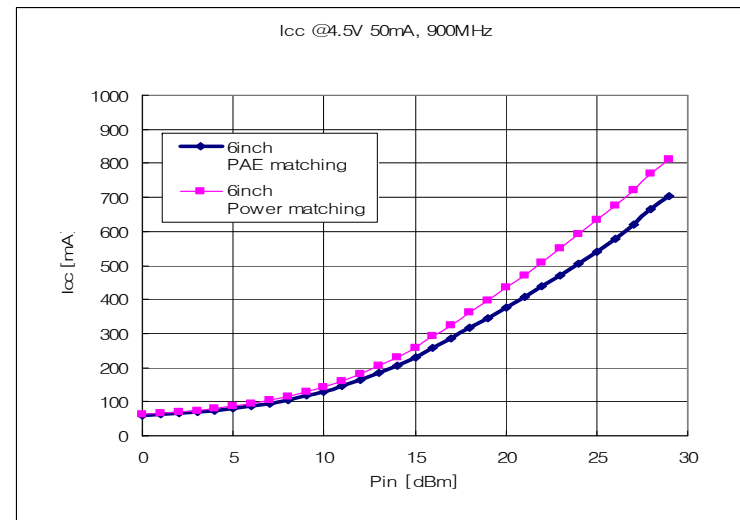
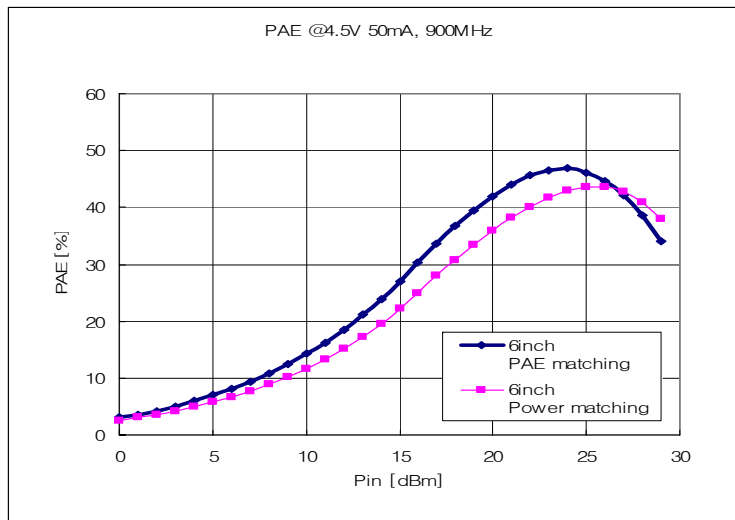
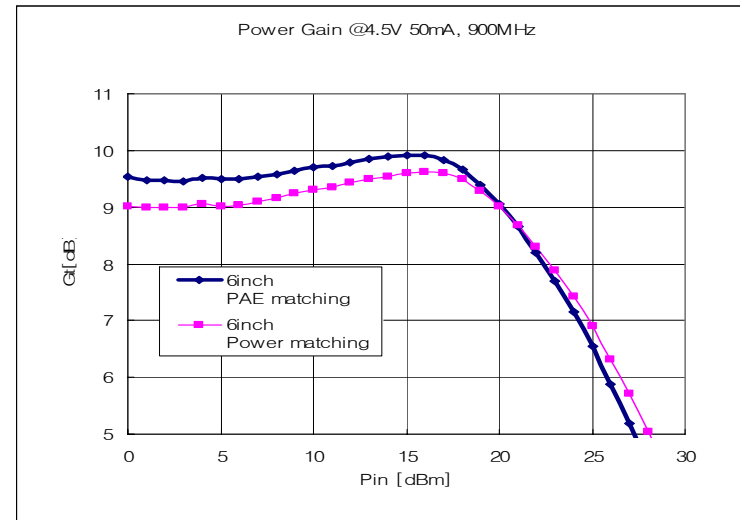
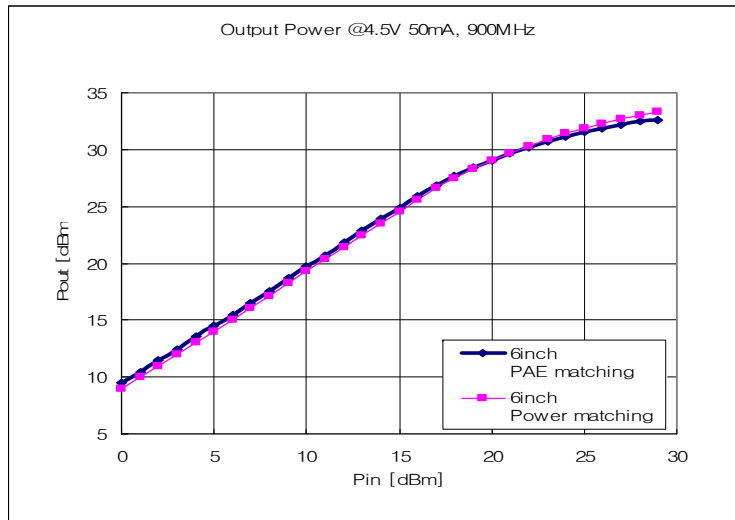
Selection	Test Condition		Items	THN5702F ($Z_s=2.57-j9.81$, $Z_L=6.83-j4.92$)	Unit
ATS Power	900MHz, $V_{cc}=4.5V$, $I_{cq}=50mA$.	Pin=20dBm	Pout	29.1	dBm
			Gt	9.1	dB
			PAE	42.0	%
			Icc	376	mA
			Reflect	-11	dB
		Pin=29dBm	Pout	32.6	dBm
			Gt	2.6	dB
			PAE	34.1	%
			Icc	705	mA
			Reflect	-13	dB

POWER Characteristics (II)

Selection	Test Condition		Items	THN5702F ($Z_s=2.57-j9.81$, $Z_L=6.83-j4.92$)	Unit
ATS Power	900MHz, $V_{cc}=6.0V$, $I_{cq}=50mA$.	Pin=20dBm	Pout	30.1	dBm
			Gt	10.1	dB
			PAE	41.5	%
			Icc	373	mA
			Reflect	-12	dB
		Pin=30dBm	Pout	34.0	dBm
			Gt	4.0	dB
			PAE	39.9	%
			Icc	733	mA
			Reflect	-14	dB

Power Characteristics – $V_{CC}=4.5V$, $I_{CCQ}=50mA$, $f=900MHz$

➤ Source / Load Pull by ATS



Power Characteristics – VCC=6.0V, ICCQ=50mA, f=900MHz

➤ Source / Load Pull by ATS

