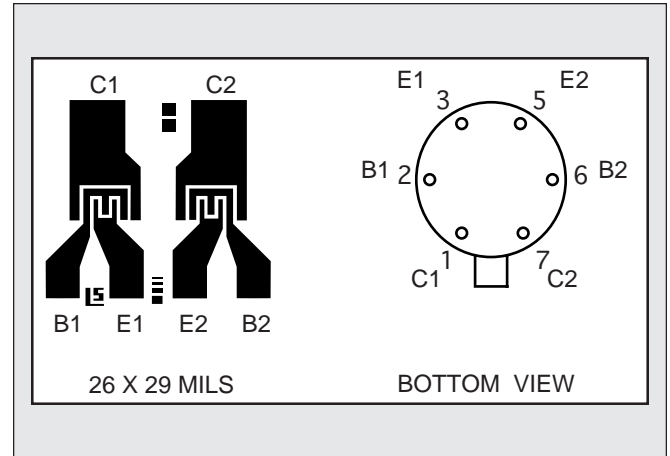


# LINEAR SYSTEMS

Linear Integrated Systems

## IT120A IT120 IT121 IT122 MONOLITHIC DUAL NPN TRANSISTORS

FEATURES		
Direct Replacement for Intersil IT120 Series Pin for Pin Compatible		
ABSOLUTE MAXIMUM RATINGS NOTE 1		
(T <sub>A</sub> = 25°C unless otherwise noted)		
I <sub>C</sub>	Collector Current	10mA
Maximum Temperatures		
Storage Temperature Range		-65°C to +200°C
Operating Temperature Range		-55°C to +150°C
Maximum Power Dissipation		
	ONE SIDE	BOTH SIDES
Device Dissipation @ Free Air	250mW	500mW
Linear Derating Factor	2.3mW/°C	4.3mW/°C



### ELECTRICAL CHARACTERISTICS T<sub>A</sub>=25°C (unless otherwise noted)

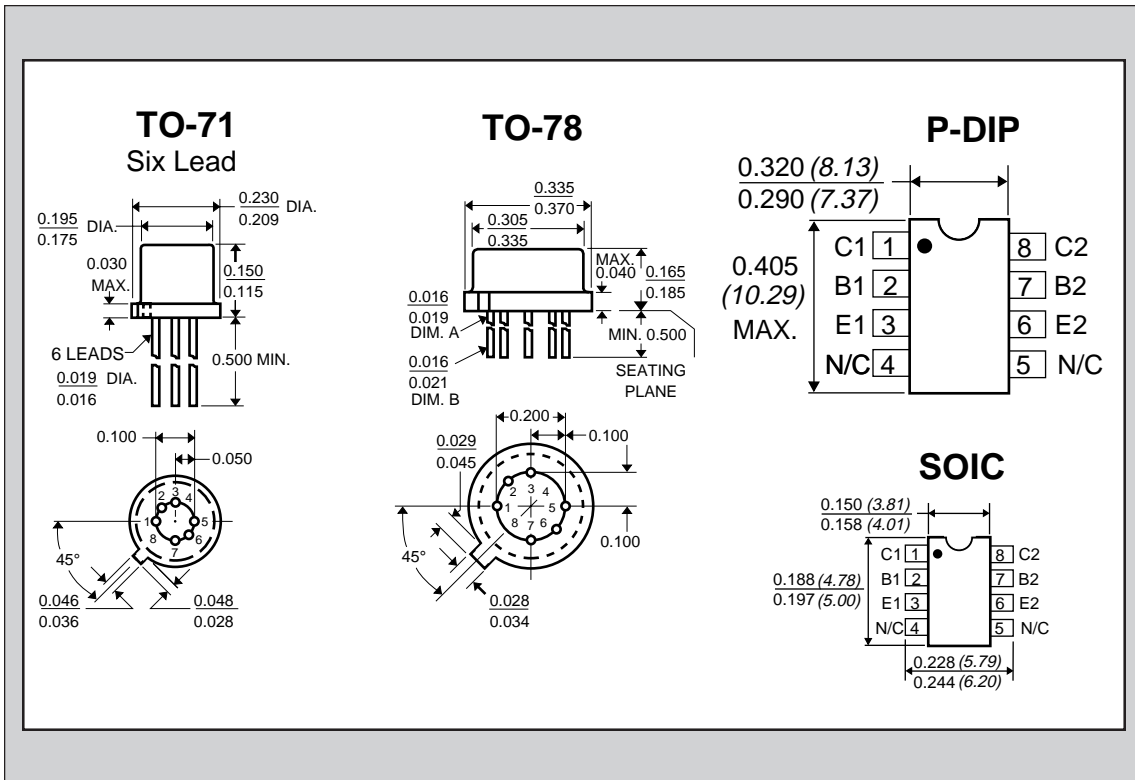
SYMBOL	CHARACTERISTICS	IT120A	IT120	IT121	IT122		UNITS	CONDITIONS
BV <sub>CBO</sub>	Collector to Base Voltage	45	45	45	45	MIN.	V	I <sub>C</sub> = 10μA I <sub>E</sub> = 0
BV <sub>CEO</sub>	Collector to Emitter Voltage	45	45	45	45	MIN.	V	I <sub>C</sub> = 10μA I <sub>B</sub> = 0
BV <sub>EBO</sub>	Emitter-Base Breakdown Voltage	6.2	6.2	6.2	6.2	MIN.	V	I <sub>E</sub> = 10μA I <sub>C</sub> = 0 NOTE 2
BV <sub>CCO</sub>	Collector to Collector Voltage	60	60	60	60	MIN.	V	I <sub>C</sub> = 10μA I <sub>E</sub> = 0
h <sub>FE</sub>	DC Current Gain	200	200	80	80	MIN.		I <sub>C</sub> = 10μA V <sub>CE</sub> = 5V
		225	225	100	100	MIN.		I <sub>C</sub> = 1.0mA V <sub>CE</sub> = 5V
V <sub>CE(SAT)</sub>	Collector Saturation Voltage	0.5	0.5	0.5	0.5	MAX.	V	I <sub>C</sub> = 0.5mA I <sub>B</sub> = 0.05mA
I <sub>EBO</sub>	Emitter Cutoff Current	1	1	1	1	MAX.	nA	I <sub>C</sub> = 0 V <sub>EB</sub> = 3V
I <sub>CBO</sub>	Collector Cutoff Current	1	1	1	1	MAX.	nA	I <sub>E</sub> = 0 V <sub>CB</sub> = 45V
C <sub>OBO</sub>	Output Capacitance	2	2	2	2	MAX.	pF	I <sub>E</sub> = 0 V <sub>CB</sub> = 5V
C <sub>C1C2</sub>	Collector to Collector Capacitance	2	2	2	2	MAX.	pF	V <sub>CC</sub> = 0
I <sub>C1C2</sub>	Collector to Collector Leakage Current	10	10	10	10	MAX.	nA	V <sub>CC</sub> = ±60V
f <sub>T</sub>	Current Gain Bandwidth Product	220	220	180	180	MIN.	MHz	I <sub>C</sub> = 1mA V <sub>CE</sub> = 5V
NF	Narrow Band Noise Figure	3	3	3	3	MAX.	dB	I <sub>C</sub> = 100μA V <sub>CE</sub> = 5V BW = 200Hz, R <sub>G</sub> = 10 KΩ f=1KHz

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**MATCHING CHARACTERISTICS @ 25°C (unless otherwise noted)**

SYMBOL	CHARACTERISTICS	IT120A	IT120	IT121	IT122		UNITS	CONDITIONS
$ V_{BE1} - V_{BE2} $	Base Emitter Voltage Differential	1	2	3	5	MAX.	mV	$I_C = 10 \mu A$ $V_{CE} = 5V$
$\Delta (V_{BE1} - V_{BE2})/\Delta T$	Base Emitter Voltage Differential Change with Temperature	3	5	10	20	MAX.	$\mu V/^\circ C$	$I_C = 10 \mu A$ $V_{CE} = 5V$ $T = -55^\circ C$ to $+125^\circ C$
$ I_{B1} - I_{B2} $	Base Current Differential	2.5	5	25	25	MAX.	nA	$I_C = 10 \mu A$ $V_{CE} = 5V$



**NOTES:**

1. These ratings are limiting values above which the serviceability of any semiconductor may be impaired.
2. The reverse base-to-emitter voltage must never exceed 6.2 volts; the reverse base-to-emitter current must never exceed 10  $\mu A$ .