



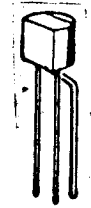
TIS 97 TIS 98

NPN SILICON PLANAR EPITAXIAL TRANSISTORS



CASE T0-92 F

THE TIS97 AND TIS98 ARE LOW NOISE NPN SILICON PLANAR EPITAXIAL TRANSISTORS FOR USE IN HI-FI AUDIO AMPLIFIERS AND GENERAL PURPOSE LOW FREQUENCY APPLICATIONS.



CEB

ABSOLUTE MAXIMUM RATINGS

		TIS97	TIS98
Collector-Base Voltage	VCBO	60V	80V
Collector-Emitter Voltage	VCEO	40V	60V
Emitter-Base Voltage	VEBO	6V	6V
Collector Current	IC	200mA	200mA
Total Power Dissipation @ TA ≤ 25°C	Ptot	360mW	
@ TC ≤ 25°C		500mW	
Operating Junction & Storage Temperature	Tj, Tstg	-65 to 150°C	

ELECTRICAL CHARACTERISTICS @ TA=25°C

PARAMETER	SYMBOL	TIS97		TIS98		UNIT	TEST CONDITIONS
		MIN	TYP MAX	MIN	TYP MAX		
Collector-Emitter Breakdown Voltage	BVCEO	40		60		V	IC=10mA IB=0
Collector Cutoff Current	ICBO		10		10	nA	VCB=40V IE=0
			10		10	µA	VCB=60V IE=0
Emitter Cutoff Current	IEBO		20		20	nA	VCB=80V IE=0
						µA	VEB=6V IC=0
Collector-Emitter Saturation Voltage	VCE(sat)*			0.5		V	IC=100mA IB=5mA
Collector-Emitter Voltage	VCE *				1	V	IC=10mA IB=0.1mA
Base-Emitter Voltage	VBE *	0.45	0.65			V	IC=100µA VCE=5V
				0.5	0.7	V	IC=1mA VCE=5V
D.C. Current Gain	HFE *	250	700				IC=100µA VCE=5V
				100	300		IC=1mA VCE=5V

* Pulse Test : Pulse Width=0.3mS, Duty Cycle=1%

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1-2.Bmp

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PARAMETER	SYMBOL	TIS97			TIS98			UNIT	TEST CONDITIONS
		MIN	TYP	MAX	MIN	TYP	MAX		
Collector-Base Capacitance	C _{cb}	1		4	1		4	pF	V _{CB} =5V I _E =0 f=1MHz
Emitter-Base Capacitance	C _{eb}			16			16	pF	V _{EB} =0.5V I _E =0 f=1MHz
Input Impedance	h _{ie}	115				6.4		KΩ	I _C =100μA V _{CE} =5V f=1kHz
								KΩ	I _C =1mA V _{CE} =5V f=1kHz
Small Signal Current Gain	h _{fe}	250	800				100	400	I _C =100μA V _{CE} =5V f=1kHz
									I _C =1mA V _{CE} =5V f=1kHz
Voltage Feedback Ratio	h _{re}	30x 10 ⁻⁴					1.5x 10 ⁻⁴		I _C =100μA V _{CE} =5V f=1kHz
									I _C =1mA V _{CE} =5V f=1kHz
Output Admittance	h _{oe}	11						μV	I _C =100μA V _{CE} =5V f=1kHz
								μV	I _C =1mA V _{CE} =5V f=1kHz
Forward Transfer Admittance	y _{fe}	3.8						mS	I _C =100μA V _{CE} =5V f=1kHz
								mS	I _C =1mA V _{CE} =5V f=1kHz
Forward Current Transfer Ratio	h _{fe}	2			2				I _C =10mA V _{CE} =5V f=100MHz
Spot Noise Figure	NF			2					I _C =30μA V _{CE} =5V R _G =10KΩ f=1kHz BW=100Hz
Average Noise Figure	\overline{NF}			3					I _C =100μA V _{CE} =5V R _G =10KΩ BW=15.7kHz

TIS97 #2

2-2-BMP