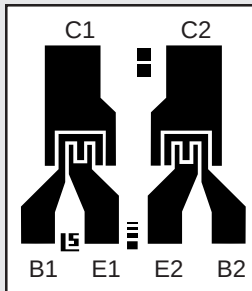
LINEAR SYSTEMS

Linear Integrated Systems

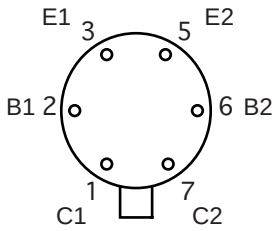
LS350 LS351 LS352

MONOLITHIC DUAL PNP TRANSISTORS

FEATURES		
HIGH GAIN	$h_{FE} \geq 200$ @ 10µA - 1mA	
TIGHT V_{BE} MATCHING	$\lvert V_{BE1}-V_{BE2}\rvert$ = 0.2mV TYP.	
HIGH f_T	275MHz TYP. @ 1mA	
ABSOLUTE MAXIMUM RATINGS NOTE 1 @ 25°C (unless otherwise noted)		
I_C	Collector Current	10mA
Maximum Temperatures		
Storage Temperature	-65° 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	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 = 10µA	I_B = 0
BV_{EBO}	Emitter to Base Voltage	6.2	6.2	6.2	MIN.	V	I_E = 10µA	I_C = 0 NOTE 2
BV_{CCO}	Collector to Collector Voltage	30	60	100	MIN.	V	I_C = 10µA	I_E = 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	0.5	0.5	0.5	MAX.	nA	V_{CC} = NOTE4	
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 BW = 200Hz f = 1KHz	V_{CE} = 5V R_G = 10 KΩ

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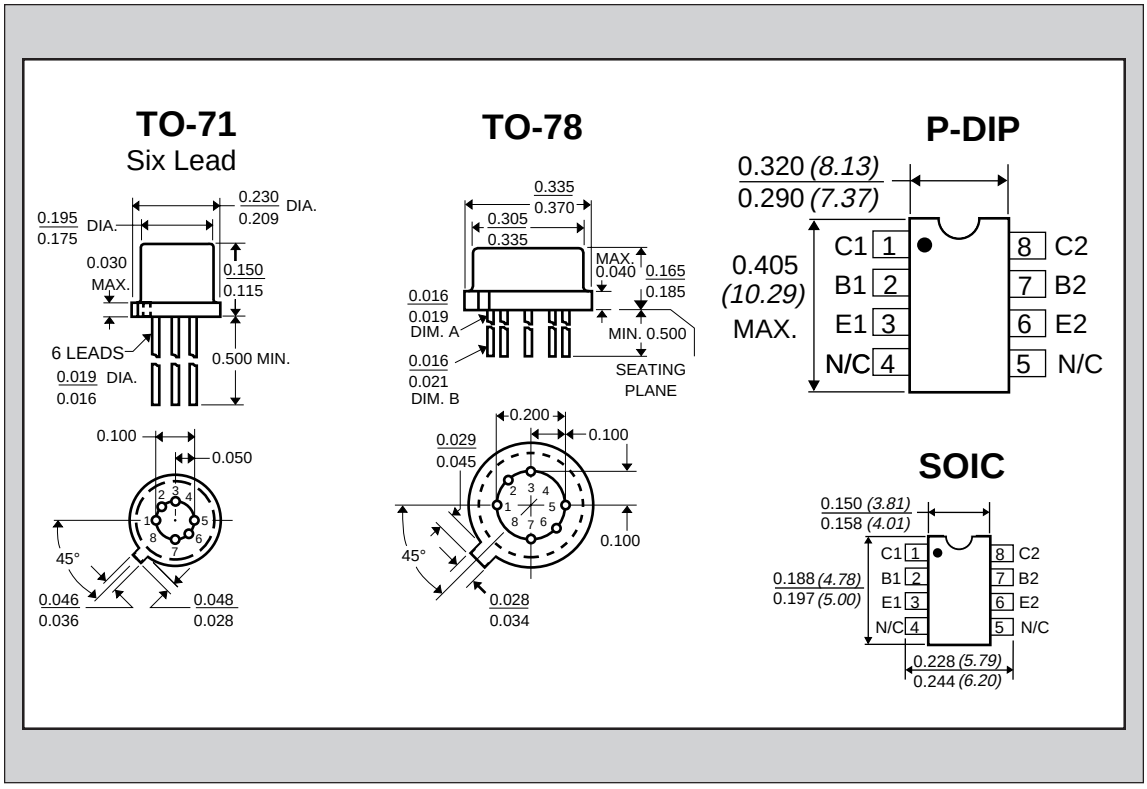
MATCHING CHARACTERISTICS

SYMBOL	CHARACTERISTICS	LS350	LS351	LS352		UNITS	CONDITIONS
$\|V_{BE1}-V_{BE2}\|$	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	
$\Delta\|(V_{BE1}-V_{BE2})\|/°C$	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
$\|I_{B1}- I_{B2}\|$	Base Current Differential		5	5	MAX.	nA	I_C = 10µA V_{CE} = 5V
$\|\Delta(I_{B1}- I_{B2})\|/°C$	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



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.
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.