

**Features**

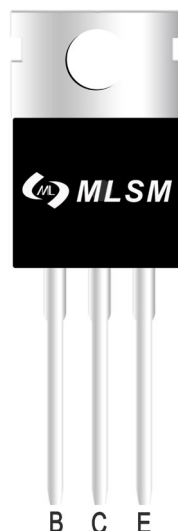
- Medium Power Linear Switching

**Applications**

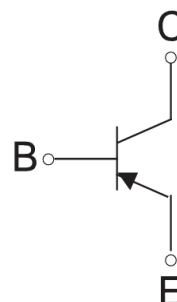
- Complement to TIP41/41A/41B/41C

**Marking**

- TIP42C



TO-220-3L top view



Schematic diagram



Halogen-Free

**MAXIMUM RATINGS (Ta=25°C unless otherwise noted)**

| Symbol         | Parameter                                        | Value      | Unit |
|----------------|--------------------------------------------------|------------|------|
| $V_{CBO}$      | Collector-Base Voltage                           | -100       | V    |
| $V_{CEO}$      | Collector-Emitter Voltage                        | -100       | V    |
| $V_{EBO}$      | Emitter-Base Voltage                             | -5         | V    |
| $I_C$          | Collector Current -Continuous                    | -6         | A    |
| $P_C$          | Collector Power Dissipation                      | 2          | W    |
| $T_J, T_{stg}$ | Operation Junction and Storage Temperature Range | -55~ + 150 | °C   |

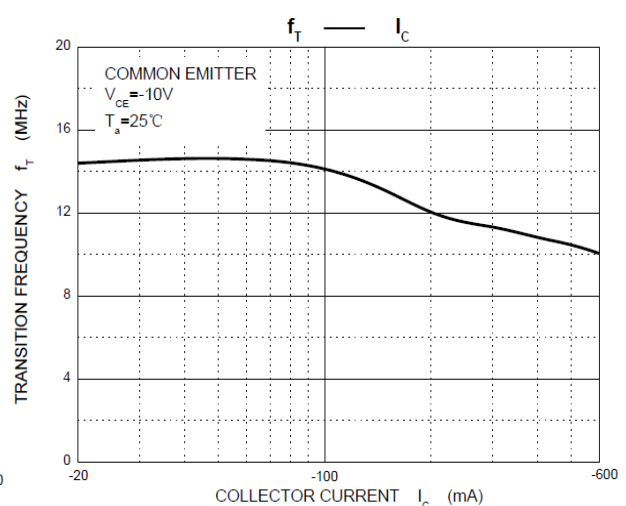
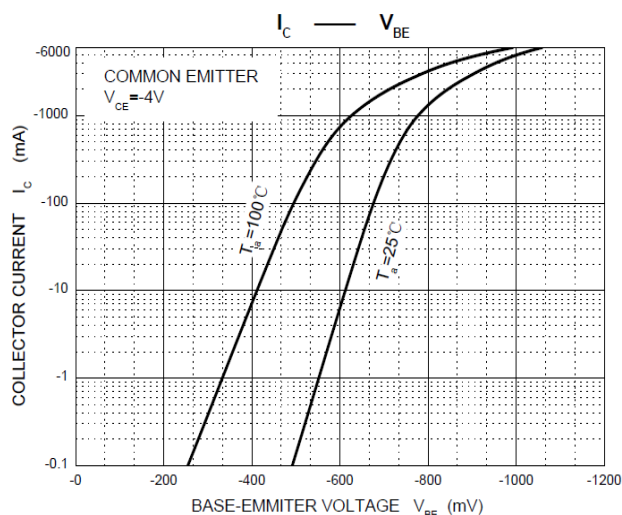
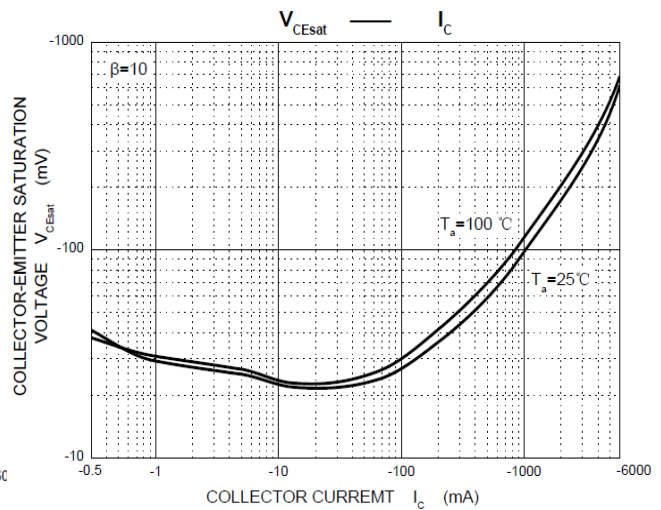
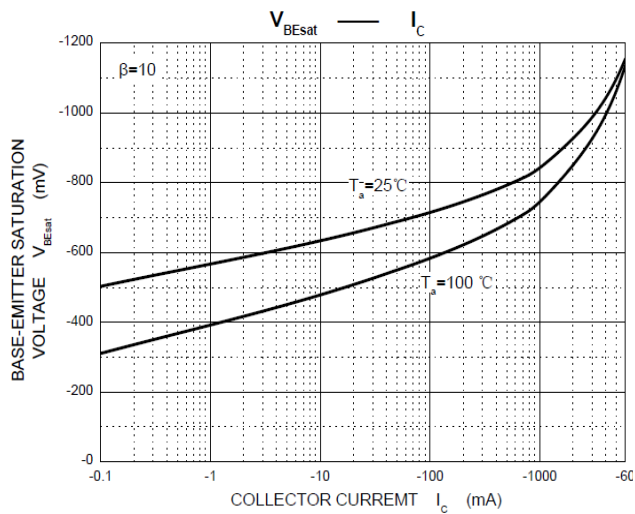
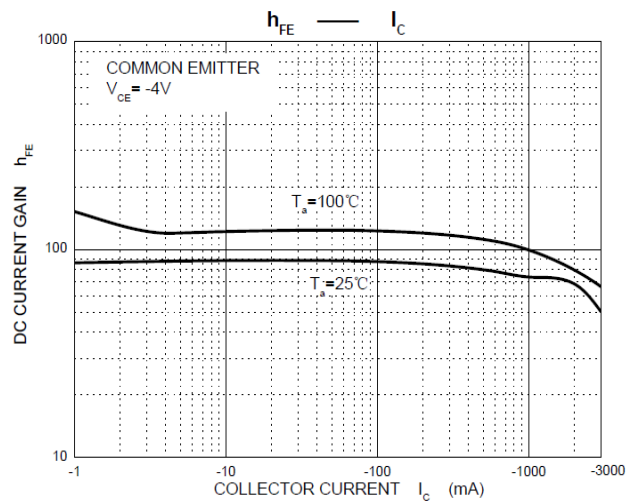
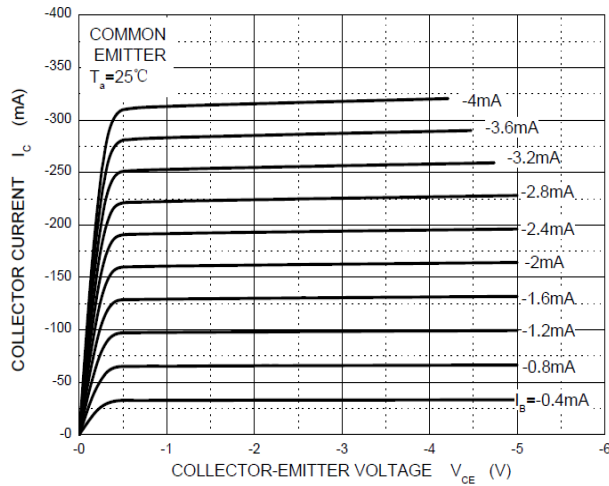
**ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)**

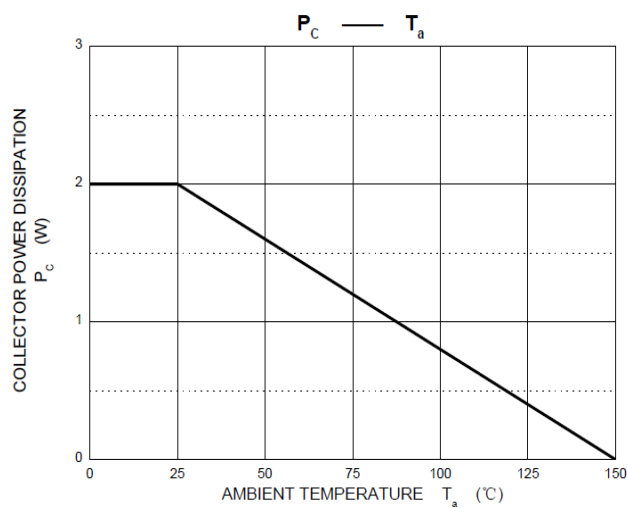
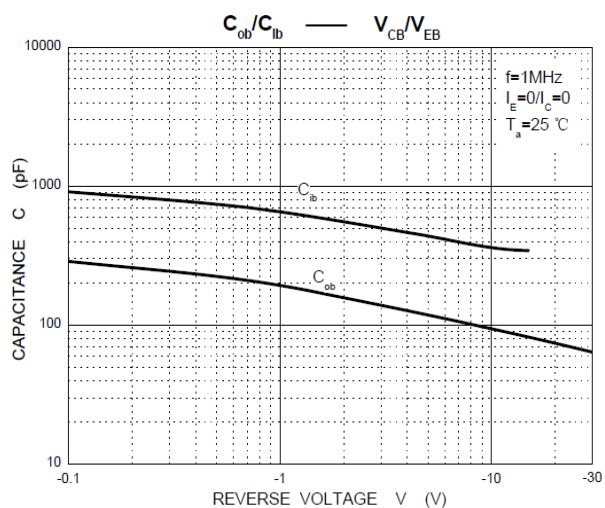
| Symbol          | Parameter                            | Condition                   | Min  | Max  | Unit |
|-----------------|--------------------------------------|-----------------------------|------|------|------|
| $V_{(BR)CBO}$   | Collector-base breakdown voltage     | $I_C = -1mA, I_E = 0$       | -100 | --   | V    |
| $V_{(BR)CEO}^*$ | Collector-emitter breakdown voltage  | $I_C = -30mA, I_B = 0$      | -100 | --   | V    |
| $V_{(BR)EBO}$   | Emitter-base breakdown voltage       | $I_C = -1mA, I_C = 0$       | -5   | --   | V    |
| $I_{CBO}$       | Collector cut-off current            | $V_{CB} = -100V, I_E = 0$   | --   | -0.4 | mA   |
| $I_{CEO}$       | Collector cut-off current            | $V_{CE} = -60V, I_B = 0$    | --   | -0.7 | mA   |
| $I_{EBO}$       | Emitter cut-off current              | $V_{EB} = -5V, I_C = 0$     | --   | -1   | mA   |
| $h_{FE(1)}$     | DC current gain                      | $V_{CE} = -4V, I_C = -0.3A$ | 30   | --   |      |
| $h_{FE(2)}$     |                                      | $V_{CE} = -4V, I_C = -3A$   | 15   | 75   |      |
| $V_{CE(sat)}$   | Collector-emitter saturation voltage | $I_C = -6A, I_B = -0.6A$    | --   | -1.5 | V    |
| $V_{BE}$        | Base-emitter voltage                 | $V_{CE} = -4V, I_C = -6A$   | --   | -2   | V    |
| $f_T$           | Transition frequency                 | $V_{CE} = -10V, I_C = -0.5$ | 3    | --   | MHZ  |

\*Pulse test

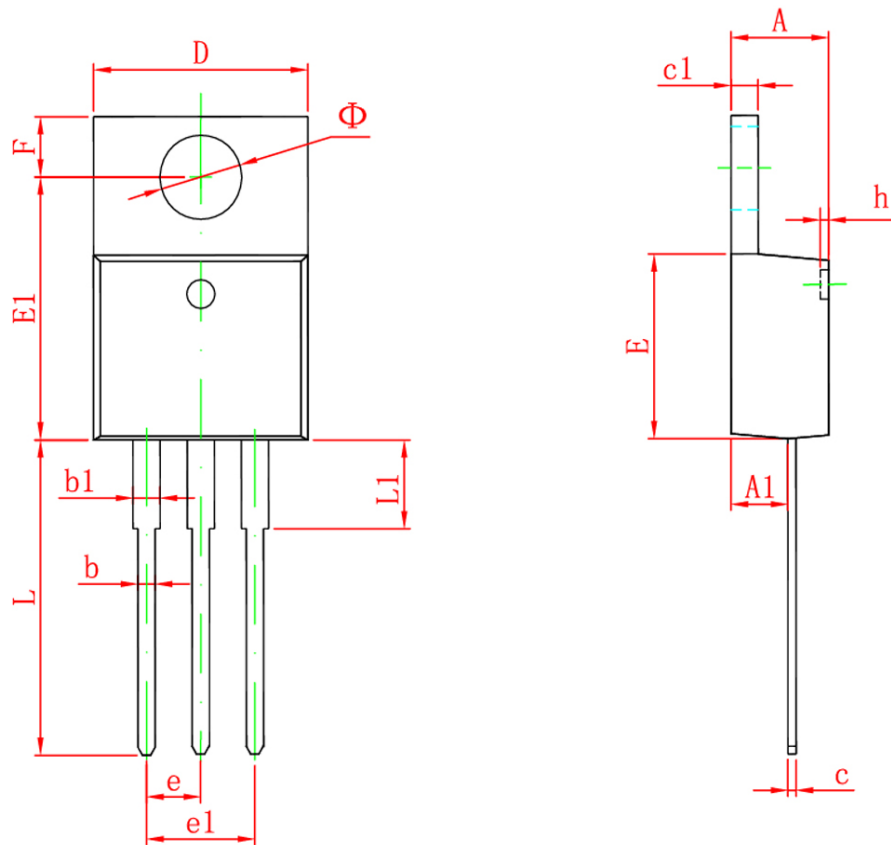
## Typical Operating Characteristics

Static Characteristic





TO-220-3L Package information



| Symbol | Dimensions in Millimeters(mm) |        | Dimensions In Inches |       |
|--------|-------------------------------|--------|----------------------|-------|
|        | Min                           | Max    | Min                  | Max   |
| A      | 4.470                         | 4.670  | 0.176                | 0.184 |
| A1     | 2.520                         | 2.820  | 0.099                | 0.111 |
| b      | 0.710                         | 0.910  | 0.028                | 0.036 |
| b1     | 1.170                         | 1.370  | 0.046                | 0.054 |
| c      | 0.310                         | 0.530  | 0.012                | 0.021 |
| c1     | 1.170                         | 1.370  | 0.046                | 0.054 |
| D      | 10.010                        | 10.310 | 0.394                | 0.406 |
| E      | 8.500                         | 8.900  | 0.335                | 0.350 |
| E1     | 12.060                        | 12.460 | 0.475                | 0.491 |
| e      | 2.540TYP                      |        | 0.100TYP             |       |
| e1     | 4.980                         | 5.180  | 0.196                | 0.204 |
| F      | 2.590                         | 2.890  | 0.102                | 0.114 |
| h      | 0.000                         | 0.300  | 0.000                | 0.012 |
| L      | 13.400                        | 13.800 | 0.528                | 0.543 |
| L1     | 3.560                         | 3.960  | 0.140                | 0.156 |
| Φ      | 3.735                         | 3.935  | 0.147                | 0.155 |