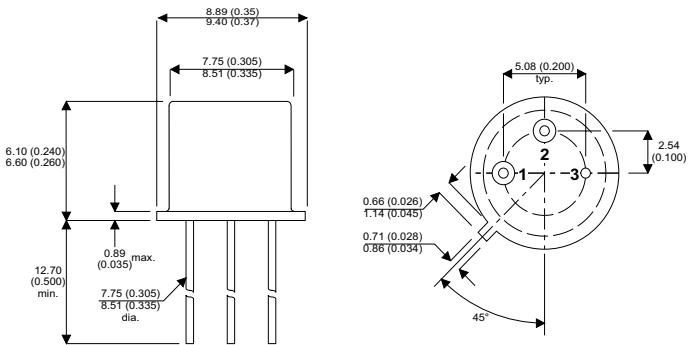


**SEME  
LAB**

**2N5681  
2N5682**

## MECHANICAL DATA

Dimensions in mm (inches)



## NPN SILICON TRANSISTORS

### DESCRIPTION

The 2N5681 and 2N5682 are silicon epitaxial planar NPN transistors in jedec TO-39 metal case intended for use as drivers for high power transistors in general purpose, amplifier and switching circuits

The complementary PNP types are the 2N5679 and 2N5680 respectively

### TO-39

Pin 1 – Emitter

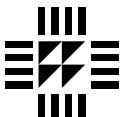
Pin 2 – Base

Pin 3 – Collector

### ABSOLUTE MAXIMUM RATINGS

$T_{CASE} = 25^\circ\text{C}$  unless otherwise stated

		2N5681	2N5682
$V_{CBO}$	Collector – Base Voltage ( $I_E = 0$ )	100V	120V
$V_{CEO}$	Collector – Emitter Voltage ( $I_B = 0$ )	100V	120V
$V_{EBO}$	Emitter – Base Voltage ( $I_C = 0$ )		4V
$I_C$	Continuous Collector Current		1A
$I_B$	Base Current		0.5A
$P_{tot}$	Total Dissipation at $T_{case} \leq 25^\circ\text{C}$ $T_{amb} \leq 25^\circ\text{C}$		10W
			1W
$T_{stg}$	Operating and Storage Temperature Range		-65 to +200°C
$T_j$	Junction temperature		200°C



**SEME  
LAB**

**2N5681  
2N5682**

## Thermal Data

$R_{thj-case}$	Thermal Resistance Junction-case	Max	17.5	$^{\circ}\text{C/W}$
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	175	$^{\circ}\text{C/W}$

## Electrical Characteristics ( $T_{case} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	$I_E = 0$ <b>for 2N5681</b> $V_{CB} = 100\text{V}$ <b>for 2N5682</b> $V_{CB} = 120\text{V}$			1 1	$\mu\text{A}$
$I_{CEV}$	$V_{BE} = -1.5$ <b>for 2N5681</b> $V_{CE} = 100\text{V}$ <b>for 2N5682</b> $V_{CE} = 120\text{V}$			1 1	$\mu\text{A}$
	$T_{case} = 150^{\circ}\text{C}$ <b>for 2N5681</b> $V_{CE} = 100\text{V}$ <b>for 2N5682</b> $V_{CE} = 120\text{V}$			1 1	$\text{mA}$
$I_{CEO}$	$I_B = 0$ <b>for 2N5681</b> $V_{CE} = 70\text{V}$ <b>for 2N5682</b> $V_{CE} = 80\text{V}$			10 10	$\mu\text{A}$
$I_{EBO}$	$I_C = 0$ $V_{EB} = 4\text{V}$			1	
$V_{CEO(sus)*}$	$I_B = 0$ $I_C = -10\text{mA}$ <b>for 2N5681</b> <b>for 2N5682</b>	100 120			
$V_{CE(sat)*}$	$I_C = 250\text{mA}$ $I_B = 25\text{mA}$ $I_C = 500\text{mA}$ $I_B = 50\text{mA}$ $I_C = 1\text{A}$ $I_B = 200\text{mA}$			0.6 1 2	V
$V_{BE*}$	$I_C = 250\text{mA}$ $V_{CE} = 2\text{V}$			1	
$h_{FE*}$	$I_C = 250\text{mA}$ $V_{CE} = 2\text{V}$ $I_C = 1\text{A}$ $V_{CE} = 2\text{V}$	40 5		150	
$f_T$	$I_C = 100\text{mA}$ $V_{CE} = 10\text{V}$ $f = 10\text{MHz}$	30			$\text{MHz}$
$C_{CBO}$	$I_E = 0$ $V_{CB} = 20\text{V}$ $f = 1\text{MHz}$			50	$\text{pF}$
$h_{fe}$	$I_C = 0.2\text{A}$ $V_{CE} = 1.5\text{V}$ $f = 1\text{KHz}$	40			

\* Pulse test  $t_p = 300\mu\text{s}$ ,  $\delta < 2\%$