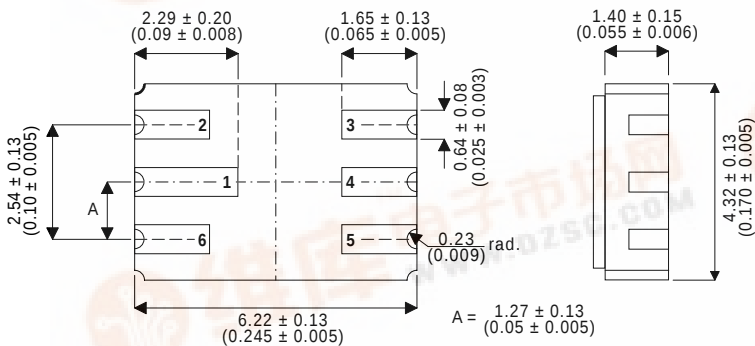


2N2907ADCSM

MECHANICAL DATA

Dimensions in mm (inches)

DUAL HIGH SPEED, MEDIUM POWER  
PNP SWITCHING TRANSISTOR IN A  
HERMETICALLY SEALED  
CERAMIC SURFACE MOUNT PACKAGE  
FOR HIGH RELIABILITY APPLICATIONS



FEATURES

- DUAL SILICON PLANAR EPITAXIAL PNP TRANSISTORS
- HERMETIC CERAMIC SURFACE MOUNT PACKAGE
- CECC SCREENING OPTIONS
- SPACE QUALITY LEVELS OPTIONS
- HIGH SPEED SATURATED SWITCHING

LCC2 PACKAGE  
Underside View

- PAD 1 – Collector 1      PAD 4 – Collector 2  
PAD 2 – Base 1      PAD 5 – Emitter 2  
PAD 3 – Base 2      PAD 6 – Emitter 1

APPLICATIONS:

Hermetically sealed dual surface mount version of the popular 2N2907A for high reliability / space applications requiring small size and low weight devices.

ABSOLUTE MAXIMUM RATINGS (T<sub>C</sub> = 25°C unless otherwise stated)

| PER SIDE                          |                                           |              |
|-----------------------------------|-------------------------------------------|--------------|
| V <sub>CBO</sub>                  | Collector - Base Voltage                  | –60V         |
| V <sub>CEO</sub>                  | Collector - Emitter Voltage               | –60V         |
| V <sub>EBO</sub>                  | Emitter - Base Voltage                    | –5V          |
| I <sub>C</sub>                    | Collector Current                         | 600mA        |
| P <sub>D</sub>                    | Total Device Dissipation                  | 350mW        |
| P <sub>D</sub>                    | Derate above 50°C                         | 2.0mW / °C   |
| TOTAL DEVICE                      |                                           |              |
| R <sub>θJA</sub>                  | Thermal Resistance Junction to Ambient    | 130°C / W    |
| R <sub>θJC</sub>                  | Thermal Resistance Junction to Case       | 60°C / W     |
| T <sub>STG</sub> , T <sub>J</sub> | Storage Temperature, Operating temp range | –55 to 200°C |



**ELECTRICAL CHARACTERISTICS PER SIDE** ( $T_C = 25^\circ\text{C}$  unless otherwise stated)

| Parameter                                              | Test Conditions                              | Min. | Typ. | Max. | Unit          |
|--------------------------------------------------------|----------------------------------------------|------|------|------|---------------|
| $V_{CE(sus)}^*$ Collector – Emitter Sustaining Voltage | $I_C = 10\text{mA}$                          | –60  |      |      | V             |
| $V_{(BR)CBO}^*$ Collector – Base Breakdown Voltage     | $I_C = 10\mu\text{A}$                        | –60  |      |      | V             |
| $V_{(BR)EBO}^*$ Emitter – Base Breakdown Voltage       | $I_E = 10\mu\text{A}$ $I_C = 0$              | –5   |      |      | V             |
| $I_{CEX}^*$ Collector Cut-off Current                  | $V_{CE} = 30\text{V}$ $V_{BE} = 0.5\text{V}$ |      |      | 50   | nA            |
| $I_{CBO}^*$ Collector – Base Cut-off Current           | $I_E = 0$ $V_{CB} = 50\text{V}$              |      |      | 0.01 | $\mu\text{A}$ |
|                                                        | $T_C = 125^\circ\text{C}$                    |      |      | 10   |               |
| $I_{BEO}$ Base Cut-off Current                         | $V_{CE} = 30\text{V}$ $V_{BE} = 0.5\text{V}$ |      |      | 50   | nA            |
| $V_{CE(sat)}^*$ 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 |               |
| $V_{BE(sat)}^*$ Base – Emitter Saturation Voltage      | $I_C = 150\text{mA}$ $I_B = 15\text{mA}$     |      |      | –1.3 | V             |
|                                                        | $I_C = 500\text{mA}$ $I_B = 50\text{mA}$     |      |      | –2.6 |               |
| $h_{FE}^*$ DC Current Gain                             | $I_C = 0.1\text{mA}$ $V_{CE} = 10\text{V}$   | 75   |      |      | —             |
|                                                        | $I_C = 1\text{mA}$ $V_{CE} = 10\text{V}$     | 100  |      |      |               |
|                                                        | $I_C = 10\text{mA}$ $V_{CE} = 10\text{V}$    | 100  |      |      |               |
|                                                        | $I_C = 150\text{mA}$ $V_{CE} = 10\text{V}$   | 100  |      | 300  |               |
|                                                        | $I_C = 500\text{mA}$ $V_{CE} = 10\text{V}$   | 50   |      |      |               |

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

**DYNAMIC CHARACTERISTICS PER SIDE** ( $T_C = 25^\circ\text{C}$  unless otherwise stated)

| Parameter                   | Test Conditions                                               | Min. | Typ. | Max. | Unit |
|-----------------------------|---------------------------------------------------------------|------|------|------|------|
| $f_T$ Transition Frequency  | $I_C = 50\text{mA}$ $V_{CE} = 20\text{V}$ $f = 100\text{MHz}$ | 200  |      |      | MHz  |
| $C_{ob}$ Output Capacitance | $V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$           |      |      | 8    | pF   |
| $C_{ib}$ Input Capacitance  | $V_{BE} = 2\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$            |      |      | 30   | pF   |

**SWITCHING CHARACTERISTICS PER SIDE (RESISTIVE LOAD)**

( $T_C = 25^\circ\text{C}$  unless otherwise stated)

| Parameter               | Test Conditions                                                                 | Min. | Typ. | Max. | Unit |
|-------------------------|---------------------------------------------------------------------------------|------|------|------|------|
| $t_{on}$ Turn-on Time   | $V_{CC} = 30\text{V}$<br>$I_C = 150\text{mA}$<br>$I_{B1} = 15\text{mA}$         |      | 26   | 45   | ns   |
| $t_d$ Delay Time        |                                                                                 |      | 6.0  | 10   |      |
| $t_r$ Rise Time         |                                                                                 |      | 20   | 40   |      |
| $t_{off}$ Turn-off Time | $V_{CC} = 6\text{V}$<br>$I_C = 150\text{mA}$<br>$I_{B1} = I_{B2} = 15\text{mA}$ |      | 70   | 100  | ns   |
| $t_s$ Storage Time      |                                                                                 |      | 50   | 80   |      |
| $t_f$ Fall Time         |                                                                                 |      | 20   | 30   |      |