

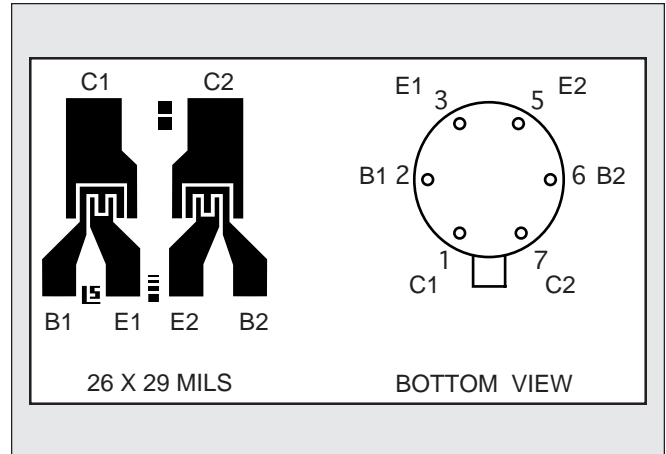
LINEAR SYSTEMS

Linear Integrated Systems

LS358

LOG CONFORMANCE MONOLITHIC DUAL PNP TRANSISTORS

FEATURES		
LOG CONFORMANCE		$\Delta r_e \leq 1\Omega$ from ideal TYP.
ABSOLUTE MAXIMUM RATINGS NOTE 1 @ 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



ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

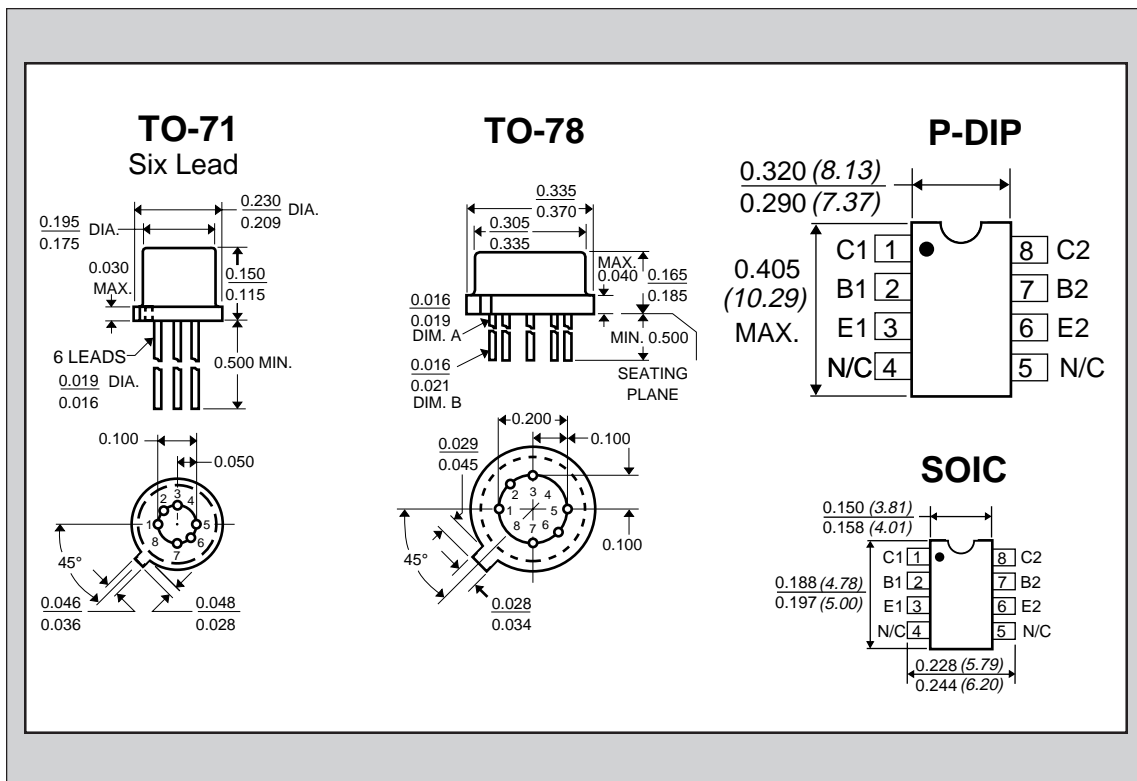
SYMBOL	CHARACTERISTICS	LS358		UNITS	CONDITIONS
Δr_e	Log Conformance	1.5		Ω	$I_C = 10\text{-}100\text{-}1000\mu\text{A}$ $V_{CE} = 5\text{V}$
BV_{CBO}	Collector-Base Breakdown Voltage	20	MIN.	V	$I_C = 10\mu\text{A}$ $I_E = 0$
BV_{CEO}	Collector to Emitter Voltage	20	MIN.	V	$I_C = 10\mu\text{A}$ $I_B = 0$
BV_{EBO}	Emitter-Base Breakdown Voltage	6.2	MIN.	V	$I_E = 10\mu\text{A}$ $I_C = 0$ NOTE 2
BV_{CCO}	Collector to Collector Voltage	45	MIN.	V	$I_C = 10\mu\text{A}$ $I_E = 0$
h_{FE}	DC Current Gain	100 600	MIN. MAX.		$I_C = 10\mu\text{A}$ $V_{CE} = 5\text{V}$
h_{FE}	DC Current Gain	100 600	MIN. MAX.		$I_C = 100\mu\text{A}$ $V_{CE} = 5\text{V}$
h_{FE}	DC Current Gain	100	MIN.		$I_C = 1\text{mA}$ $V_{CE} = 5\text{V}$
$V_{CE(SAT)}$	Collector Saturation Voltage	0.5	MAX.	V	$I_C = 1\text{mA}$ $I_B = 0.1\text{mA}$
I_{CBO}	Collector Cutoff Current	0.2	MAX.	nA	$I_E = 0$ $V_{CB} = 15\text{V}$
I_{EBO}	Emitter Cutoff Current	0.2	MAX.	nA	$I_C = 0$ $V_{EB} = 3\text{V}$
C_{OBO}	Output Capacitance	2	MAX.	pF	$I_E = 0$ $V_{CB} = 5\text{V}$
C_{C1C2}	Collector to Collector Capacitance	2	MAX.	pF	$V_{CC} = 0$
I_{C1C2}	Collector to Collector Leakage Current	0.5	MAX.	nA	$V_{CC} = \pm 45\text{V}$
f_T	Current Gain Bandwidth Product	200	MIN.	MHz	$I_C = 1\text{mA}$ $V_{CE} = 5\text{V}$
NF	Narrow Band Noise Figure	3	MAX.	dB	$I_C = 100\mu\text{A}$ $V_{CE} = 5\text{V}$ $BW = 200\text{Hz}$ $R_G = 10\text{K}\Omega$ $f = 1\text{KHz}$

Linear Integrated Systems

4042 Clipper Court, Fremont, CA 94538 • TEL: (510) 490-9160 • FAX: (510) 353-0261

MATCHING CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	PARAMETER	LS358		UNITS	CONDITIONS
$ V_{BE1} - V_{BE2} $	Base Emitter Voltage Differential	0.4	TYP.	mV	$I_C = 10 \mu A$ $V_{CE} = 5V$
		1	MAX.	mV	
$\Delta(V_{BE1} - V_{BE2})/^\circ C$	Base Emitter Voltage Differential Change with Temperature	1	TYP.	$\mu V/^\circ C$	$I_C = 10 \mu A$ $V_{CE} = 5V$ $T_A = -55^\circ C$ to $+125^\circ C$
		10	MAX.	$\mu V/^\circ C$	
$ I_{B1} - I_{B2} $	Base Current Differential	5	MAX.	nA	$I_C = 10 \mu A$ $V_{CE} = 5V$
$ \Delta(I_{B1} - I_{B2})/^\circ C$	Base Current Differential Change with Temperature	0.5	MAX.	$nA/^\circ C$	$I_C = 10 \mu A$ $V_{CE} = 5V$ $T_A = -55^\circ C$ to $+125^\circ C$
h_{FE1}/h_{FE2}	DC Current Gain Differential	5	TYP.	%	$I_C = 10 \mu A$ $V_{CE} = 5V$



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 .