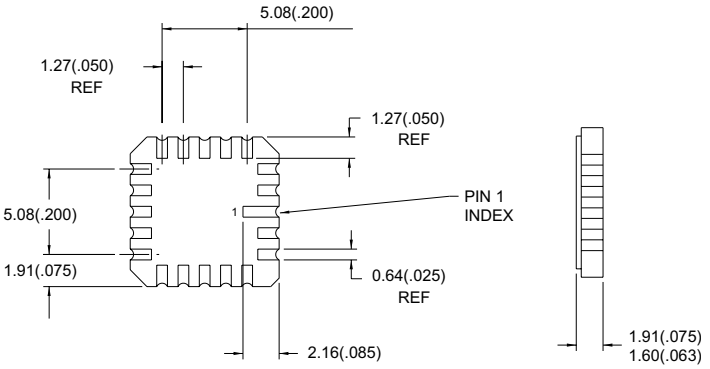
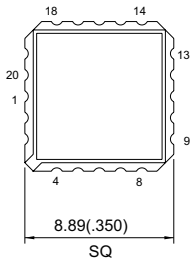
# 2N2907AQ–LCC20

## MECHANICAL DATA
Dimensions in mm (inches)




## SURFACE MOUNT
## QUAD PNP TRANSISTOR

## FEATURES

- **FOUR INDEPENDENT TRANSISTORS IN A 0.35 INCH SQUARE CERAMIC PACKAGE**
- **SURFACE MOUNTABLE**
- **HERMETICALLY SEALED PACKAGE**
- **SCREENING OPTIONS AVAILABLE**

## DESCRIPTION

**The 2N2907AQ–LCC20 is a 20 pad, hermetically sealed, Ceramic Surface Mount Transistor array, consisting of four 2N2907A silicon PNP transistor die.**

### PACKAGE LCC20

| | | | |
|---|---|---|---|
| Pin 1 = n/c | Pin 6 = n/c | Pin 11 = n/c | Pin 16 = n/c |
| Pin 2 = Collector1 | Pin 7 = Emitter 2 | Pin12 =Collector 3 | Pin 17 = Emitter 4 |
| Pin 3 = n/c | Pin 8 = Base 2 | Pin13 = n/c | Pin 18 = Base 4 |
| Pin 4 = Base 1 | Pin 9 = n/c | Pin 14 = Base 3 | Pin 19 = n/c |
| Pin 5 = Emitter 1 | Pin10 =Collector 2 | Pin 15 = Emitter 3 | Pin 20 =Collector 4 |

## ABSOLUTE MAXIMUM RATINGS ($T_A$ = 25°C unless otherwise stated)

| | | |
|---|---|---|
| $V_{CBO}$ | Collector – Base Voltage | 60V |
| $V_{CEO}$ | Collector – Emitter Voltage | 60V |
| $V_{EBO}$ | Emitter – Base Voltage | 5V |
| $I_C$ | Collector Current | 600mA |
| $I_V$ | Isolation Voltage | $500V_{DC}$ |
| $P_D$ | Total Device Dissipation @ $T_A$ = 25°C (four devices driven equally) | 1W |
| $P_D$ | Total Device Dissipation@ $T_S$[(1)] = 25°C (four devices driven equally) | 2W[(2)] |
| $T_J$ , $T_{STG}$ | Operating and Storage Junction Temperature Range | –65 to +200°C |
| | Soldering Temperature (vapor phase reflow for 30 sec) | 215°C |
| | Soldering Temperaure (heated collect for 5 sec) | 260°C |

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# 2N2907AQ–LCC20

## ELECTRICAL CHARACTERISTICS ($T_A$ = 25°C unless otherwise stated)

| | Parameter | Test Conditions | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| | **OFF CHARACTERISTICS** | | | | | | |
| $V_{(BR)CEO}$ | Collector – Emitter Sustaining Voltage | $I_C$ = 10mA | $I_B$ = 0 | 60 | | | V |
| $V_{(BR)CBO}$ | Collector – Base Breakdown Voltage | $I_C$ = 10µA | $I_E$ = 0 | 60 | | | V |
| $V_{(BR)EBO}$ | Emitter – Base Breakdown Voltage | $I_E$ = 10µA | $I_C$ = 0 | 5 | | | V |
| $I_{CBO}$ | Collector – Base Cut-off Current | $I_E$ = 0 | $V_{CB}$ = 50V | | | 10 | nA |
| | | | $T_A$ = 150°C | | | 10 | µA |
| $I_{EBO}$ | Emitter Base Cut-off Current | $I_C$ = 0 | $V_{EB}$ = 3.5V | | | 50 | nA |
| | **ON CHARACTERISTICS** | | | | | | |
| $V_{CE(sat)}$ | Collector – Emitter Saturation Voltage | $I_C$ = 150mA | $I_B$ = 15mA[3] | | | 0.4 | V |
| | | $I_C$ = 500mA | $I_B$ = 50mA[3] | | | 1.60 | |
| $V_{BE(sat)}$ | Base – Emitter Saturation Voltage | $I_C$ = 150mA | $I_B$ = 15mA[3] | | | 1.3 | V |
| | | $I_C$ = 500mA | $I_B$ = 50mA[3] | | | 2.6 | |
| $h_{FE}$ | Forwared Current Transfer Ratio | $I_C$ = 0.1mA | $V_{CE}$ = 10V | 75 | | | — |
| | | $I_C$ = 1mA | $V_{CE}$ = 10V | 100 | 450 | | |
| | | $I_C$ = 10mA | $V_{CE}$ = 10V | 100 | | | |
| | | $I_C$ = 150mA[3] | $V_{CE}$ = 10V | 100 | 300 | | |
| | | $I_C$ = 500mA[3] | $V_{CE}$ = 10V | 50 | | | |
| | | $I_C$ = 10mA | $V_{CE}$ = 10V | 50 | | | |
| | | | $T_A$ = –55°C | | | | |
| | **SMALL SIGNAL CHARACTERISTICS** | | | | | | |
| hfe | Forward Current Transfer Ratio | $I_C$ = 1mA | $V_{CE}$ = 10V f = 1kHz | 100 | | | — |
| lhfel | Forward Curent Transfer Ratio | $I_C$ = 50mA | $V_{CE}$ = 20V f = 100MHz | 2 | | | |
| $C_{obo}$ | Open Circuit Output Capacitance | $V_{CB}$ = 10V | 100kHz ≤ f ≤ 1MHz | | 8 | | pF |
| $C_{ibo}$ | Input Capacitance(output open) | $V_{EB}$ = 2V | 100kHz ≤ f ≤ 1MHz | | 30 | | |
| | **SWITCHING CHARACTERISTICS** | | | | | | |
| $t_{on}$ | Turn-On Time | $V_{CC}$ = 30V | $I_C$ 150mA $I_{B1}$ = 15mA | | 45 | | ns |
| $t_{off}$ | Turn-Off Time | $V_{CC}$ = 30V | $I_C$ 150mA $I_{B1}$ = $I_{B1=}$15mA | | 300 | | |

### NOTES:

1) Ts = Substrate Temperatue that the chip carrier is mounted on.
2) Derate Linearly 11.4mW/°C above 25°C. This rating is proveded as an aid to designers. It is dependent upon mounting material and methods and is not measureable as an outgoing test.

3) Pulse Test Pulse Wide ≤ 300µs , Duty Cycle ≤ 2%

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