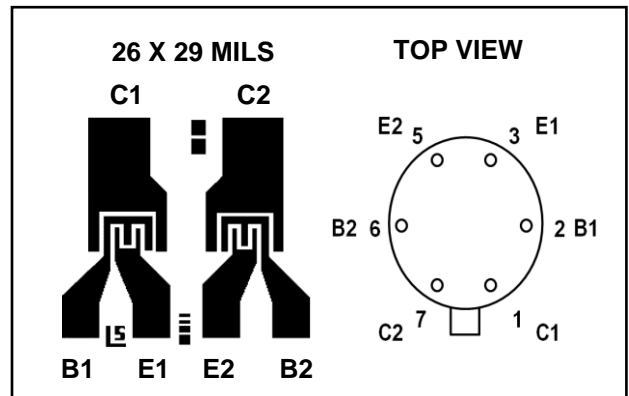




**IT120A IT120 IT121 IT122**

**MONOLITHIC DUAL  
NPN TRANSISTORS**

FEATURES		
Direct Replacement for Intersil IT120 Series Pin for Pin Compatible		
<b>ABSOLUTE MAXIMUM RATINGS</b> 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 +150°C
Operating Temperature Range		-55°C to +150°C
Maximum Power Dissipation	ONE SIDE	BOTH SIDES
Device Dissipation T <sub>A</sub> =25°C	250mW	500mW
Linear Derating Factor	2.3mW/°C	4.3W/°C

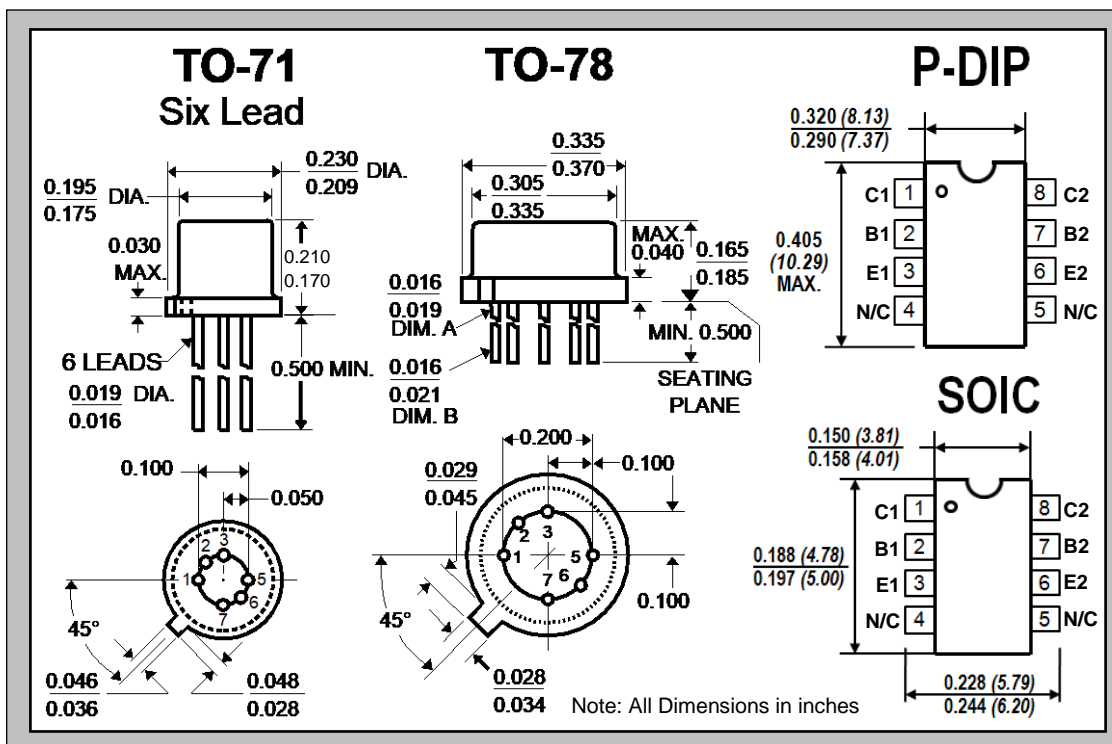


**ELECTRICAL CHARACTERISTICS T<sub>A</sub> = 25°C (unless otherwise noted)**

SYMBOL	CHARACTERISTIC	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> = 0A
BV <sub>CEO</sub>	Collector to Emitter Voltage	45	45	45	45	MIN.	V	I <sub>C</sub> = 10μA I <sub>B</sub> = 0A
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> = 0A <b>NOTE 2</b>
BV <sub>CCO</sub>	Collector to Collector Voltage	60	60	60	60	MIN.	V	I <sub>CCO</sub> = 10μA I <sub>B</sub> = I <sub>E</sub> = 0A
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 <sup>3</sup>	2	2	2	2	MAX.	pF	I <sub>E</sub> = 0 V <sub>CB</sub> = 5V
C <sub>C1C2</sub>	Collector to Collector Capacitance <sup>3</sup>	2	2	2	2	MAX.	pF	V <sub>CC</sub> = 0
I <sub>C1C2</sub>	Collector to Collector Leakage Current	±500	±500	±500	±500	MAX.	nA	V <sub>CCO</sub> = ±60V I <sub>B</sub> = I <sub>E</sub> = 0A
f <sub>T</sub>	Current Gain Bandwidth Product <sup>3</sup>	220	220	180	180	MIN.	MHz	I <sub>C</sub> = 1mA V <sub>CE</sub> = 5V
NF	Narrow Band Noise Figure <sup>3</sup>	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

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

SYMBOL	CHARACTERISTIC	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 <sup>3</sup>	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  $\mu A$ .
3. Not a production test.

Linear Systems, established in 1987, is a third-generation precision semiconductor company providing high-quality discrete components. Expertise brought to Linear Systems is based on processes and products developed at Amelco, Union Carbide, Intersil and Micro Power Systems by company President John H. Hall. Hall, a protégé of Silicon Valley legend Dr. Jean Hoerni, was the director of IC Development at Union Carbide, co-founder and vice president of R&D at Intersil, and founder/president of Micro Power Systems.