PRODUCT SPECIFICATIONS

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TYPE: IT131

CASE OUTLINE: TO-78

PNP SILICON DUAL DIFFERENTIAL TRANSISTOR

ABSOLUTE MAXIMUM RATING:

Collector to Base	BV_{CBO}	45	Vdc
Emitter to Base	BV_{EBO}	7.0	Vdc
Collector to Emitter	BV_{CEO}	45	Vdc
Collector Current	I_C	50	mAdc
Power Dissipation T_A = 25 °C	P_D		Watts
Power Dissipation T_C = 25 °C	P_D	0.75 (Both Sides)	Watts
Storage Temperature	T_{stg}	-65 to +200	°C
Operating Temperature	T_J	-65 to +200	°C
Lead Temperature From Case	T_L		°C

ELECTRICAL CHARACTERISTICS TA @ 25 °C

PARAMETERS	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector to Collector Voltage	BV_{CCO}		60			Vdc
Emitter to Base Voltage	BV_{EBO}					Vdc
Collector to Emitter Voltage	$BV_{CEO(sus)}$	I_C=1.0mA	45			Vdc
Collector to Emitter Voltage	BV_{CEO}					Vdc
Collector Cutoff Current	I_{CBO}	V_{CB}=45V			1.0	nA
Collector Cutoff Current	I_{CBO}	V_{CB}=45V, T_A=150°C			10	µA
Collector Cutoff Current	I_{CEX}					µA
Collector Cutoff Current	I_{CEX}					µA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5.0V			1.0	nA
D.C. Current Gain Pulsed*	h_{FE}	I_C=10µA, V_{CE}=5.0V	80			-
D.C. Current Gain Pulsed*	h_{FE}	I_C=1.0mA, V_{CE}=5.0V	100			-
D.C. Current Gain Pulsed*	h_{FE}	I_C=10µA, V_{CE}=5.0V, T_A= -55°C	30			-
D.C. Current Gain Pulsed*	h_{FE}					-
D.C. Current Gain Pulsed*	h_{FE}					-
Saturation Voltage*	$V_{CE(sat)}$	I_C=0.5mA, I_B=0.05mA			0.5	Vdc
Saturation Voltage*	$V_{CE(sat)}$					Vdc
Base Emitter Voltage*	$V_{BE(sat)}$					Vdc
Base Emitter Voltage*	$V_{BE(sat)}$					Vdc
Base Emitter Voltage*	$V_{BE(on)}$	I_C=10µA, V_{CE}=5.0V			0.7	Vdc
Current Gain at F =	h_{FE}					-
Emitter Transition Capacitance	C_{TE}	V_{EB}=0.5V			2.5	pF
Collector to Collector Capacitance	C_{C1-C2}	V_{CC}=0			4.0	pF
Collector to Collector Leakage Current	I_{C1-C2}	V_{CC}= ±60V			10	nA
Output Capacitance	C_{ob}	V_{CB}=5.0V			2.0	pF
Frequency Cutoff	f & b					MHz
Transition Frequency	f_T	I_C=10µA, V_{CE}=5.0V I_C=1.0mA, V_{CE}=5.0V	4 90			MHz

Notes: *Pulse Width ≤300usec 2% Duty Cycle

TYPE: IT131

SMALL SIGNAL CHARACTERISTICS

	SYMBOL	MIN	TYP	MAX	UNITS
Input Impedance					Ohms
Voltage Feedback Ratio					X10-4
Output Admittance					µmhos
Base Current Differential I_C = 10µA V_{CE} = 5V	$\lvert I_{B1} - I_{B2} \rvert$			25	nA
DC Current Gain Ratio	h_{FE1}/h_{FE2}				
Base-Emitter Voltage Differential I_C=10µA, V_{CE}=5.0V	$\lvert V_{BE1}-V_{BE2} \rvert$			3.0	mV
Base-Emitter Voltage Differential Change Due to Temp I_C=10µA, V_{CE}=5.0V T_A= -55°C to +125°C	$\Delta(V_{BE1}-V_{BE2})$			10	µV/°C

SWITCHING CHARACTERISTICS

		SYMBOL	MIN	TYP	MAX	UNITS
Turn-On Time		t_{on}				ns
Turn-Off Time		t_{off}				ns
Delay Time		t_d				ns
Rise Time		t_r				ns
Storage Time		t_s				ns
Fall Time		t_f				ns

FUNCTIONAL TEST

	SYMBOL	MIN	TYP	MAX	UNITS
Common-Emitter Amplifier Power Gain	GPE				dB
Power Output	Pout				Watt
Collector Efficiency	η				%
Power Output	Pout				Watt