



## Features

- Collector Current:  $I_C = 0.6A$
- Power Dissipation of 625mW

## Package Marking and Ordering Information

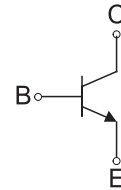
| Product ID | Pack  | Marking | Qty(PCS) |
|------------|-------|---------|----------|
| KTC3202-Y  | TO-92 | 2N2222A | 1000     |

1. EMITTER

2. BASE

3. COLLECTOR

TO-92



## Maximum Ratings ( $T_a = 25^\circ C$ unless otherwise noted)

| Symbol          | Parameter                                        | Value      | Unit           |
|-----------------|--------------------------------------------------|------------|----------------|
| $V_{CBO}$       | Collector-Base Voltage                           | 75         | V              |
| $V_{CEO}$       | Collector-Emitter Voltage                        | 40         | V              |
| $V_{EBO}$       | Emitter-Base Voltage                             | 6          | V              |
| $I_C$           | Collector Current -Continuous                    | 0.6        | A              |
| $P_D$           | Collector Power Dissipation                      | 625        | mW             |
| $R_{\theta JA}$ | Thermal Resistance from Junction to Ambient      | 200        | $^\circ C / W$ |
| $T_J, T_{stg}$  | Operation Junction and Storage Temperature Range | -55 ~ +150 | $^\circ C$     |

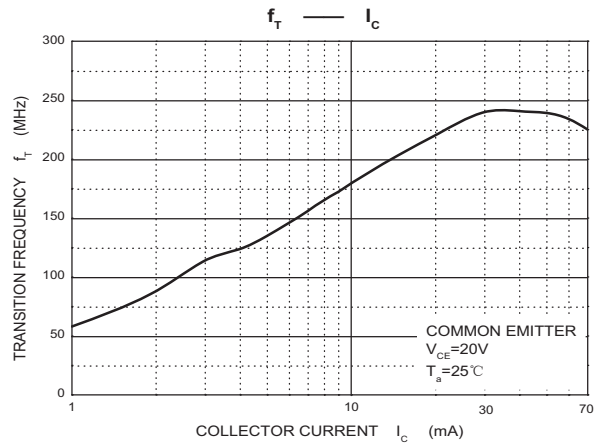
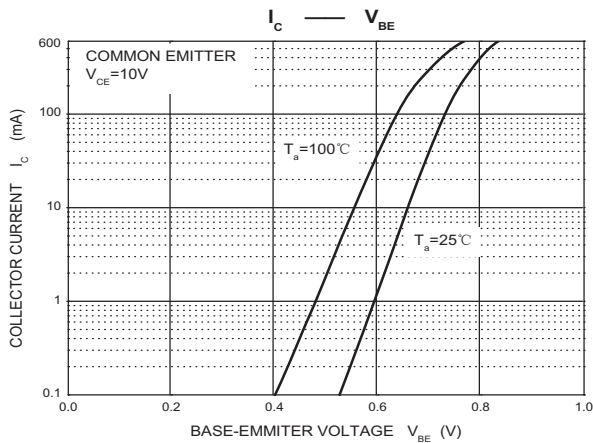
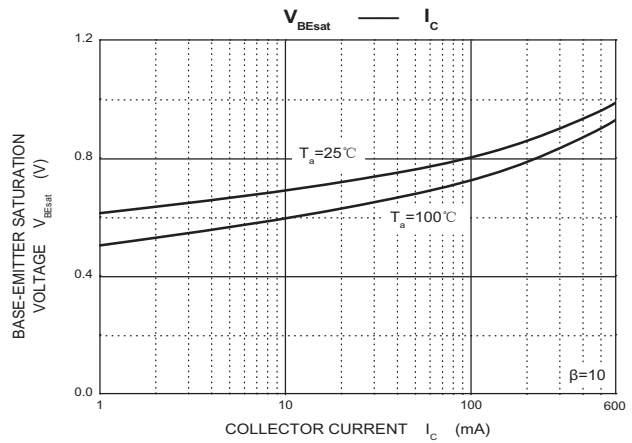
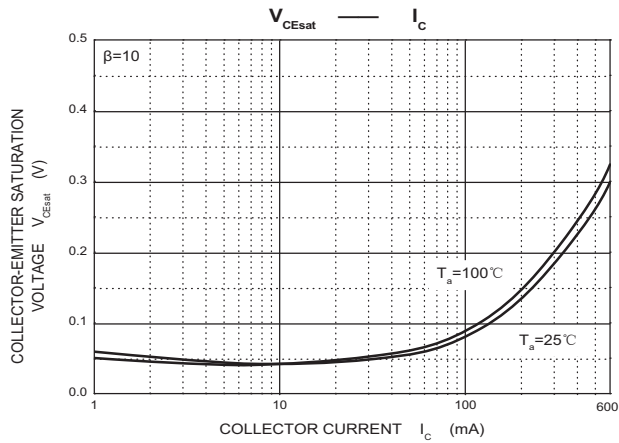
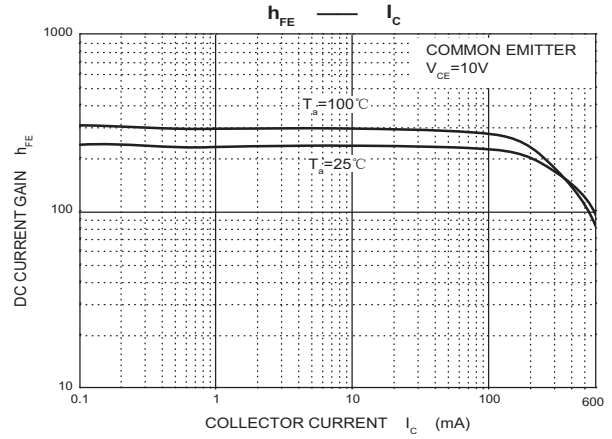
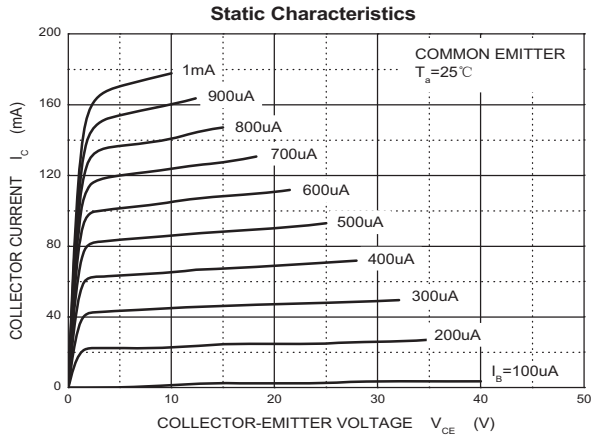
## Electrical Characteristics ( $T_a = 25^\circ C$ unless otherwise specified)

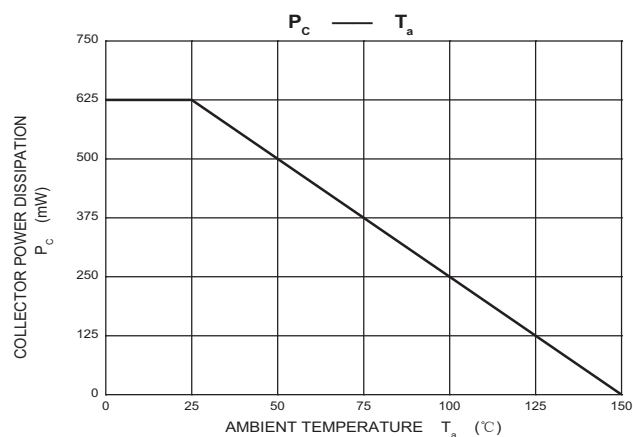
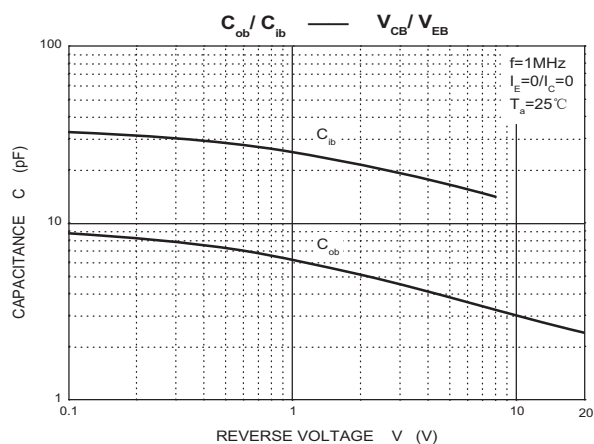
| Parameter                            | Symbol           | Test conditions                                     | Min | Max | Unit |
|--------------------------------------|------------------|-----------------------------------------------------|-----|-----|------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$    | $I_C = 10\mu A, I_E = 0$                            | 75  |     | V    |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$    | $I_C = 10mA, I_B = 0$                               | 40  |     | V    |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$    | $I_E = 10\mu A, I_C = 0$                            | 6   |     | V    |
| Collector cut-off current            | $I_{CBO}$        | $V_{CB} = 60V, I_E = 0$                             |     | 10  | nA   |
| Collector cut-off current            | $I_{CEX}$        | $V_{CE} = 60V, V_{EB(Off)} = 3V$                    |     | 10  | nA   |
| Emitter cut-off current              | $I_{EBO}$        | $V_{EB} = 3V, I_C = 0$                              |     | 100 | nA   |
| DC current gain                      | $h_{FE(1)}$      | $V_{CE} = 10V, I_C = 150mA$                         | 100 | 300 |      |
|                                      | $h_{FE(2)}$      | $V_{CE} = 10V, I_C = 0.1mA$                         | 40  |     |      |
|                                      | $h_{FE(3)}$      | $V_{CE} = 10V, I_C = 500mA$                         | 42  |     |      |
| Collector-emitter saturation voltage | $V_{CE(sat)(1)}$ | $I_C = 500mA, I_B = 50mA$                           |     | 0.6 | V    |
|                                      | $V_{CE(sat)(2)}$ | $I_C = 150mA, I_B = 15mA$                           |     | 0.3 | V    |
| Base-emitter saturation voltage      | $V_{BE(sat)}$    | $I_C = 500mA, I_B = 50mA$                           |     | 1.2 | V    |
| Delay time                           | $t_d$            | $V_{CC} = 30V, V_{EB(Off)} = -0.5V,$                |     | 10  | nS   |
| Rise time                            | $t_r$            | $I_C = 150mA, I_{B1} = 15mA$                        |     | 25  | nS   |
| Storage time                         | $t_s$            | $V_{CC} = 30V, I_C = 150mA, I_{B1} = I_{B2} = 15mA$ |     | 225 | nS   |
| Fall time                            | $t_f$            |                                                     |     | 60  | nS   |
| Transition frequency                 | $f_T$            | $V_{CE} = 20V, I_C = 20mA, f = 100MHz$              | 300 |     | MHz  |

\* pulse test

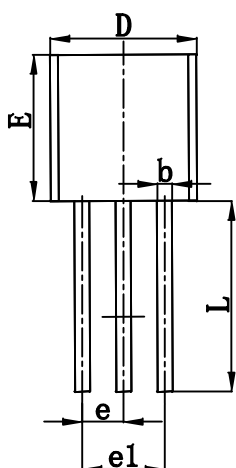
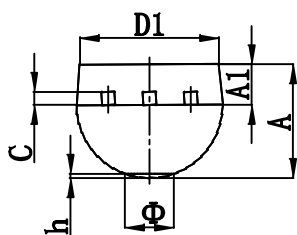


## Typical Characteristics





## TO-92(TO-92-3) Package Outline Dimensions



| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min                       | Max    | Min                  | Max   |
| A      | 3.300                     | 3.700  | 0.130                | 0.146 |
| A1     | 1.100                     | 1.400  | 0.043                | 0.055 |
| b      | 0.380                     | 0.550  | 0.015                | 0.022 |
| c      | 0.360                     | 0.510  | 0.014                | 0.020 |
| D      | 4.300                     | 4.700  | 0.169                | 0.185 |
| D1     | 3.430                     |        | 0.135                |       |
| E      | 4.300                     | 4.700  | 0.169                | 0.185 |
| e      | 1.270 TYP                 |        | 0.050 TYP            |       |
| e1     | 2.440                     | 2.640  | 0.096                | 0.104 |
| L      | 14.100                    | 14.500 | 0.555                | 0.571 |
| Φ      |                           | 1.600  |                      | 0.063 |
| h      | 0.000                     | 0.380  | 0.000                | 0.015 |



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