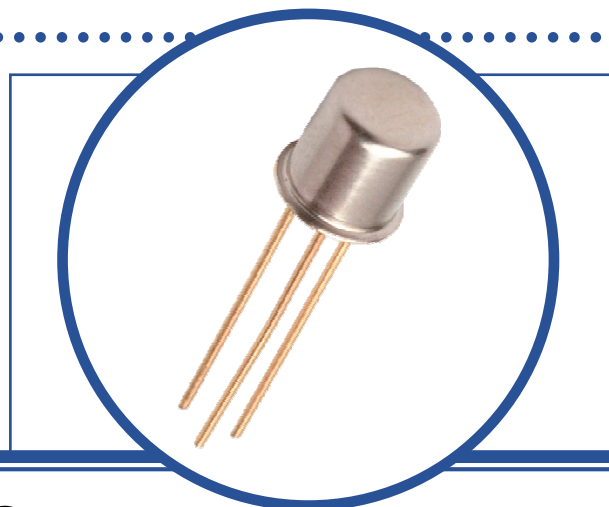


SILICON PLANAR EPITAXIAL NPN TRANSISTOR

2N2896X

- High Voltage
- Hermetic TO-18 Metal package.
- Ideally suited for General Purpose Amplifier Applications
- Screening Options Available



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

V_{CBO}	Collector – Base Voltage	140V
V_{CEO}	Collector – Emitter Voltage	90V
V_{CER}	Collector – Emitter Voltage	140V
V_{EBO}	Emitter – Base Voltage	7V
I_C	Continuous Collector Current	1.0A
P_D	Total Power Dissipation at $T_A = 25^\circ\text{C}$	500mW
	Derate Above 25°C	2.86mW/ $^\circ\text{C}$
P_D	Total Power Dissipation at $T_C = 25^\circ\text{C}$	1.8W
	Derate Above 25°C	10.3mW/ $^\circ\text{C}$
T_J	Junction Temperature Range	-65 to +200 $^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65 to +200 $^\circ\text{C}$

THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient			350	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance, Junction To Case			97	$^\circ\text{C/W}$

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.



SILICON PLANAR EPITAXIAL NPN TRANSISTOR 2N2896X

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$V_{(BR)CER}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$ $R_{BE} = 10\Omega$	140			V
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$ $I_B = 0$	90			
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 0.1\text{mA}$ $I_E = 0$	140			
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 0.1\text{mA}$ $I_C = 0$	7			
I_{CBO}	Collector Cut-Off Current	$V_{CB} = 60\text{V}$ $I_E = 0$			0.01	μA
		$V_{CB} = 90\text{V}$ $I_E = 0$			0.01	
		$T_A = 150^\circ\text{C}$			10	
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 5\text{V}$ $I_C = 0$			0.01	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 1.0\text{mA}$ $V_{CE} = 10\text{V}$	35			
		$I_C = 150\text{mA}$ $V_{CE} = 10\text{V}$	60		230	
		$I_C = 10\text{mA}$ $V_{CE} = 10\text{V}$ $T_A = -55^\circ\text{C}$	20			
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 150\text{mA}$ $I_B = 15\text{mA}$			0.6	V
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 150\text{mA}$ $I_B = 15\text{mA}$			1.2	

DYNAMIC CHARACTERISTICS

f_T	Transition Frequency	$I_C = 50\text{mA}$ $V_{CE} = 10\text{V}$ $f = 50\text{MHz}$	90			MHz
C_{obo}	Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			15	pF
C_{ibo}	Input Capacitance	$V_{EB} = 0.5\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$			80	
h_{fe}	Small Signal Current Gain	$I_C = 5\text{mA}$ $V_{CE} = 5\text{V}$ $f = 1.0\text{KHz}$	50		275	

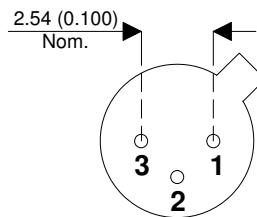
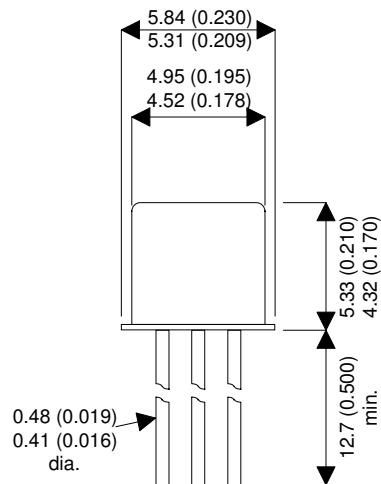
Notes

(1) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$

SILICON PLANAR EPITAXIAL NPN TRANSISTOR 2N2896X

MECHANICAL DATA

Dimensions in mm (inches)



TO-18 (TO-206AA) METAL PACKAGE Underside View

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector