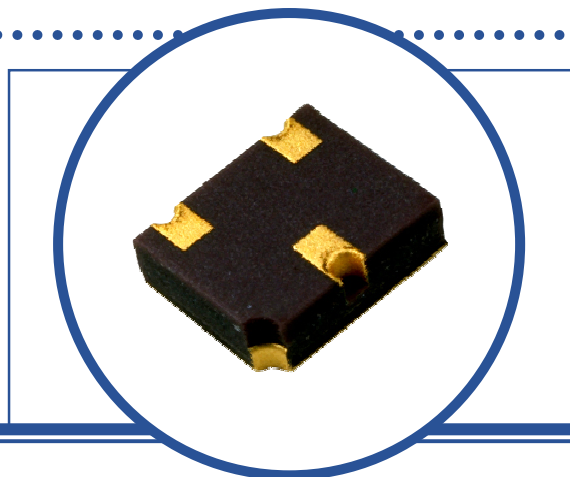


# SILICON PLANAR EPITAXIAL NPN TRANSISTOR

## 2N3114CSM

- High Voltage
- Hermetic Ceramic Surface Mount Package
- Designed For Low Noise General Purpose Amplifiers, Driver Stages and Signal Processing Applications
- Screening Options Available



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

$V_{CBO}$	Collector – Base Voltage	150V
$V_{CEO}$	Collector – Emitter Voltage	150V
$V_{EBO}$	Emitter – Base Voltage	5V
$I_C$	Continuous Collector Current	150mA
$P_D$	Total Power Dissipation at $T_A = 25^\circ\text{C}$ Derate Above $25^\circ\text{C}$	350mW 2mW/ $^\circ\text{C}$
$T_J$	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			500	$^\circ\text{C}/\text{W}$

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.

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$I_{CEO}$	Collector-Cut-Off Current	$V_{CE} = 150\text{V}$ $I_B = 0$			100	$\mu\text{A}$
$I_{CBO}$	Collector-Cut-Off Current	$V_{CB} = 150\text{V}$ $I_E = 0$			10	$\mu\text{A}$
		$V_{CB} = 100\text{V}$ $I_E = 0$ $T_A = 150^\circ\text{C}$			10	$\mu\text{A}$
$I_{EBO}$	Emitter-Cut-Off Current	$V_{EB} = 5\text{V}$ $I_C = 0$			1.0	$\mu\text{A}$
		$V_{EB} = 4\text{V}$ $I_C = 0$			100	$\text{nA}$
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 0.1\text{mA}$ $V_{CE} = 10\text{V}$	15	35		
		$I_C = 30\text{mA}$ $V_{CE} = 10\text{V}$ $T_A = 150^\circ\text{C}$	30	60	120	
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 50\text{mA}$ $I_B = 5\text{mA}$			1.0	V
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 50\text{mA}$ $I_B = 5\text{mA}$			0.9	

## DYNAMIC CHARACTERISTICS

$ h_{fe} $	Small signal forward-current transfer ratio	$I_C = 30\text{mA}$ $V_{CE} = 10\text{V}$ $f = 20\text{MHz}$	2			
$C_{obo}$	Output Capacitance	$V_{CB} = 20\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			9	$\text{pF}$
$C_{ibo}$	Input Capacitance	$V_{EB} = 0.5\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$			80	$\text{pF}$

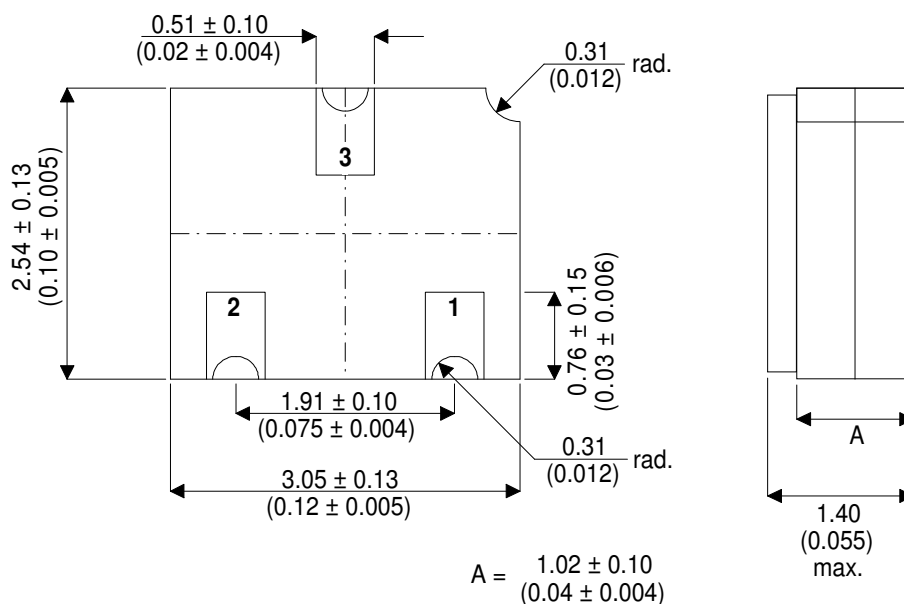
### Notes

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

# SILICON PLANAR EPITAXIAL NPN TRANSISTOR 2N3114CSM

## MECHANICAL DATA

Dimensions in mm (inches)



## LCC1

### Underside View

Pad 1 - Base

Pad 2 - Emitter

Pad 3 - Collector