LINEAR SYSTEMS

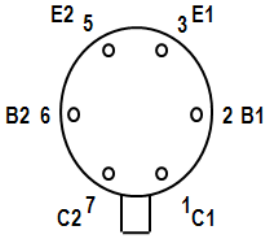
Over 30 Years of Quality Through Innovation

LS350, LS351 & LS352

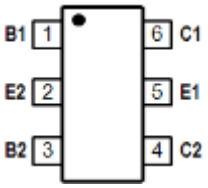
Monolithic Dual PNP Transistors

GENERAL PURPOSE

FEATURES		
HIGH GAIN	h_{FE} 200 @ 10µA - 1mA	
TIGHT V_{BE} MATCHING	$\|V_{BE1}-V_{BE2}\|$=0.2mV TYP.	
HIGH f_T	275 MHz TYP. @ 1mA	
ABSOLUTE MAXIMUM RATINGS NOTE 1 @ 25 °C (unless otherwise stated)		
I_C	**Collector Current**	**10mA**
Maximum Temperatures		
Storage Temperature	-55° to +150°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



TO-71 & TO-78 6L
Top View



SOT-23 6 L
Top View

ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	LS350	LS351	LS352		UNITS	CONDITIONS
BV_{CBO}	Collector to Base Voltage	25	45	60	MIN.	V	I_C = 10µA I_E = 0
BV_{CEO}	Collector to Emitter Voltage	25	45	60	MIN.	V	I_C = 1mA I_B = 0
BV_{EBO}	Emitter to Base Voltage	6.0	6.0	6.0	MIN.	V	I_E = 10µA I_C = 0 NOTE 2
BV_{CCO}	Collector to Collector Voltage	±25	±45	±80	MIN.	V	I_C = ±1µA I_E = 0 = I_B = 0
h_{FE}	DC Current Gain	100	150 600	200 600	MIN. MAX.		I_C = 10µA V_{CE} = 5V
h_{FE}	DC Current Gain	100	150 600	200 600	MIN. MAX.		I_C = 100µA V_{CE} = 5V
h_{FE}	DC Current Gain	100	150	200	MIN.		I_C = 1mA, V_{CE} = 5V
V_{CE}(SAT)	Collector Saturation Voltage	0.5	0.5	0.5	MAX.	V	I_C = 1mA I_B = 0.1mA
I_{CBO}	Collector Cutoff Current	0.2	0.2	0.2	MAX.	nA	I_E = 0 V_{CB} = NOTE 3
I_{EBO}	Emitter Cutoff Current	0.2	0.2	0.2	MAX.	nA	I_C = 0 V_{EB} = 3V
C_{OBO}	Output Capacitance	2	2	2	MAX.	pF	I_E = 0 V_{CB} = 5V
C_{C1C2}	Collector to Collector Capacitance	2	2	2	MAX.	pF	V_{CC} = 0
I_{C1C2}	Collector to Collector Leakage Current	1.0	1.0	1.0	MAX.	µA	V_{CC} = NOTE 4
f_T	Current Gain Bandwidth Product	200	200	200	MIN.	MHz	I_C = 1mA V_{CE} = 5V
NF	Narrow Band Noise Figure	3	3	3	MAX.	dB	I_C = 100µA V_{CE} = 5V BW = 200Hz R_G = 10K f = 1KHz

Linear Integrated Systems

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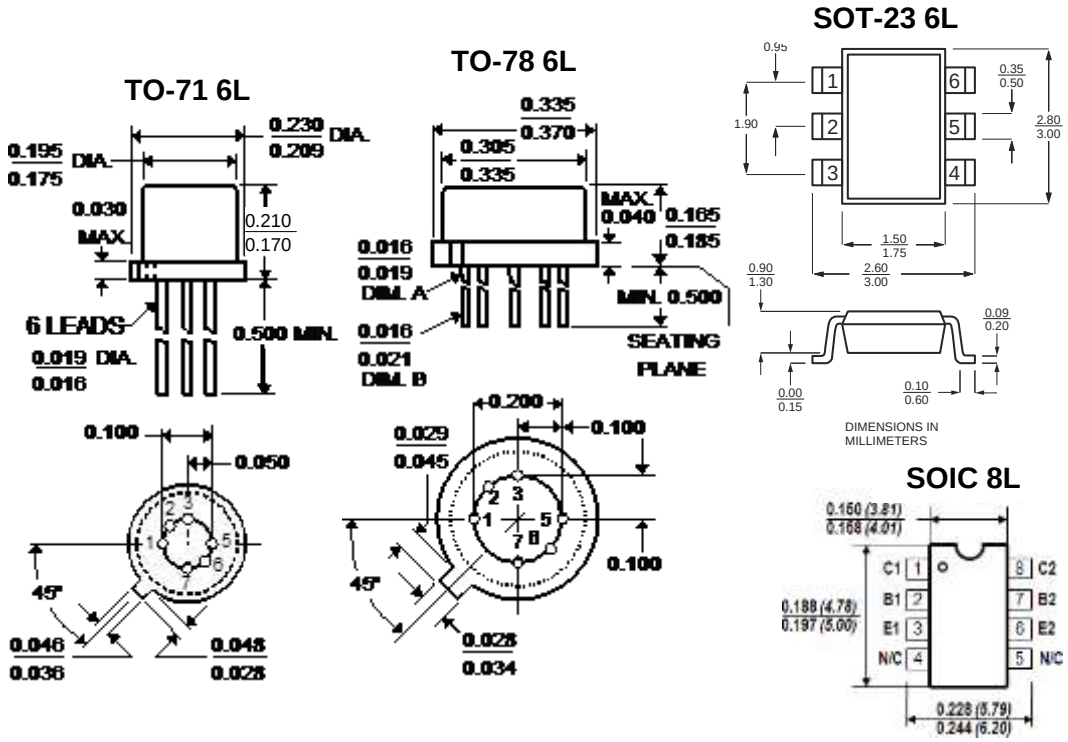
10/14/2020 Rev#A5 ECN# LS350 LS351 LS352

MATCHING CHARACTERISTICS

SYMBOL	CHARACTERISTIC	LS350 SOT-23	LS351	LS352		UNITS	CONDITIONS
$\lvert V_{BE1}-V_{BE2}\rvert$	Base Emitter Voltage Differential	1	0.4	0.2	TYP.	mV	I_C = 10 µA V_{CE} = 5V
		5	1.0	0.5	MAX.	mV	
$\lvert(V_{BE1}-V_{BE2})\rvert$/°C	Base Emitter Voltage Differential	2	1	0.5	TYP.	µV/°C	I_C = 10 µA V_{CE} = 5V
	Change with Temperature	20	10	2	MAX.	µV/°C	T_A = -55°C to +125°C
$\lvert I_{B1}- I_{B2}\rvert$	Base Current Differential		5	5	MAX.	nA	I_C = 10µA V_{CE} = 5V
$\lvert(I_{B1} - I_{B2})\rvert$/°C	Base Current Differential		0.5	0.3	MAX.	nA/°C	I_C = 10 µA, V_{CE} = 5V
	Change with Temperature						T_A = -55°C to +125°C
h_{FE1}/h_{FE2}	DC Current Gain Differential	10	5	5	TYP.	%	I_C = 10µA V_{CE} = 5V

Package Dimensions



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 6.0 volts; the reverse base-to-emitter current must never exceed 10 µA.
3. For LS350: V_{CB}=20V; for LS351 & LS352: V_{CB}=30V.
4. For LS351: V_{CC}=±45V; for LS352: V_{CC}=±80V; for LS350: V_{CC}=±25V.
5. All characteristics MIN/TYP/MAX numbers are absolute values. Negative values indicate electrical polarity only.