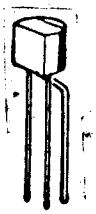
TIS 97 TIS 98

NPN SILICON PLANAR EPITAXIAL TRANSISTORS

MICRO ELECTRONICS

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.

CASE TO-92 F



CEB

ABSOLUTE MAXIMUM RATINGS		TIS97	TIS98
Collector-Base Voltage	V_{CBO}	60V	80V
Collector-Emitter Voltage	V_{CEO}	40V	60V
Emitter-Base Voltage	V_{EBO}	6V	6V
Collector Current	I_C	200mA	200mA
Total Power Dissipation @ $T_A \leq 25^oC$	P_{tot}	360mW	
@ $T_C \leq 25^oC$		500mW	
Operating Junction & Storage Temperature	T_j, T_{stg}	-65 to 150°C	

ELECTRICAL CHARACTERISTICS @ $T_{A=25^oC}$

PARAMETER	SYMBOL	TIS97 MIN	TIS97 TYP	TIS97 MAX	TIS98 MIN	TIS98 TYP	TIS98 MAX	UNIT	TEST CONDITIONS
Collector-Emitter Breakdown Voltage	BV_{CEO}	40			60			V	I_C=10mA I_B=0
Collector Cutoff Current	I_{CBO}			10			10	nA	V_{CB}=40V I_E=0
				10				μA	V_{CB}=60V I_E=0
							10	μA	V_{CB}=80V I_E=0
Emitter Cutoff Current	I_{EBO}			20			20	nA	V_{EB}=6V I_C=0
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$*						0.5	V	I_C=100mA I_B=5mA
Collector-Emitter Voltage	V_{CE} *						1	V	I_C=10mA I_B=0.1mA
Base-Emitter Voltage	V_{BE} *	0.45		0.65				V	I_C=100μA V_{CE}=5V
					0.5		0.7	V	I_C=1mA V_{CE}=5V
D.C. Current Gain	H_{FE} *	250		700					I_C=100μA V_{CE}=5V
					100		300		I_C=1mA V_{CE}=5V

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

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1-2.Bmp

PARAMETER	SYMBOL	TIS97 MIN	TIS97 TYP	TIS97 MAX	TIS98 MIN	TIS98 TYP	TIS98 MAX	UNIT	TEST CONDTIONS
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					KΩ	I_C=100μA V_{CE}=5V f=1kHz
						6.4		KΩ	I_C=1mA V_{CE}=5V f=1kHz
Small Signal Current Gain	h_{fe}	250		800					I_C=100μA V_{CE}=5V f=1kHz
					100		400		I_C=1mA V_{CE}=5V f=1kHz
Voltage Feedback Ratio	h_{re}		30x 10^{-4}						I_C=100μA V_{CE}=5V f=1kHz
						1.5x 10^{-4}			I_C=1mA V_{CE}=5V f=1kHz
Output Admittance	h_{oe}		11					μU	I_C=100μA V_{CE}=5V f=1kHz
						6		μU	I_C=1mA V_{CE}=5V f=1kHz
Forward Transfer Admittance	y_{fe}		3.8					mU	I_C=100μA V_{CE}=5V f=1kHz
						38		mU	IC=1mA V_{CE}=5V f=1kHz
Forward Current Transfer Ratio	$\lvert h_{fe} \rvert$	2			2				I_C=10mA V_{CE}=5V f=100MHz
Spot Noise Figure	NF			2		-		dB	I_C=30μA V_{CE}=5V R_G=10KΩ f=1kHz BW=100Hz
Average Noise Figure	$\overline{NF}$			3		-		dB	I_C=100μA V_{CE}=5V R_G=10KΩ BW=15.7kHz