LINEAR SYSTEMS

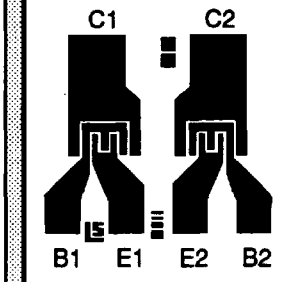
Linear Integrated Systems

IT124

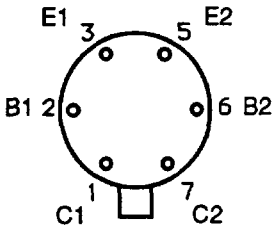
SUPER-BETA MONOLITHIC DUAL NPN TRANSISTORS

FEATURES		
Direct Replacement for Intersil IT124		
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 Junction Temperature		+150°C

Maximum Power Dissipation	ONE SIDE	BOTH SIDES
Device Dissipation @ Free Air	250mW	500mW
Linear Derating Factor	2.3mW/°C	4.3mW/°C



26 X 29 MILS



BOTTOM VIEW

ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTICS	IT124		UNITS	CONDITIONS	
BV_{CBO}	Collector-Base Breakdown Voltage	2	MIN.	V	I_C = 10µA	I_E = 0
BV_{CEO}	Collector to Emitter Voltage	2	MIN.	V	I_C = 10µA	I_B = 0
BV_{EBO}	Emitter-Base Breakdown Voltage	6.2	MIN.	V	I_E = 10µA	I_C = 0 NOTE 2
BV_{CCO}	Collector to Collector Voltage	100	MIN.	V	I_C = 10µA	I_E = 0
h_{FE}	DC Current Gain	1500	MIN.		I_C = 1µA	V_{CE} = 1V
h_{FE}	DC Current Gain	1500	MIN.		I_C = 10µA	V_{CE} = 1V
V_{CE}(SAT)	Collector Saturation Voltage	0.5	MAX.	V	I_C = 1mA	I_B = 0.1 mA
I_{CBO}	Collector Cutoff Current	100	MAX.	pA	I_E = 0	V_{CB} = 1V
I_{EBO}	Emitter Cutoff Current	100	MAX.	pA	I_C = 0	V_{EB} = 3V
C_{OBO}	Output Capacitance	2	MAX.	pF	I_E = 0	V_{CB} = 1V
C_{C1C2}	Collector to Collector Capacitance	2	MAX.	pF	V_{CC} = 0	
I_{C1C2}	Collector to Collector Leakage Current	250	MAX.	pA	V_{CC} = ±50V	
f_T	Current Gain Bandwidth Product	100	MIN.	MHz	I_C = 100µA	V_{CE} = 1V
NF	Narrow Band Noise Figure	3	MAX.	dB	I_C = 10µA R_G = 10 K BW = 200Hz	V_{CE} = 3V f=1KHz

LISIS028

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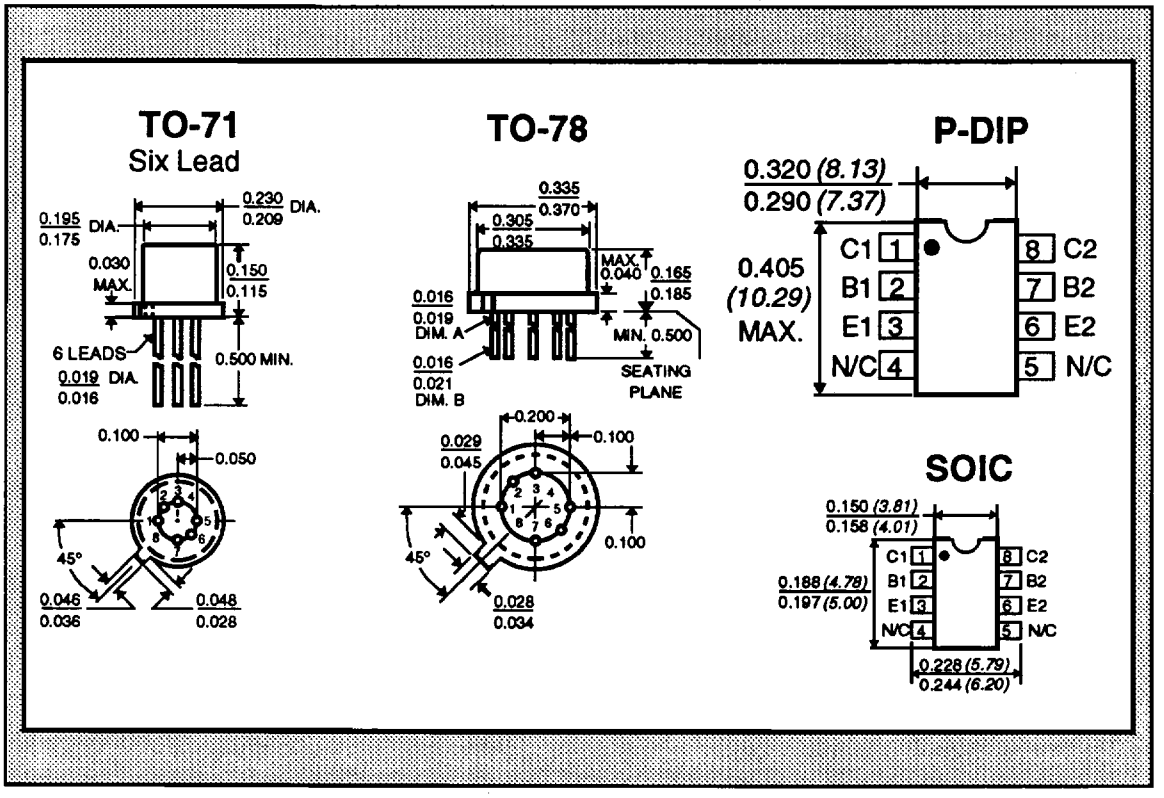
MATCHING CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTICS	IT124		UNITS	CONDITIONS
$\lvert V_{BE1}-V_{BE2}\rvert$	Base Emitter Voltage Differential	2	TYP.	mV	I_C = 10 µA V_{CE} = 1V
		5	MAX.	mV	
$\lvert(V_{BE1}-V_{BE2})\rvert/\Delta T$	Base Emitter Voltage Differential	5	TYP.	µV/°C	I_C = 10 µA V_{CE} = 1V
	Change with Temperature	15	MAX.	µV/°C	T = -55°C to +125°C
$\lvert I_{B1}-I_{B2}\rvert$	Base Current Differential	0.6	MAX.	nA	I_C = 10µA V_{CE} = 1V



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.