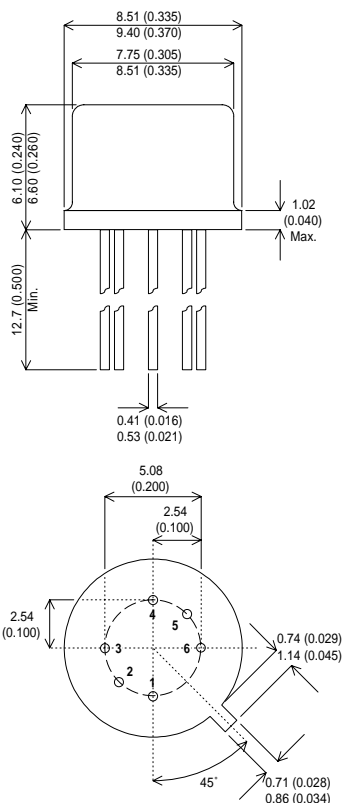


MECHANICAL DATA

Dimensions in mm (inches)



DUAL AMPLIFIER TRANSISTOR

Small Signal Dual Transistor in a TO-77 Hermetic Package.

TO-77 METAL PACKAGE

- PIN 1 – Collector
- PIN 2 – Base
- PIN 3 – Emitter
- PIN 4 – Emitter
- PIN 5 – Base
- PIN 6 – Collector

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

V_{CEO}	Collector – Emitter Voltage	60V	
V_{CER}	Collector – Emitter Voltage	80V	
V_{CBO}	Collector – Base Voltage	100V	
V_{EBO}	Emitter – Base Voltage	7V	
I_C	Collector Current	500mA	
T_J, T_{stg}	Operating and Storage Junction Temperature Range	-65 to +200°C	
		Per Side	Total Device
P_D	Total Device Dissipation @ $T_A = 25^{\circ}C$	0.5W	0.6W
	Derate above 25°C	2.86mW/°C	3.43mW/°C
P_D	Total Device Dissipation @ $T_C = 25^{\circ}C$	1.5W	3.0W
	Derate above 25°C	8.61mW/°C	17.2mW/°C

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS					
$V_{\text{CER(sus)*}}$ Collector – Emitter Breakdown Voltage	$I_C = 100\text{mA}$ $R_{\text{BE}} \leq 10\Omega$	80			V
$V_{\text{CEO(sus)*}}$ Collector – Emitter Sustaining Voltage	$I_C = 30\text{mA}$ $I_B = 0$	60			V
$V_{(\text{BR})\text{CBO}}$ Collector – Base Breakdown Voltage	$I_C = 100\mu\text{A}$ $I_E = 0$	100			V
$V_{(\text{BR})\text{EBO}}$ Emitter – Base Breakdown Voltage	$I_E = 100\mu\text{A}$ $I_C = 0$	7			V
I_{CBO} Collector Cut-off Current	$V_{\text{CB}} = 80\text{V}$ $I_E = 0$ $T_A = 150^\circ\text{C}$			0.002	μA
				10	
I_{EBO} Emitter Cut-off Current	$V_{\text{BE}} = 5\text{V}$ $I_C = 0$			2.0	nA
ON CHARACTERISTICS					
h_{FE} DC Current Gain	$I_C = 10\mu\text{A}$ $V_{\text{CE}} = 5\text{V}$	25		75	—
	$I_C = 100\mu\text{A}$ $V_{\text{CE}} = 5\text{V}$	30		90	
	$I_C = 1\text{mA}$ $V_{\text{CE}} = 5\text{V}$	40		120	
	$I_C = 10\text{mA}$ $V_{\text{CE}} = 5\text{V}$	50		150	
$V_{\text{CE(sat)}}$ Collector – Emitter Saturation Voltage	$I_C = 50\text{mA}$ $I_B = 5\text{mA}$			0.6	V
$V_{\text{BE(sat)}}$ Base – Emitter Saturation Voltage	$I_C = 50\text{mA}$ $I_B = 5\text{mA}$			0.9	
SMALL SIGNAL CHARACTERISTICS					
f_T Current Gain Bandwidth Product	$I_C = 50\text{mA}$ $V_{\text{CE}} = 10\text{V}$ $f = 20\text{MHz}$	60			MHz
C_{ob} Output Capacitance	$I_E = 0$ $V_{\text{CB}} = 10\text{V}$ $f = 1\text{MHz}$			15	pF
C_{ib} Input Capacitance	$I_C = 0$ $V_{\text{BE}} = 0.5\text{V}$ $f = 1\text{MHz}$			85	pF
h_{ie} Input Impedance	$I_C = 1\text{mA}$ $V_{\text{CE}} = 5\text{V}$ $f = 1\text{kHz}$	1000		4000	Ω
h_{ib} Input Impedance	$I_C = 1\text{mA}$ $V_{\text{CB}} = 10\text{V}$ $f = 1\text{kHz}$	20		30	Ω
h_{fe} Small Signal Current Gain	$I_C = 1\text{mA}$ $V_{\text{CE}} = 5\text{V}$	50		150	—
h_{oe} Output Admittance	$f = 1\text{kHz}$			16	μmhos
MATCHING CHARACTERISTICS					
$h_{\text{FE1}}/h_{\text{FE2}}$ DC Current Gain Ratio ¹	$I_C = 100\mu\text{A}$ $V_{\text{CE}} = 5\text{V}$	0.9		1.0	—
	$I_C = 1\text{mA}$ $V_{\text{CE}} = 5\text{V}$	0.9		1.0	
$ V_{\text{BE1}} - V_{\text{BE2}} $ Base – Emitter Voltage Differential	$I_C = 100\mu\text{A}$ $V_{\text{CE}} = 5\text{V}$			3.0	mV
	$I_C = 1\text{mA}$ $V_{\text{CE}} = 5\text{V}$			5.0	
$\frac{\Delta(V_{\text{BE1}} - V_{\text{BE2}})}{\Delta T}$ Base – Emitter Voltage Differential Change Due To Temperature	$I_C = 100\mu\text{A}$ $V_{\text{CE}} = 5\text{V}$ $T_A = -55 \text{ to } +125^\circ\text{C}$			5.0	$\mu\text{V}/^\circ\text{C}$

* Pulse Test: $t_p \leq 300\mu\text{s}$, $\delta \leq 2\%$.

1) The lowest h_{FE} reading is taken as h_{FE1} for this ratio.