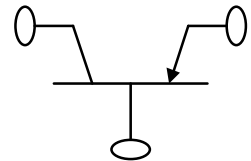


## DIE SPECIFICATION

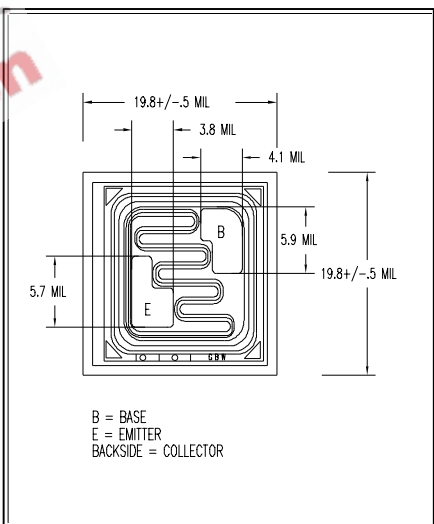
### SWITCHING TRANSISTOR PNP SILICON



#### FEATURES:

- ELECTRICAL PERFORMANCE I.A.W. MIL-PRF-19500/291
- AVAILABLE IN WAFER OR CHIP FORM FOR HYBRID APPLICATIONS
- GENERAL PURPOSE-HIGH SPEED SWITCHING APPLICATIONS
- LOW  $V_{CE(sat)}$ : .4V @  $I_C = 150 \text{ mAdc}$

**PHYSICAL DIMENSIONS**



#### Absolute Maximum Ratings:

| Symbol         | Parameter                                      | Limit       | Unit |
|----------------|--|-------------|------|
| $V_{ce}$       | Collector-Emitter Voltage                      | 60          | Vdc  |
| $V_{cb}$       | Collector-Base Voltage                         | 60          | Vdc  |
| $V_{eb}$       | Emitter-Base Voltage                           | 5.0         | Vdc  |
| $I_c$          | Collector Current- Continuous                  | 600         | mAdc |
| $T_j, T_{stg}$ | Operating Junction & Storage Temperature Range | -65 to +200 | °C   |

**Packaging Options:**  
W: Wafer (100% probed)    U: Wafer (sample probed)  
D: Chip (Waffle Pack)    B: Chip (Vial)  
V: Chip (Waffle Pack, 100% visually inspected)    X: Other

**Processing Options:**  
Standard: Capable of JANTXV applications (No Suffix)  
Suffix C: Commercial  
Suffix S: Capable of S-Level equivalent applications

**Metallization Options:**  
Standard: Al Top    /    Au Backside (No Dash #)  
Dash 1: Al Top    /    TiPdAg Backside

**ORDERING INFORMATION:**  
PART #: 2N2907A\_ \_ - \_  
First Suffix Letter: Packaging Option  
Second Suffix Letter: Processing Option  
Dash #: Metallization Option

Serotech reserves the right to make changes to any product design, specification, or other information at any time without prior notice.

## Electrical Characteristics @ T<sub>j</sub> = 25 °C

| Symbol                              | Parameter   | Conditions   | Min | Max | Unit |
|-------------------------------------|---|--|-----|-----|------|
| <b>OFF CHARACTERISTICS</b>          |   |  |     |     |      |
| V(BR)CBO                            | Breakdown Voltage, Collector to Base                      | Bias Cond. D, I <sub>C</sub> =10uAdc                         | 60  |     | Vdc  |
| V(BR)EBO                            | Breakdown Voltage, Emitter to Base                        | Bias Cond. D, I <sub>E</sub> =10uAdc                         | 5   |     | Vdc  |
| V(BR)CEO                            | Breakdown Voltage, Collector to Emitter                   | Bias Cond. D, I <sub>C</sub> = 10mAdc, pulsed                | 60  |     | Vdc  |
| ICES                                | Collector to Emitter Cutoff Current                       | Bias Cond. D, V <sub>CE</sub> =50Vdc                         |     | 50  | nAdc |
| ICBO1                               | Collector to Base Cutoff Current                          | Bias Cond. D, V <sub>CB</sub> =50Vdc                         |     | 10  | nAdc |
| IEBO                                | Emitter to Base Cutoff Current                            | Bias Cond. D, V <sub>EB</sub> = 4Vdc                         |     | 50  | nAdc |
| <b>ON CHARACTERISTICS</b>           |   |  |     |     |      |
| hFE1                                | Forward-Current Transfer Ratio                            | V <sub>CE</sub> =10Vdc, I <sub>C</sub> =0.1mAdc              | 75  |     |      |
| hFE2                                | Forward-Current Transfer Ratio                            | V <sub>CE</sub> =10Vdc, I <sub>C</sub> =1.0mAdc              | 100 | 450 |      |
| hFE3                                | Forward-Current Transfer Ratio                            | V <sub>CE</sub> =10Vdc, I <sub>C</sub> =10mAdc               | 100 |     |      |
| hFE4                                | Forward-Current Transfer Ratio                            | V <sub>CE</sub> =10Vdc, I <sub>C</sub> =150mAdc, pulsed      | 100 | 300 |      |
| hFE5                                | Forward-Current Transfer Ratio                            | V <sub>CE</sub> =10Vdc, I <sub>C</sub> =500mAdc, pulsed      | 50  |     |      |
| V <sub>CE(sat)1</sub>               | Collector to Emitter Saturation Voltage                   | I <sub>C</sub> =150mAdc, I <sub>B</sub> =15mAdc, pulsed      |     | 0.4 | Vdc  |
| V <sub>CE(sat)2</sub>               | Collector to Emitter Saturation Voltage                   | I <sub>C</sub> =500mAdc, I <sub>B</sub> =50mAdc, pulsed      |     | 1.6 | Vdc  |
| V <sub>BE(sat)1</sub>               | Base to Emitter Saturation Voltage                        | I <sub>C</sub> =150mAdc, I <sub>B</sub> =15mAdc, pulsed      | 0.6 | 1.3 | Vdc  |
| V <sub>BE(sat)2</sub>               | Base to Emitter Saturation Voltage                        | I <sub>C</sub> =500mAdc, I <sub>B</sub> =50mAdc, pulsed      |     | 2.6 | Vdc  |
| <b>SMALL SIGNAL CHARACTERISTICS</b> |   |  |     |     |      |
| h <sub>fe</sub>                     | Short Circuit Forward Current Xfer Ratio                  | V <sub>CE</sub> = 10Vdc, I <sub>C</sub> =1mAdc, f= 1kHz      | 100 |     |      |
| /h <sub>fe</sub> /                  | Magnitude of Short Circuit Forward Current Transfer Ratio | V <sub>CE</sub> = 20Vdc, I <sub>C</sub> =50mAdc, f=100MHz    | 2   |     |      |
| C <sub>obo</sub>                    | Output Capacitance  | V <sub>CB</sub> = 10Vdc, I <sub>E</sub> =0, 100kHz< f <1MHz  |     | 8   | pF   |
| C <sub>ibo</sub>                    | Input Capacitance   | V <sub>EB</sub> = 2.0Vdc, I <sub>C</sub> =0, 100kHz< f <1MHz |     | 30  | pF   |
| <b>SWITCHING CHARACTERISTICS</b>    |   |  |     |     |      |
| t <sub>on</sub>                     | Saturated Turn-on Time                                    | As defined in 19500/291 Figure 7                             |     | 45  | nS   |
| t <sub>off</sub>                    | Saturated Turn-off Time                                   | As defined in 19500/291 Figure 8                             |     | 300 | nS   |