

2N5794

### **MECHANICAL DATA** Dimensions in mm (inches)



# **DUAL NPN** PLANAR TRANSISTORS IN **TO77 PACKAGE**

### TO-77 PACKAGE (MO - 002AF)

**Underside View** 

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

#### **ABSOLUTE MAXIMUM RATINGS** $(T_{amb} = 25^{\circ}C \text{ unless otherwise stated})$

			EACH SIDE	TOTAL DEVICE
V <sub>CBO</sub>	Collector – Base Voltage		75V	
V <sub>CEO</sub>	Collector – Emitter Voltage		40V	
V <sub>EBO</sub>	Emitter – Base Voltage		6V	
I <sub>C</sub>	Continuous Collector Current		600mA	
P <sub>D</sub>	Total Device Dissipation	T <sub>AMB</sub> = 25°C	500mW	600mW
		Derate above 25°C	2.9mW / °C	3.4Wm/ °C
P <sub>D</sub>	Total Device Dissipation	$T_{C} = 25^{\circ}C$	1.2W	2.0W
		Derate above 25°C	6.9mW / °C	11.43mW / °C
T <sub>STG</sub>	Storage Temperature Range	–65 to 200°C		

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## **ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25^{\circ}C$ unless otherwise stated)

	Parameter	Test Conditions 1	Min.	Тур.	Max.	Unit			
INDIVIDUAL TRANSISTOR CHARACTERISTICS									
V <sub>(BR)CBO</sub>	Collector – Base Breakdown Voltage	$I_{\rm C} = 10\mu A$ $I_{\rm E} = 0$	75						
V <sub>(BR)CEO*</sub>	Collector – Emitter Breakdown Voltage	$I_{\rm C} = 10 {\rm mA}$ $I_{\rm B} = 0$	40			V			
V <sub>(BR)EBO</sub>	Emitter –Base Breakdown Voltage	$I_E = 10\mu A$ $I_C = 0$	6						
I <sub>CBO</sub>	Collector Cut-off Current	$V_{CB} = 50V$ $I_E = 0$			10	nA			
I <sub>EBO</sub>	Emitter Cut-off Current	$V_{EB} = 4.0V$ $I_C = 0$			10	nA			
I <sub>C1-C2</sub>	Collector1-2 Leakage Current	$V_{C1-C2} = \pm 50V$			±1.0	nA			
h <sub>FE*</sub> DC Current Gair		$V_{CE} = 10V$ $I_{C} = 100\mu A$	35			_			
		$V_{CE} = 10V$ $I_C = 1mA$	50						
	DC Current Coin	$V_{CE} = 10V$ $I_C = 10mA$	75						
	DC Current Gain	V <sub>CE</sub> = 1.0V I <sub>C</sub> = 150mA	50						
		V <sub>CE</sub> = 10V I <sub>C</sub> = 150mA	100		300				
		V <sub>CE</sub> = 10V I <sub>C</sub> = 300mA	40						
V	Base – Emitter Saturation Voltage	I <sub>C</sub> =150mA I <sub>B</sub> = 15mA	0.6		1.2	V			
VBE(sat)*		I <sub>C</sub> =300mA I <sub>B</sub> = 30mA			1.8				
V <sub>CE(sat)*</sub>	Collector – Emitter saturation Voltage	$I_{\rm C} = 150 {\rm mA}$ $I_{\rm B} = 15 {\rm mA}$			0.3	V			
		$I_{\rm C}$ =300mA $I_{\rm B}$ = 30mA			0.9				
SMALL SIGNAL CHARACTERISTICS									
f <sub>T</sub>	Transition Frequency	I <sub>C</sub> = 20mA V <sub>CE</sub> = 20V	250			MHz			
		f = 100MHz							
C <sub>cb</sub>	Collector - base Capacitance	$V_{CB} = 10V$ $I_E = 0$ f = 100kHz		8.0		pF			
C <sub>eb</sub>	Emitter- base Capacitance	$V_{EB} = 0.5V I_C = 0 f = 100kHz$		25		pF			
SWITCHING CHARACTERISTICS									
t <sub>d</sub>	Delay Time	$V_{CC} = 30V$ $V_{BE(off)} = 0.5V$		15		ns			
t <sub>r</sub>	Rise Time	I <sub>C</sub> = 150mA I <sub>B1</sub> =15mA		30		ns			
t <sub>s</sub>	Storage Time	$V_{CC} = 30V$ $I_C = 150mA$		250		ns			
t <sub>f</sub>	Fall Time	I <sub>B1</sub> = I <sub>B2</sub> = 15mA		60		ns			

\* Pulse Width  $\leq 300 \mu s$  , Duty Cycle < 2%

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