



# THE DATASHEET OF 2SC2655-Y



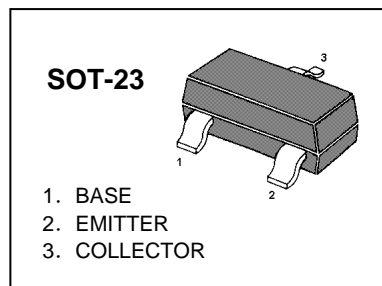
# NPN SILICON TRANSISTOR

## POWER AMPLIFIER APPLICATIONS POWER SWITCHING APPLICATIONS

### FEATURES

- \* Low saturation voltage:  $V_{CE(SAT)} = 0.5V$  (Max.)
- \* High speed switching time:  $T_{STG} = 1.0\mu s$  (Typ.)

**MARKING : 2655**



### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ C$ , unless otherwise specified )

| PARAMETER                          | SYMBOL    | RATING     | UNIT       |
|------------------------------------|-----------|------------|------------|
| Collector-Base Voltage             | $V_{CBO}$ | 50         | V          |
| Collector-Emitter Voltage          | $V_{CEO}$ | 50         | V          |
| Emitter-Base Voltage               | $V_{EBO}$ | 5          | V          |
| Collector Current                  | $I_C$     | 2          | A          |
| Collector Current (Pulse) (Note 1) | $I_{CP}$  | 3          | A          |
| Base Current                       | $I_B$     | 0.5        | A          |
| Collector Power Dissipation        | SOT-23    | 350        | mW         |
|                                    | TO-92     | 900        |            |
| Junction Temperature               | $T_J$     | 150        | $^\circ C$ |
| Storage Temperature                | $T_{STG}$ | -55 ~ +150 | $^\circ C$ |

Note: 1.  $P_W \leq 16ms$ , Duty Cycle  $\leq 50\%$ .

- 2. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

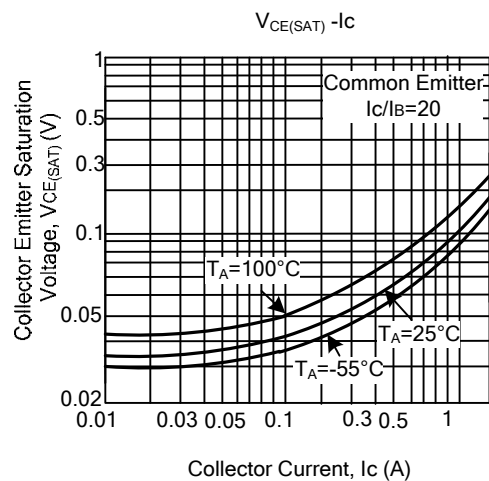
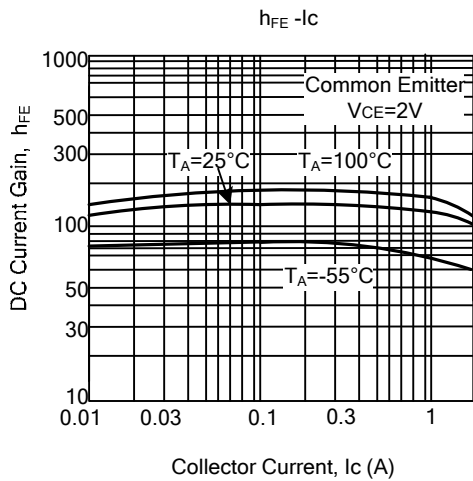
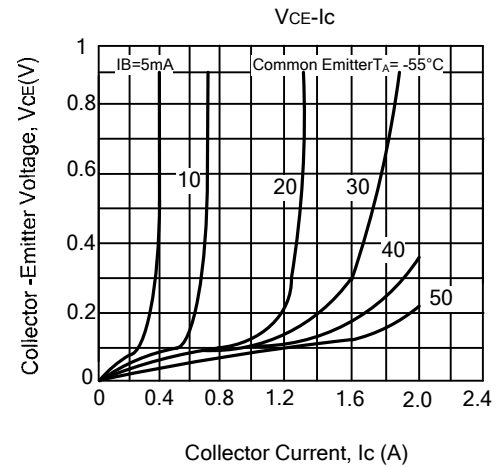
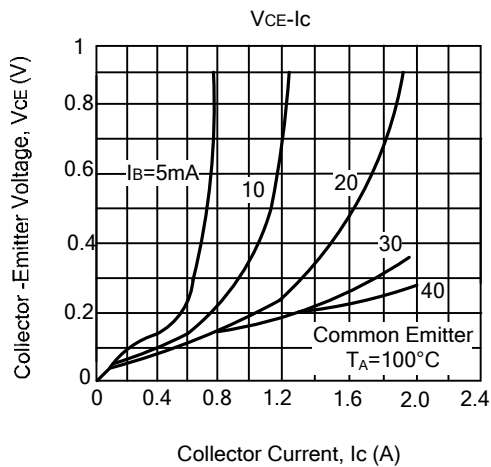
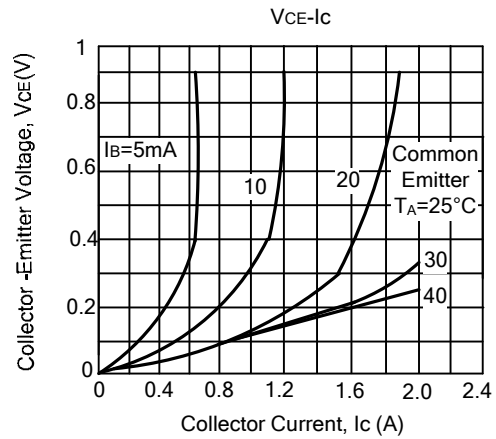
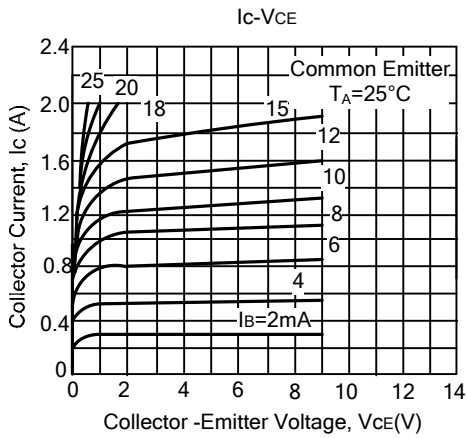
### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ C$ , unless otherwise specified)

| PARAMETER                            | SYMBOL        | TEST CONDITIONS   | MIN | TYP | MAX | UNIT    |
|--------------------------------------|---------------|---|-----|-----|-----|---------|
| Collector Emitter Breakdown Voltage  | $BV_{CEO}$    | $I_C = 10mA, I_B = 0$   | 50  |     |     | V       |
| Collector Cut-off Current            | $I_{CBO}$     | $V_{CB} = 50V, I_E = 0$   |     |     | 1.0 | $\mu A$ |
| Emitter Cut-off Current              | $I_{EBO}$     | $V_{EB} = 5V, I_C = 0$  |     |     | 1.0 | $\mu A$ |
| DC Current Gain                      | $h_{FE(1)}$   | $V_{CE} = 2V, I_C = 0.5A$   | 70  |     | 240 |         |
|                                      | $h_{FE(2)}$   | $V_{CE} = 2V, I_C = 1.5A$   | 40  |     |     |         |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C = 1A, I_B = 0.05A$   |     |     | 0.5 | V       |
| Base- Emitter Saturation Voltage     | $V_{BE(SAT)}$ | $I_C = 1A, I_B = 0.05A$   |     |     | 1.2 | V       |
| Transition Frequency                 | $f_T$         | $V_{CE} = 2V, I_C = 0.5A$   |     | 100 |     | MHz     |
| Collector Output Capacitance         | $C_{OB}$      | $V_{CB} = 10V, I_E = 0, f = 1MHz$   |     | 30  |     | pF      |
| Switching Time(Turn-on Time)         | $t_{ON}$      | <p><math>I_{B1} = -I_{B2} = 0.05A</math><br/>DUTY CYCLE <math>\leq 1\%</math></p> |     | 0.1 |     | $\mu s$ |

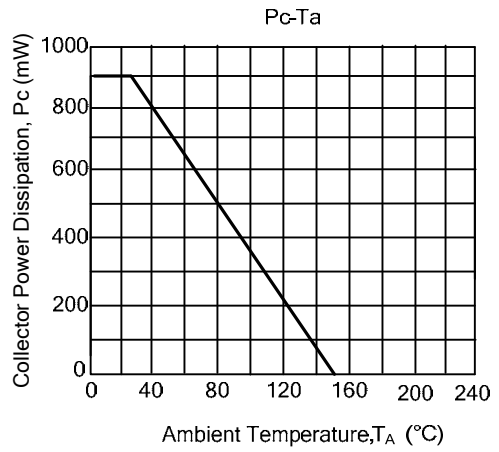
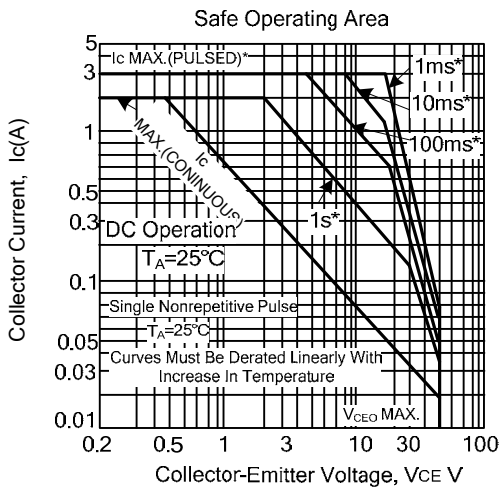
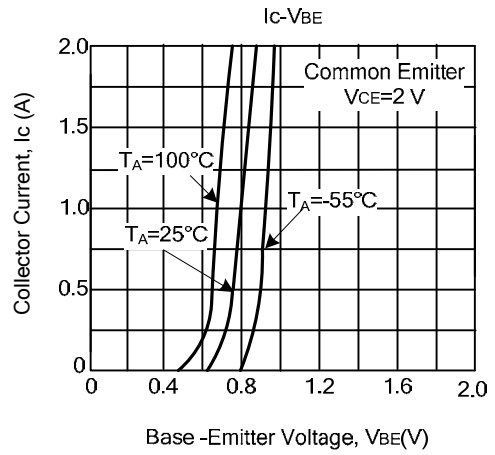
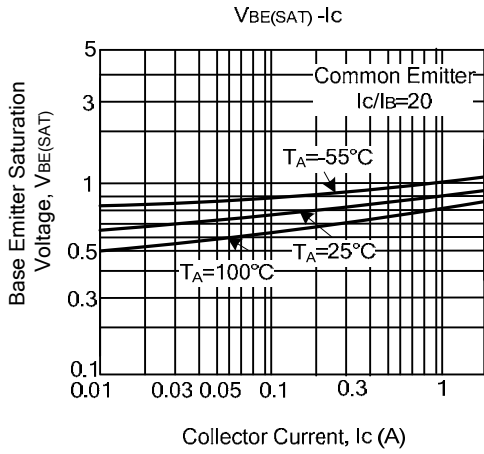
### CLASSIFICATION OF $h_{FE(1)}$

| RANK  | O      | Y       |
|-------|--------|---------|
| RANGE | 70-140 | 120-240 |

■ TYPICAL CHARACTERISTICS



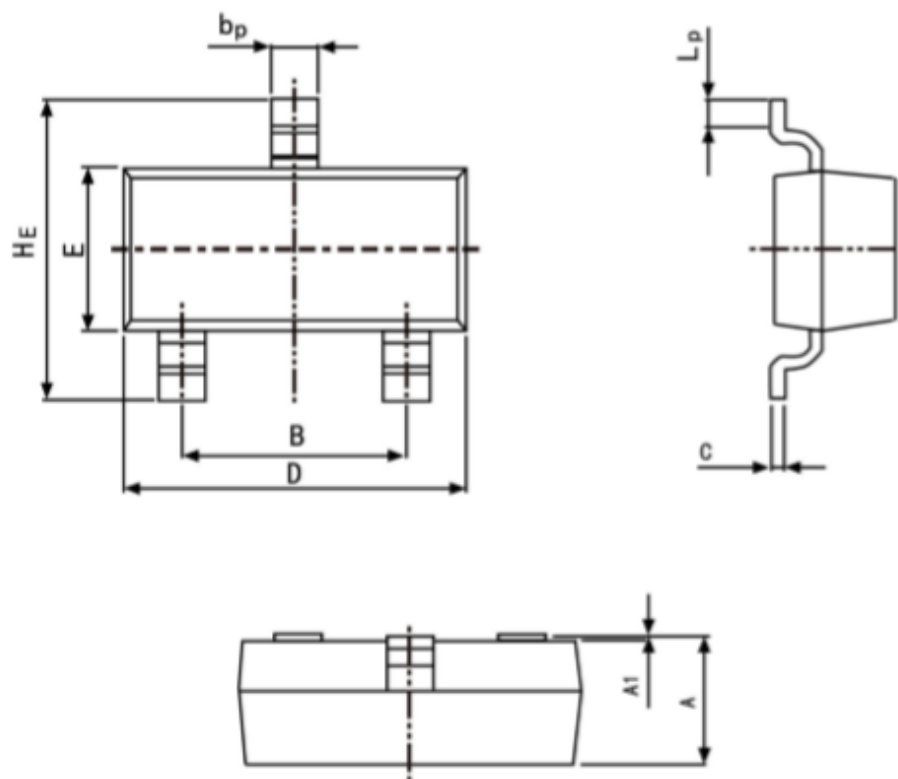
■ TYPICAL CHARACTERISTICS(Cont.)



**PACKAGE OUTLINE**

Plastic surface mounted package; 3 leads

SOT-23



| Symbol | Dimension in Millimeters |       |
|--------|--------------------------|-------|
|        | Min                      | Max   |
| A      | 0.95                     | 1.40  |
| B      | 1.78                     | 2.04  |
| bp     | 0.35                     | 0.50  |
| C      | 0.08                     | 0.19  |
| D      | 2.70                     | 3.10  |
| E      | 1.20                     | 1.65  |
| HE     | 2.20                     | 3.00  |
| A1     | 0.100                    | 0.013 |
| Lp     | 0.20                     | 0.50  |

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