

LINEAR SYSTEMS

Linear Integrated Systems

IT120A IT120 IT121 IT122 MONOLITHIC DUAL NPN TRANSISTORS

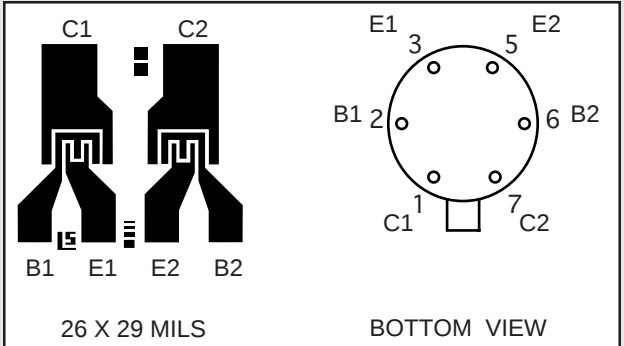
FEATURES

Direct Replacement for Intersil IT120 Series
Pin for Pin Compatible

ABSOLUTE MAXIMUM RATINGS NOTE 1

(T_A = 25°C unless otherwise noted)

I _C	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_A = 25°C (unless otherwise noted)

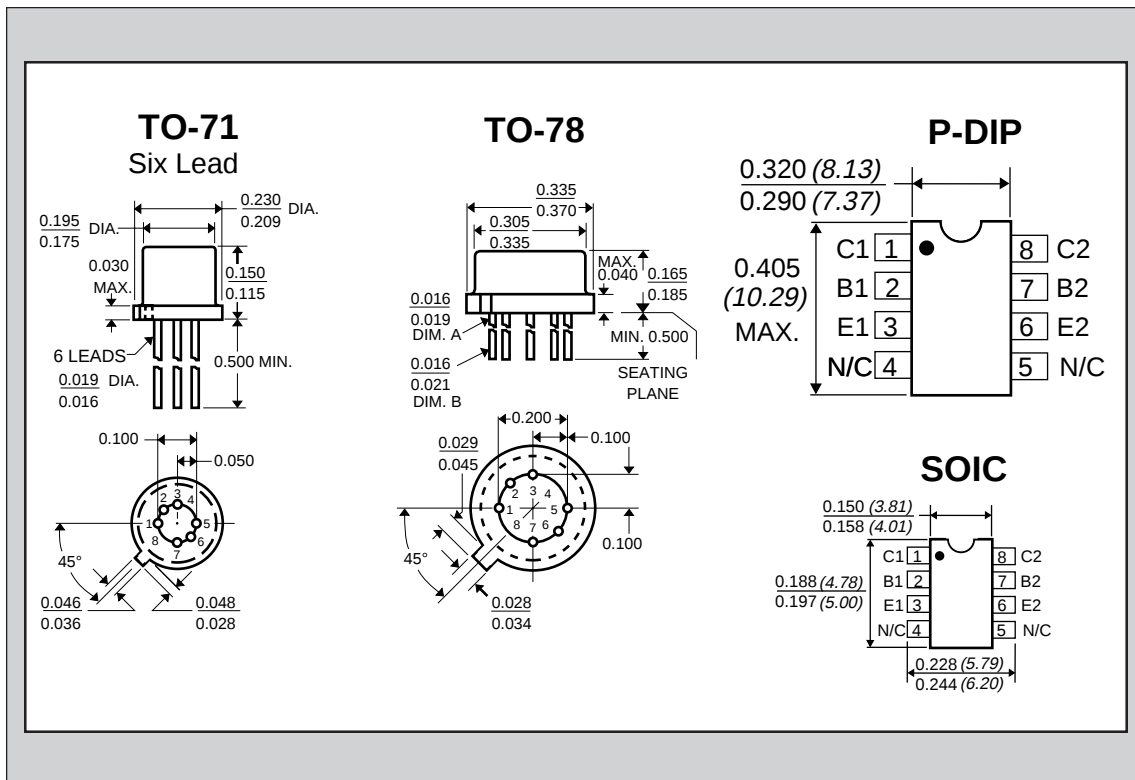
SYMBOL	CHARACTERISTICS	IT120A	IT120	IT121	IT122		UNITS	CONDITIONS
BV _{CBO}	Collector to Base Voltage	45	45	45	45	MIN.	V	I _C = 10μA I _E = 0
BV _{CEO}	Collector to Emitter Voltage	45	45	45	45	MIN.	V	I _C = 10μA I _B = 0
BV _{EBO}	Emitter-Base Breakdown Voltage	6.2	6.2	6.2	6.2	MIN.	V	I _E = 10μA I _C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