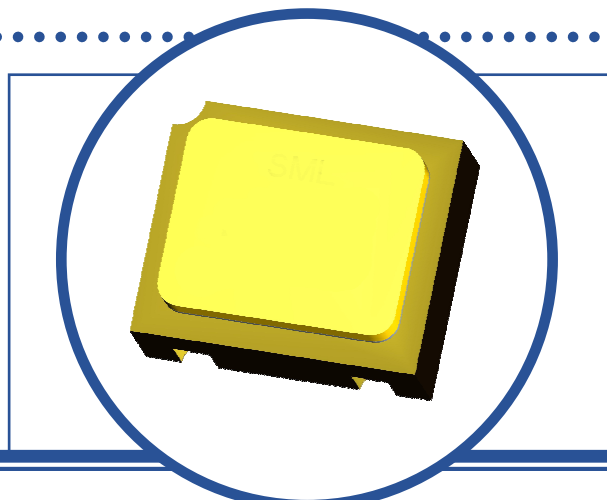


# SILICON PLANAR EPITAXIAL PNP TRANSISTOR

## 2N2905ACSM

- Low Power, High Speed Saturated Switching
- Hermetic Surface Mounted Package.
- Ideally suited for High Speed Switching and General Purpose Applications
- Screening Options Available



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

$V_{CBO}$	Collector – Base Voltage	-60V
$V_{CEO}$	Collector – Emitter Voltage	-60V
$V_{EBO}$	Emitter – Base Voltage	-5V
$I_C$	Continuous Collector Current	-600mA
$P_D$	Total Power Dissipation at $T_A = 25^\circ\text{C}$ Derate Above $37.5^\circ\text{C}$	500mW 3.08mW/ $^\circ\text{C}$
$T_J$	Junction Temperature Range	-65 to $+200^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65 to $+200^\circ\text{C}$

### THERMAL PROPERTIES (Each Device)

Symbols	Parameters	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	325	$^\circ\text{C}/\text{W}$

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 PNP TRANSISTOR 2N2905ACSM

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
V <sub>(BR)CEO</sub> <sup>(1)</sup>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = -10mA I <sub>B</sub> = 0	-60			V
I <sub>CBO</sub>	Collector Cut-Off Current	V <sub>CB</sub> = -60V I <sub>E</sub> = 0			-10	μA
		V <sub>CB</sub> = -50V I <sub>E</sub> = 0			-10	nA
		T <sub>A</sub> = 150°C			-10	μA
I <sub>EBO</sub>	Emitter Cut-Off Current	V <sub>EB</sub> = -5V I <sub>C</sub> = 0			-10	μA
		V <sub>EB</sub> = -3.5V I <sub>C</sub> = 0			-50	nA
I <sub>CES</sub>	Collector Cut-Off Current	V <sub>CE</sub> = -60V			-1.0	μA
V <sub>CE(sat)</sub> <sup>(1)</sup>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -150mA I <sub>B</sub> = -15mA			-0.4	V
		I <sub>C</sub> = -500mA I <sub>B</sub> = -50mA			-1.6	
V <sub>BE(sat)</sub> <sup>(1)</sup>	Base-Emitter Saturation Voltage	I <sub>C</sub> = -150mA I <sub>B</sub> = -15mA			-1.3	
		I <sub>C</sub> = -500mA I <sub>B</sub> = -50mA			-2.6	
h <sub>FE</sub> <sup>(1)</sup>	Forward-current transfer ratio	I <sub>C</sub> = -0.1mA V <sub>CE</sub> = -10V	75			
		I <sub>C</sub> = -1.0mA V <sub>CE</sub> = -10V	100		450	
		T <sub>A</sub> = -55°C	50			
		I <sub>C</sub> = -10mA V <sub>CE</sub> = -10V	100			
		I <sub>C</sub> = -150mA V <sub>CE</sub> = -10V	100		300	
		I <sub>C</sub> = -500mA V <sub>CE</sub> = -10V	50			

## DYNAMIC CHARACTERISTICS

h <sub>fe</sub>	Small signal forward-current transfer ratio	I <sub>C</sub> = -50mA V <sub>CE</sub> = -20V f = 100MHz	2			
h <sub>fe</sub>	Small Signal Current Gain	I <sub>C</sub> = -1.0mA V <sub>CE</sub> = -10V f = 1.0KHz	100			
C <sub>obo</sub>	Output Capacitance	V <sub>CB</sub> = -10V I <sub>E</sub> = 0 f = 1.0MHz			8	pF
C <sub>ibo</sub>	Input Capacitance	V <sub>EB</sub> = -2V I <sub>C</sub> = 0 f = 1.0MHz			30	
t <sub>on</sub>	Turn-On Time	I <sub>C</sub> = -150mA V <sub>CC</sub> = -30V I <sub>B1</sub> = -15mA			45	ns
t <sub>off</sub>	Turn-Off Time	I <sub>C</sub> = -150mA V <sub>CC</sub> = -30V I <sub>B1</sub> = -I <sub>B2</sub> = -15mA			300	

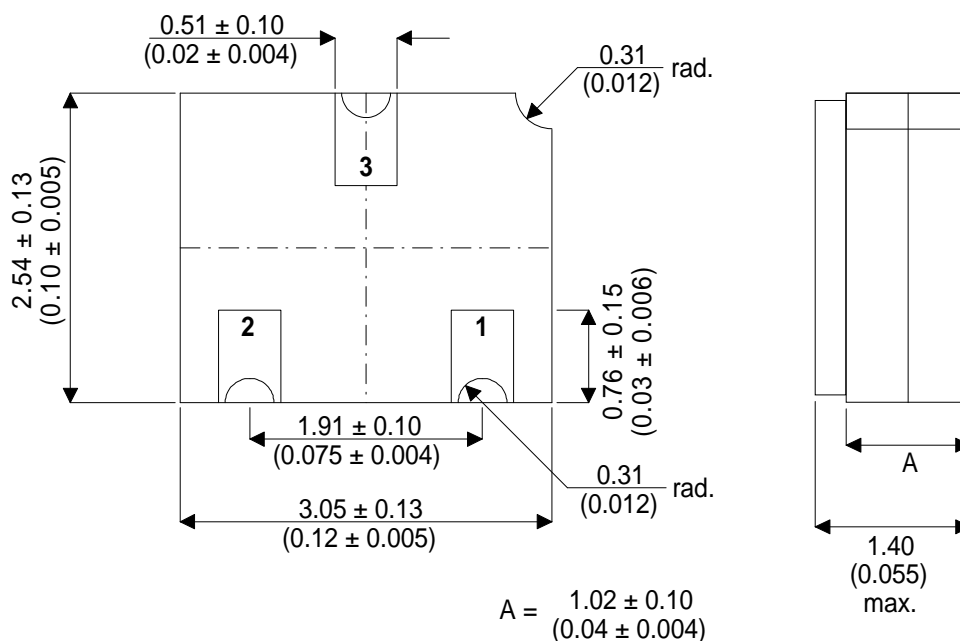
### Notes

(1) Pulse Width ≤ 300us, δ ≤ 2%

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## MECHANICAL DATA

Dimensions in mm (inches)



### LCC1

#### Underside View

Pad 1 - Base

Pad 2 - Emitter

Pad 3 - Collector