

Linear Systems replaces discontinued Intersil IT121

The LS121 is a monolithic pair of NPN transistors mounted in a single SOT-23 package. The monolithic dual chip design reduces parasitics and gives better performance while ensuring extremely tight matching. The LS121 is a direct replacement for discontinued Intersil IT121.

The 6 Pin SOT-23 provides ease of manufacturing, and a lower cost assembly option.

(See Packaging Information).

LS121 Features:

- High h_{FE} at low current
- Tight matching
- Tight V_{BE} tracking
- Low Output Capacitance

FEATURES

Direct Replacement for INTERSIL LS121

HIGH h_{FE} @ LOW CURRENT ≥ 80 @ 10 μ A

OUTPUT CAPACITANCE ≤ 2.0 pF

V_{BE} tracking ≤ 10 mV/ $^{\circ}$ C

ABSOLUTE MAXIMUM RATINGS¹

@ 25 $^{\circ}$ C (unless otherwise noted)

Maximum Temperatures

Storage Temperature -65 $^{\circ}$ C to +200 $^{\circ}$ C

Operating Junction Temperature -55 $^{\circ}$ C to +150 $^{\circ}$ C

Maximum Power Dissipation

Continuous Power Dissipation (One side) 250mW

Continuous Power Dissipation (Both sides) 500mW

Linear Derating factor (One side) 2.3mW/ $^{\circ}$ C

Linear Derating factor (Both sides) 4.3mW/ $^{\circ}$ C

Maximum Currents

Collector Current 10mA

MATCHING CHARACTERISTICS @ 25 $^{\circ}$ C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
$ V_{BE1} - V_{BE2} $	Base Emitter Voltage Differential	--	--	3	mV	$I_C = 10\mu A, V_{CE} = 5V$
$\Delta V_{BE1} - V_{BE2} / \Delta T$	Base Emitter Voltage Differential Change with Temperature	--	--	10	$\mu V/^{\circ}C$	$I_C = 10\mu A, V_{CE} = 5V$ $T_A = -55^{\circ}C$ to $+125^{\circ}C$
$ I_{B1} - I_{B2} $	Base Current Differential	--	--	25	nA	$I_C = 10\mu A, V_{CE} = 5V$

ELECTRICAL CHARACTERISTICS @ 25 $^{\circ}$ C (unless otherwise noted)

SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	CONDITIONS
BV_{CBO}	Collector to Base Voltage	45	--	--	V	$I_C = 10\mu A, I_E = 0$
BV_{CEO}	Collector to Emitter Voltage	45	--	--	V	$I_C = 10\mu A, I_B = 0$
BV_{EBO}	Emitter-Base Breakdown Voltage	6.2	--	--	V	$I_E = 10\mu A, I_C = 0^2$
BV_{CCO}	Collector to Collector Voltage	60	--	--	V	$I_C = 10\mu A, I_E = 0$
h_{FE}	DC Current Gain	80	--	--		$I_C = 10\mu A, V_{CE} = 5V$
		100	--	--		$I_C = 1.0mA, V_{CE} = 5V$
$V_{CE(SAT)}$	Collector Saturation Voltage	--	--	0.5	V	$I_C = 0.5mA, I_B = 0.05mA$
I_{EBO}	Emitter Cutoff Current	--	--	1	nA	$I_C = 0, V_{EB} = 3V$
I_{CBO}	Collector Cutoff Current	--	--	1	nA	$I_E = 0, V_{CB} = 45V$
C_{OBO}	Output Capacitance	--	--	2	pF	$I_E = 0, V_{CB} = 5V$
C_{C1C2}	Collector to Collector Capacitance	--	--	2	pF	$V_{CC} = 0V$
I_{C1C2}	Collector to Collector Leakage Current	--	--	10	nA	$V_{CC} = \pm 60V$
f_T	Current Gain Bandwidth Product	180	--	--	MHz	$I_C = 1mA, V_{CE} = 5V$
NF	Narrow Band Noise Figure	--	--	3	dB	$I_C = 100\mu A, V_{CE} = 5V, BW = 200Hz, R_G = 10K\Omega, f = 1KHz$

Notes:

1. Absolute Maximum ratings are limiting values above which serviceability 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 μ A.

Available Packages:

LS121 in SOT-23
LS121 available as bare die



Please contact Micross for full package and die dimensions:

Email: chipcomponents@micross.com
Web: www.micross.com/distribution.aspx

SOT-23 (Top View)

