IT130–IT132

IT130–IT132
Monolithic Dual PNP General Purpose Amplifier

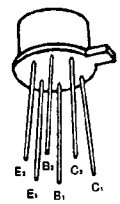
INTERSIL

T-29-27

FEATURES
- High h_{FE} at Low Current
- Low Output Capacitance
- Tight I_B Match
- Tight V_{BE} Tracking

PIN CONFIGURATIONS

TO-71
TO-78



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ABSOLUTE MAXIMUM RATINGS
(T_A = 25°C unless otherwise specified)

Collector-Base Voltage (Note 1) 45V
Collector-Emitter Voltage (Note 1) 45V
Emitter Base Voltage (Notes 1 and 2) 7V
Collector Current (Note 1) 50mA
Collector-Collector Voltage 60V
Storage Temperature Range ..... −65°C to +175°C
Operating Temperature Range ..... −55°C to +175°C
Lead Temperature (Soldering, 10sec) ..... +300°C

	TO-71		TO-78	
	One Side	Both Sides	One Side	Both Sides
Power Dissipation	200mW 1.3mW/°C	400mW 2.7mW/°C	250mW 1.7mW/°C	500mW 3.3mW/°C

NOTE: *Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions above those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.*

ORDERING INFORMATION

TO-78	TO-71
IT130A	IT130A-TO71
IT130	IT130-TO71
IT131	IT131-TO71
IT132	IT132-TO71

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	IT130A		IT130		IT131		IT132		Units
			Min	Max	Min	Max	Min	Max	Min	Max	
h_{FE}	DC Current Gain	I_C = 10μA, V_{CE} = 5.0V	200		200		80		80		
		I_C = 1.0mA, V_{CE} = 5.0V	225		225		100		100		
		I_C = 10μA, V_{CE} = 5.0V, T_A = −55°C	75		75		30		30		
V_{BE}(ON)	Emitter-Base On Voltage	I_C = 10μA, V_{CE} = 5.0V		0.7		0.7		0.7		0.7	V
V_{CE}(SAT)	Collector Saturation Voltage	I_C = 0.5mA, I_B = 0.05mA		0.5		0.5		0.5		0.5	
I_{CBO}	Collector Cutoff Current	I_E = 0, V_{CB} = 45V, T_A = +150°C		−1.0		−1.0		−1.0		−1.0	nA
				−10		−10		−10		−10	μA
I_{EBO}	Emitter Cutoff Current	I_C = 0, V_{EB} = 5.0V		−1.0		−1.0		−1.0		−1.0	nA
C_{ob} (Note 3)	Output Capacitance	I_E = 0, V_{CB} = 5.0V		2.0		2.0		2.0		2.0	pF
C_{te} (Note 3)	Emitter Transition Capacitance	I_C = 0, V_{EB} = 0.5V		2.5		2.5		2.5		2.5	
$C_{C_1-C_2}$ (Note 3)	Collector to Collector Capacitance	V_{CC} = 0		4.0		4.0		4.0		4.0	

INTERSIL'S SOLE AND EXCLUSIVE WARRANTY OBLIGATION WITH RESPECT TO THIS PRODUCT SHALL BE THAT STATED IN THE WARRANTY ARTICLE OF THE CONDITION OF SALE. THE WARRANTY SHALL BE EXCLUSIVE AND SHALL BE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE.

NOTE: All typical values have been characterized but are not tested.

IT130-IT132

INTERSIL

T-29-27

ELECTRICAL CHARACTERISTICS (Continued) (T_A = 25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	IT130A		IT130		IT131		IT132		Units
			Min	Max	Min	Max	Min	Max	Min	Max	
$I_{C_1-C_2}$	Collector to Collector Leakage Current	V_{CC} = ±60V		10		10		10		10	nA
V_{CEO}(SUST)	Collector to Emitter Sustaining Voltage	I_C = 1.0mA, I_B = 0	−45		−45		−45		−45		V
GBW	Current Gain Bandwidth Product (Note 3)	I_C = 10μA, V_{CE} = 5V	5		5		4		4		MHz
		I_C = 1mA, V_{CE} = 5V	110		110		90		90		
$\lvert V_{BE_1}-V_{BE_2}\rvert$	Base Emitter Voltage Differential	I_C = 10μA, V_{CE} = 5.0V		1		2		3		5	mV
$\lvert I_{B_1}-I_{B_2}\rvert$	Base Current Differential	I_C = 10μA, V_{CE} = 5.0V		2.5		5		25		25	nA
$\Delta(V_{BE_1}-V_{BE_2})/\Delta T$	Base-Emitter Voltage Differential Change with Temperature (Note 3)	T_A = −55°C to +125°C, I_C = 10μA, V_{CE} = 5.0V		3		5		10		20	μV/°C

NOTES: 1. Per transistor.
2. The reverse base-to-emitter voltage must never exceed 7.0V, and the reverse base-to-emitter current must never exceed 10μA.
3. For design reference only, not 100% tested.

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NOTE: All typical values have been characterized but are not tested.