

# TO-92 Plastic Package Transistors (NPN)

| Maximum Ratings |                             |                             |                             |                                |                    | Electrical Characteristics (Ta=25°C, Unless Otherwise Specified) |                                         |                              |                                         |                                                                        |                                 |                                 |                                          |                             |                             |                         |                            |                              |                            |                 |                             |                 |  |
|-----------------|-----------------------------|-----------------------------|-----------------------------|--------------------------------|--------------------|------------------------------------------------------------------|-----------------------------------------|------------------------------|-----------------------------------------|------------------------------------------------------------------------|---------------------------------|---------------------------------|------------------------------------------|-----------------------------|-----------------------------|-------------------------|----------------------------|------------------------------|----------------------------|-----------------|-----------------------------|-----------------|--|
| Type No.        | V <sub>CEO</sub> (V)<br>Min | V <sub>CEQ</sub> (V)<br>Min | V <sub>EBQ</sub> (V)<br>Min | P <sub>D</sub> (W)<br>@Tc=25°C | I <sub>C</sub> (A) | I <sub>CBO</sub> (μA)<br>Max                                     | V <sub>CB</sub> (V)<br>@ I <sub>C</sub> | I <sub>CES</sub> (μA)<br>Max | V <sub>CE</sub> (V)<br>@ I <sub>C</sub> | h <sub>FE</sub> @ I <sub>C</sub> & V <sub>CE</sub><br>Min Max (mA) (V) | V <sub>CE(SAT)</sub> (V)<br>Max | V <sub>BE(SAT)</sub> (V)<br>Max | I <sub>C</sub> (mA)<br>@ V <sub>CE</sub> | C <sub>ob</sub> (pF)<br>Typ | f <sub>t</sub> (MHz)<br>Min | @ f <sub>t</sub><br>Typ | I <sub>C</sub> (mA)<br>Max | t <sub>off</sub> (ns)<br>Max | N <sub>F</sub> (dB)<br>Max | @ Freq<br>(MHz) | C <sub>re</sub> (pF)<br>Max | CDIL Case Style |  |
| 2SC3199Y        | 50                          | 50                          | 5                           | 0.4                            | 0.15               | 0.1                                                              | 50                                      |                              |                                         | 120 240 2 6                                                            | 0.25                            |                                 | 100                                      | 2 3.5                       | 80                          |                         | 1                          |                              | 10                         |                 |                             | TO-92-1         |  |
| 2SC3355         | 20                          | 12                          | 3                           | 0.6                            |                    | 0.1                                                              | 15                                      |                              |                                         | 50 300 20 10                                                           |                                 |                                 |                                          | 1                           |                             | 6500                    | 20                         |                              | 3                          | 1000            |                             | TO-92           |  |
| 2SC383TM        | 50                          | 45                          | 4                           | 0.3                            | 0.05               | 0.1                                                              | 50                                      |                              |                                         | 20 100 12.5 12.5                                                       | 0.2                             | 1.5                             | 15                                       | 2                           | 300                         |                         | 13                         |                              |                            |                 |                             | TO-92-1         |  |
| 2SC388ATM       | 30                          | 25                          | 4                           | 0.3                            | 0.05               | 0.1                                                              | 30                                      |                              |                                         | 20 200 12.5 12.5                                                       | 0.2                             | 1.5                             | 15                                       | 2                           | 300                         |                         | 13                         |                              |                            |                 |                             | TO-92-1         |  |
| 2SC458          | 30                          | 30                          | 5                           | 0.2                            | 0.1                | 0.5                                                              | 18                                      |                              |                                         | 100 500 2 12                                                           | 0.2                             |                                 | 10                                       | 3.5                         |                             |                         |                            | 10                           | 0.001                      |                 |                             | TO-92-1         |  |
| 2SC458B         | 30                          | 30                          | 5                           | 0.2                            | 0.1                | 0.5                                                              | 18                                      |                              |                                         | 100 200 2 12                                                           | 0.2                             |                                 | 10                                       | 3.5                         | 230                         |                         | 2                          | 10                           |                            |                 |                             | TO-92-1         |  |
| 2SC458C         | 30                          | 30                          | 5                           | 0.2                            | 0.1                | 0.5                                                              | 18                                      |                              |                                         | 160 320 2 12                                                           | 0.2                             |                                 | 10                                       | 3.5                         | 230                         |                         | 2                          | 10                           |                            |                 |                             | TO-92-1         |  |
| 2SC458D         | 30                          | 30                          | 5                           | 0.2                            | 0.1                | 0.5                                                              | 18                                      |                              |                                         | 250 500 2 12                                                           | 0.2                             |                                 | 10                                       | 3.5                         | 230                         |                         | 2                          | 10                           |                            |                 |                             | TO-92-1         |  |
| 2SC460          | 30                          | 30                          | 5                           | 0.2                            | 0.1                | 0.5                                                              | 18                                      |                              |                                         | 35 200 2 12                                                            | 1.1                             |                                 | 10                                       | 3.5                         | 230                         |                         | 2                          | 5                            | 1                          |                 |                             | TO-92-1         |  |
| 2SC460A         | 30                          | 30                          | 5                           | 0.2                            | 0.1                | 0.5                                                              | 18                                      |                              |                                         | 35 70 2 12                                                             | 1.1                             |                                 | 10                                       | 3.5                         | 230                         |                         | 2                          | 5                            | 1                          |                 |                             | TO-92-1         |  |
| 2SC460B         | 30                          | 30                          | 5                           | 0.2                            | 0.1                | 0.5                                                              | 18                                      |                              |                                         | 60 120 2 12                                                            | 1.1                             |                                 | 10                                       | 3.5                         | 230                         |                         | 2                          | 5                            | 1                          |                 |                             | TO-92-1         |  |
| 2SC460C         | 30                          | 30                          | 5                           | 0.2                            | 0.1                | 0.5                                                              | 18                                      |                              |                                         | 100 200 2 12                                                           | 1.1                             |                                 | 10                                       | 3.5                         | 230                         |                         | 2                          | 5                            | 1                          |                 |                             | TO-92-1         |  |
| 2SC535          | 30                          | 20                          | 4                           | 0.1                            | 0.02               |                                                                  |                                         |                              |                                         | 35 200 1 6                                                             | 0.25                            |                                 | 20                                       | 1.2                         | 450 940                     |                         | 5                          | 5.5                          | 100                        |                 |                             | TO-92-1         |  |
| 2SC536          | 40                          | 30                          | 5                           | 0.4                            | 0.1                | 0.1                                                              | 35                                      |                              |                                         | 60 960 1 6                                                             | 0.5                             |                                 | 50                                       | 3.5                         | 100 100                     |                         | 1                          |                              |                            |                 |                             | TO-92-1         |  |
| 2SC536D         | 40                          | 30                          | 5                           | 0.4                            | 0.1                | 0.1                                                              | 35                                      |                              |                                         | 60 120 1 6                                                             | 0.5                             |                                 | 50                                       | 3.5                         | 100 100                     |                         | 1                          |                              |                            |                 |                             | TO-92-1         |  |
| 2SC536E         | 40                          | 30                          | 5                           | 0.4                            | 0.1                | 0.1                                                              | 35                                      |                              |                                         | 100 200 1 6                                                            | 0.5                             |                                 | 50                                       | 3.5                         | 100 100                     |                         | 1                          |                              |                            |                 |                             | TO-92-1         |  |
| 2SC536F         | 40                          | 30                          | 5                           | 0.4                            | 0.1                | 0.1                                                              | 35                                      |                              |                                         | 160 320 1 6                                                            | 0.5                             |                                 | 50                                       | 3.5                         | 100 100                     |                         | 1                          |                              |                            |                 |                             | TO-92-1         |  |
| 2SC536G         | 40                          | 30                          | 5                           | 0.4                            | 0.1                | 0.1                                                              | 35                                      |                              |                                         | 280 560 1 6                                                            | 0.5                             |                                 | 50                                       | 3.5                         | 100 100                     |                         | 1                          |                              |                            |                 |                             | TO-92-1         |  |
| 2SC536H         | 40                          | 30                          | 5                           | 0.4                            | 0.1                | 0.1                                                              | 35                                      |                              |                                         | 480 960 1 6                                                            | 0.5                             |                                 | 50                                       | 3.5                         | 100 100                     |                         | 1                          |                              |                            |                 |                             | TO-92-1         |  |
| 2SC536K         | 55                          | 50                          | 5                           | 0.4                            | 0.1                | 0.1                                                              | 35                                      |                              |                                         | 60 960 1 6                                                             | 0.5                             |                                 | 50                                       | 3.5                         | 100 100                     |                         | 1                          |                              |                            |                 |                             | TO-92-1         |  |
| 2SC752GTM       | 40                          | 15                          | 5                           | 0.4                            | 0.2                | 0.1                                                              | 40                                      |                              |                                         | 70 240 10 1<br>20 100 1                                                | 0.3                             | 1.3                             | 20                                       | 6                           | 200 400                     |                         | 10                         |                              |                            |                 |                             | TO-92-1         |  |
| 2SC752GTMQ      | 40                          | 15                          | 5                           | 0.4                            | 0.2                | 0.1                                                              | 40                                      |                              |                                         | 70 140 10 1<br>20 100 1                                                | 0.3                             | 1                               | 20                                       | 4                           | 6 200 400                   |                         | 10                         |                              |                            |                 |                             | TO-92-1         |  |
| 2SC752GTMY      | 40                          | 15                          | 5                           | 0.4                            | 0.2                | 0.1                                                              | 40                                      |                              |                                         | 120 240 10 1<br>20 100 1                                               | 0.3                             | 1                               | 20                                       | 6                           | 4 200 400                   |                         | 10                         |                              |                            |                 |                             | TO-92-1         |  |
| 2SC763          | 25                          | 12                          | 3                           |                                | 0.02               | 0.5                                                              | 12                                      |                              |                                         | 20 300 1 6                                                             |                                 |                                 |                                          | 1.5                         | 400                         |                         | 1                          |                              |                            |                 |                             | TO-92           |  |
| 2SC9022         | 50                          | 40                          | 5                           | 0.3                            | 0.1                | 0.5                                                              | 30                                      |                              |                                         | 82 820 1 6                                                             | 0.4                             |                                 | 50                                       | 2 3.5                       | 180                         |                         | 2                          |                              |                            |                 |                             | TO-92-1         |  |
| 2SC945          | 60                          | 50                          | 5                           | 0.25                           | 0.1                | 0.1                                                              | 60                                      |                              |                                         | 50 90 0.1 6<br>600 1 6                                                 | 0.3                             | 1                               | 100                                      | 3 4                         | 150 250 450                 |                         | 10                         | 15                           |                            |                 |                             | TO-92-1         |  |
| 2SC945K         | 60                          | 50                          | 5                           | 0.25                           | 0.1                | 0.1                                                              | 60                                      |                              |                                         | 50 300 0.1 6<br>600 1 6                                                | 0.3                             | 1                               | 100                                      | 3 4                         | 150 250 450                 |                         | 10                         | 15                           |                            |                 |                             | TO-92-1         |  |
| 2SC945P         | 60                          | 50                          | 5                           | 0.25                           | 0.1                | 0.1                                                              | 60                                      |                              |                                         | 50 200 0.1 6<br>400 1 6                                                | 0.3                             | 1                               | 100                                      | 3 4                         | 250 150 450                 |                         | 10                         | 15                           |                            |                 |                             | TO-92-1         |  |
| 2SC945Q         | 60                          | 50                          | 5                           | 0.25                           | 0.1                | 0.1                                                              | 60                                      |                              |                                         | 50 135 0.1 6<br>270 1 6                                                | 0.3                             | 1                               | 100                                      | 3 4                         | 150 250 450                 |                         | 10                         | 15                           |                            |                 |                             | TO-92-1         |  |
| 2SC945R         | 60                          | 50                          | 5                           | 0.25                           | 0.1                | 0.1                                                              | 60                                      |                              |                                         | 50 90 0.1 6<br>180 1 6                                                 | 0.3                             | 1                               | 100                                      | 3 4                         | 150 250 450                 |                         | 10                         | 15                           |                            |                 |                             | TO-92-1         |  |

2383394 0000960 860