

LINEAR SYSTEMS

Twenty-Five Years Of Quality Through Innovation

LS3250 SERIES

MONOLITHIC DUAL
NPN TRANSISTORS

*FEATURES

6 LEAD SOT-23 SURFACE MOUNT PACKAGE*

TIGHT MATCHING¹ 2mV

EXCELLENT THERMAL TRACKING¹ 3 μ V/ $^{\circ}$ C

ABSOLUTE MAXIMUM RATINGS²

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

Maximum Temperatures

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

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

Maximum Power Dissipation

Continuous Power Dissipation TBD

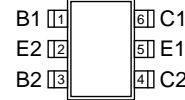
Maximum Currents

Collector Current 50mA

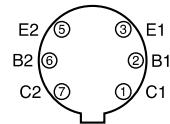
Maximum Voltages

Collector to Collector Voltage 50V

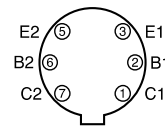
*SOT-23 TOP VIEW



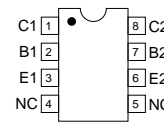
TO-78 TOP VIEW



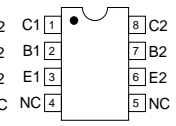
TO-71 TOP VIEW



PDIP TOP VIEW



SOIC TOP VIEW



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

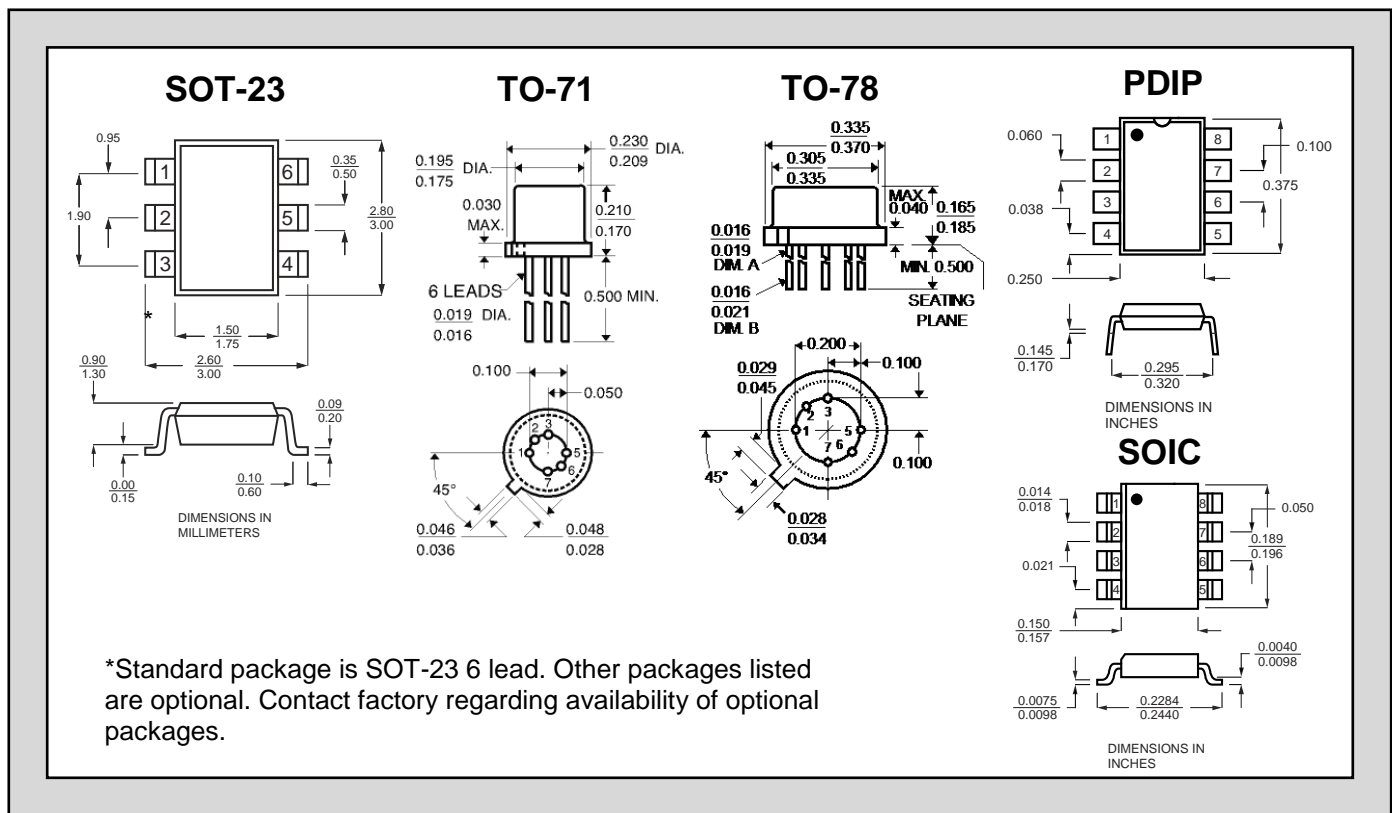
SYMBOL	CHARACTERISTIC	LS3250A		LS3250B		LS3250C		UNIT	CONDITIONS
		MIN	MAX	MIN	MAX	MIN	MAX		
$ V_{BE1} - V_{BE2} $	Base to Emitter Voltage Differential		2		5		10	mV	$I_C = 10\mu A, V_{CE} = 5V$
$\frac{ V_{BE1} - V_{BE2} }{\Delta T}$	Base to Emitter Voltage Differential Change with Temperature		3		5		15	$\mu V/^{\circ}C$	$I_C = 10\mu A, V_{CE} = 5V$ $T_A = -40^{\circ}C$ to $+85^{\circ}C$
$ I_{B1} - I_{B2} $	Base Current Differential		10		10		10	nA	$I_C = 10\mu A, V_{CE} = 5V$
$\frac{ I_{B1} - I_{B2} }{\Delta T}$	Base Current Differential Change with Temperature		0.5		0.5		1.0	nA/ $^{\circ}C$	$I_C = 10\mu A, V_{CE} = 5V$ $T_A = -40^{\circ}C$ to $+85^{\circ}C$
$\frac{h_{FE1}}{h_{FE2}}$	Current Gain Differential		10		10		15	%	$I_C = 1mA, V_{CE} = 5V$

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

SYMBOL	CHARACTERISTIC	LS3250A		LS3250B		LS3250C		UNIT	CONDITIONS
		MIN	MAX	MIN	MAX	MIN	MAX		
BV_{CBO}	Collector to Base Breakdown Voltage	45		40		20		V	$I_C = 10\mu A, I_E = 0A$
BV_{CEO}	Collector to Emitter Breakdown Voltage	45		40		20			$I_C = 10mA, I_B = 0$
BV_{CCO}	Collector to Collector Breakdown Voltage	± 50		± 50		± 50			$I_C = \pm 1\mu A, I_E = I_B = 0A$
BV_{EBO}	Emitter to Base Breakdown Voltage ³	6.0		6.0		6.0			$I_E = 10\mu A, I_C = 0A$
$V_{CE(SAT)}$	Collector to Emitter Saturation Voltage		0.35		0.35		1.2		$I_C = 10mA, I_B = 1mA$

ELECTRICAL CHARACTERISTICS CONT. @25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	LS3250A		LS3250B		LS3250C		UNIT	CONDITIONS
		MIN	MAX	MIN	MAX	MIN	MAX		
h _{FE}	DC Current Gain	150		100		50			I _C = 1mA, V _{CE} = 5V
		150	650	80		40			I _C = 10mA, V _{CE} = 5V
		125		60		30			I _C = 35mA, V _{CE} = 5V
I _{CBO}	Collector Cutoff Current		0.35		0.35			nA	I _E = 0A, V _{CB} = 30V
I _{EBO}	Emitter Cutoff Current		0.35		0.35	0.35			I _E = 0A, V _{CB} = 20V
I _{C1C2}	Collector to Collector Leakage Current		±1		±1		±1	µA	V _{CC} = ±50V, I _E = I _B = 0A
C _{OBO}	Output Capacitance		2		2		2	pF	I _E = 0A, V _{CB} = 10V
f _T	Gain Bandwidth Product (Current)		600		600		600	MHz	I _C = 1mA, V _{CE} = 5V
NF	Noise Figure (Narrow Band)		3		3		3	dB	I _C = 100µA, V _{CE} = 5V BW = 200Hz R _B = 10Ω, f = 1kHz



NOTES

1. Maximum rating for LS3250A, SOT23-6.
 2. Absolute maximum ratings are limiting values above which serviceability may be impaired.
 3. The reverse Base to Emitter voltage must never exceed 6.0 Volts. The reverse Base to Emitter current must never exceed 10µA.
- Information furnished by Linear Integrated Systems is believed to be accurate and reliable. However, no responsibility is assumed for its use; nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Linear Integrated Systems.

Linear Integrated Systems (LIS) is a 25-year-old, third-generation precision semiconductor company providing high-quality discrete components. Expertise brought to LIS 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.