

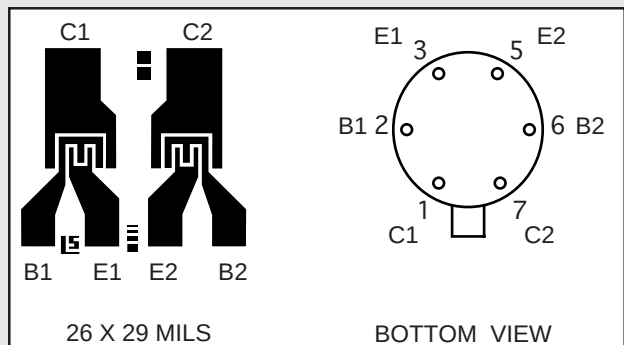
LINEAR SYSTEMS

Linear Integrated Systems

LS358

LOG CONFORMANCE MONOLITHIC DUAL PNP TRANSISTORS

FEATURES			
LOG CONFORMANCE		Δre ≤1Ω from ideal TYP.	
ABSOLUTE MAXIMUM RATINGS <u>NOTE 1</u>			
@ 25°C (unless otherwise noted)			
IC	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)

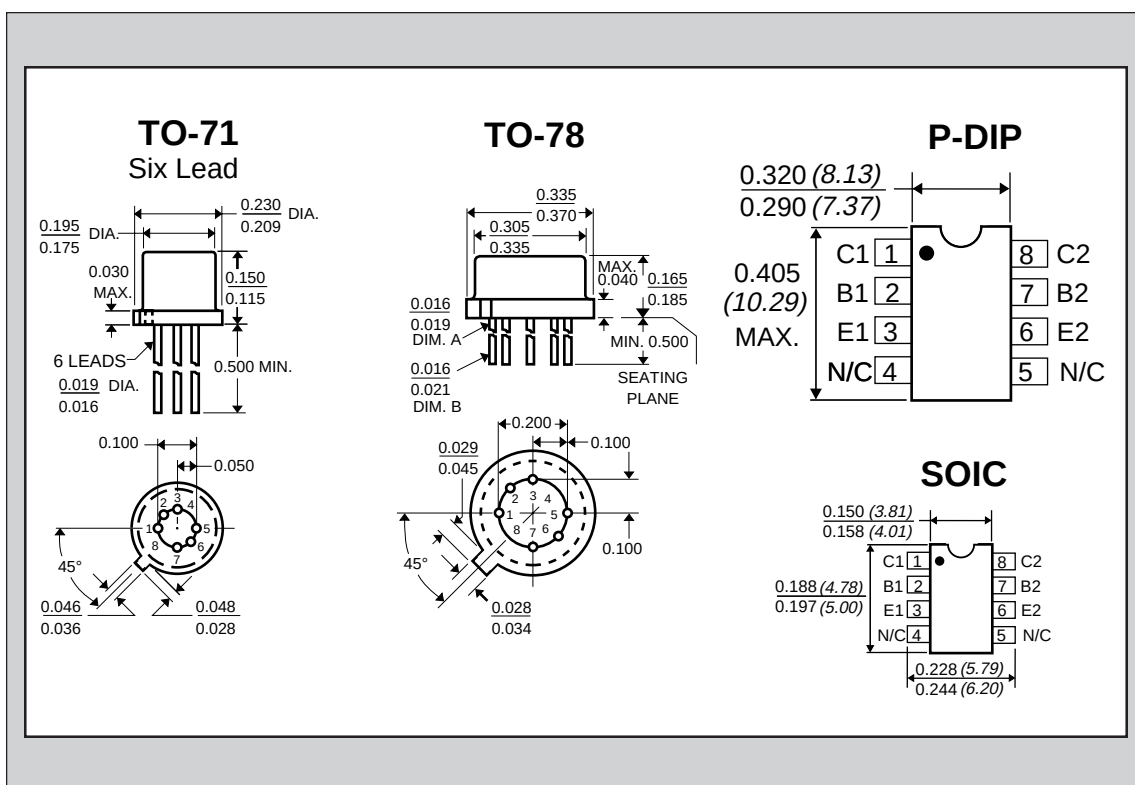
SYMBOL	CHARACTERISTICS	LS358		UNITS	CONDITIONS
Δr_e	Log Conformance	1.5		Ω	$I_C = 10-100-1000\mu A$ $V_{CE} = 5V$
BV_{CBO}	Collector-Base Breakdown Voltage	20	MIN.	V	$I_C = 10\mu A$ $I_E = 0$
BV_{CEO}	Collector to Emitter Voltage	20	MIN.	V	$I_C = 10\mu A$ $I_B = 0$
BV_{EBO}	Emitter-Base Breakdown Voltage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

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MATCHING CHARACTERISTICS @ 25°C (unless otherwise noted)

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