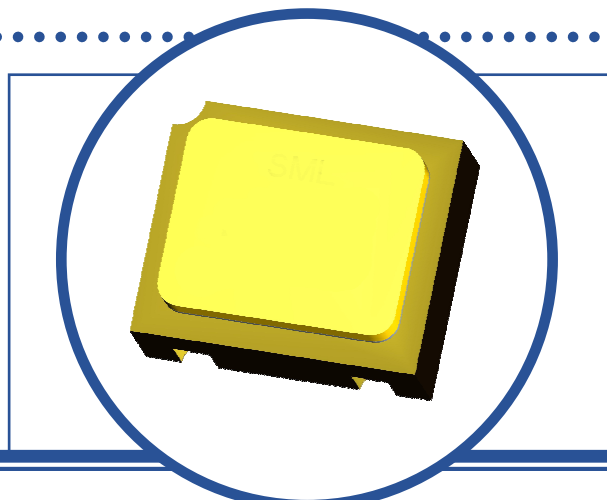


# SILICON PLANAR EPITAXIAL PNP TRANSISTOR

## 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 $T_A = 25^\circ\text{C}$	500mW
	Derate Above $37.5^\circ\text{C}$	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 ( $T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = -10\text{mA}$ $I_B = 0$	-60			V
$I_{CBO}$	Collector Cut-Off Current	$V_{CB} = -60\text{V}$ $I_E = 0$			-10	$\mu\text{A}$
		$V_{CB} = -50\text{V}$ $I_E = 0$			-10	nA
		$T_A = 150^\circ\text{C}$			-10	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-Off Current	$V_{EB} = -5\text{V}$ $I_C = 0$			-10	$\mu\text{A}$
		$V_{EB} = -3.5\text{V}$ $I_C = 0$			-50	nA
$I_{CES}$	Collector Cut-Off Current	$V_{CE} = -60\text{V}$			-1.0	$\mu\text{A}$
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = -150\text{mA}$ $I_B = -15\text{mA}$			-0.4	V
		$I_C = -500\text{mA}$ $I_B = -50\text{mA}$			-1.6	
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = -150\text{mA}$ $I_B = -15\text{mA}$			-1.3	
		$I_C = -500\text{mA}$ $I_B = -50\text{mA}$			-2.6	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = -0.1\text{mA}$ $V_{CE} = -10\text{V}$	75			
		$I_C = -1.0\text{mA}$ $V_{CE} = -10\text{V}$	100		450	
		$T_A = -55^\circ\text{C}$	50			
		$I_C = -10\text{mA}$ $V_{CE} = -10\text{V}$	100			
		$I_C = -150\text{mA}$ $V_{CE} = -10\text{V}$	100		300	
		$I_C = -500\text{mA}$ $V_{CE} = -10\text{V}$	50			

## DYNAMIC CHARACTERISTICS

$ h_{fe} $	Small signal forward-current transfer ratio	$I_C = -50\text{mA}$ $V_{CE} = -20\text{V}$ $f = 100\text{MHz}$	2			
$h_{fe}$	Small Signal Current Gain	$I_C = -1.0\text{mA}$ $V_{CE} = -10\text{V}$ $f = 1.0\text{KHz}$	100			
$C_{obo}$	Output Capacitance	$V_{CB} = -10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			8	$\mu\text{F}$
$C_{ibo}$	Input Capacitance	$V_{EB} = -2\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$			30	
$t_{on}$	Turn-On Time	$I_C = -150\text{mA}$ $V_{CC} = -30\text{V}$ $I_{B1} = -15\text{mA}$			45	ns
$t_{off}$	Turn-Off Time	$I_C = -150\text{mA}$ $V_{CC} = -30\text{V}$ $I_{B1} = -I_{B2} = -15\text{mA}$			300	

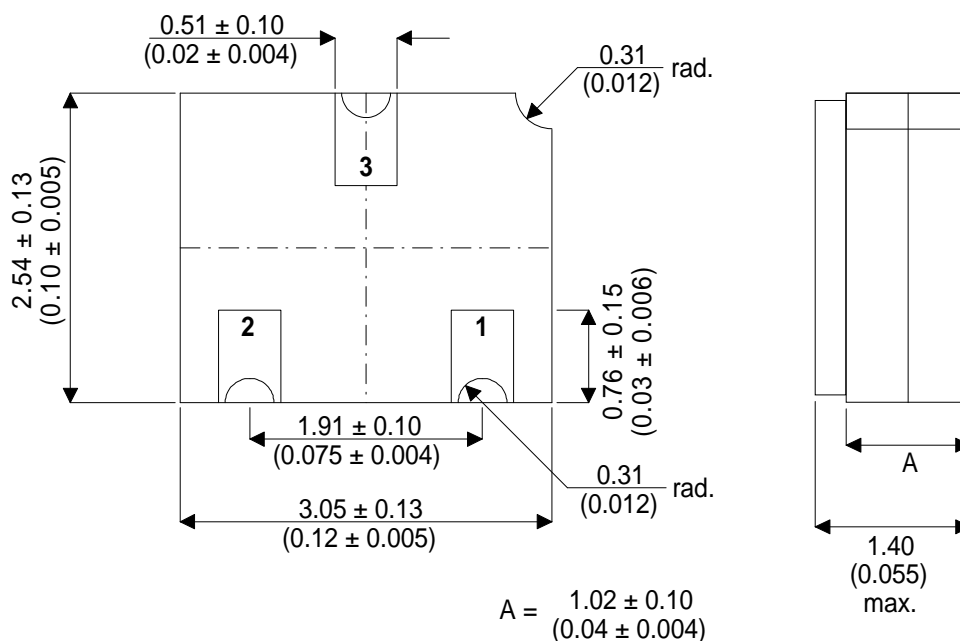
### Notes

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

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## MECHANICAL DATA

Dimensions in mm (inches)



### LCC1

#### Underside View

Pad 1 - Base

Pad 2 - Emitter

Pad 3 - Collector