


**CYStek Electronics Corp.**

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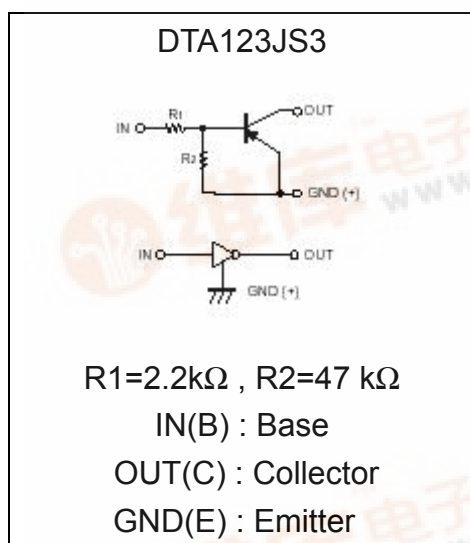
## PNP Digital Transistors (Built-in Resistors)

# DTA123JS3

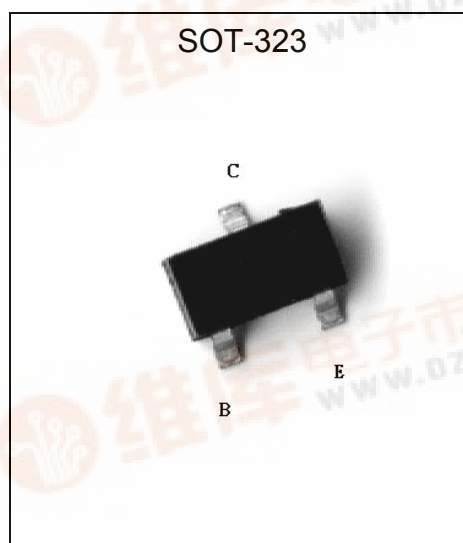
### Features

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
- The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.
- Only the on/off conditions need to be set for operation, making device design easy.
- Complements the DTC123JS3

### Equivalent Circuit



### Outline



### Absolute Maximum Ratings (Ta=25°C)

| Parameter                               | Symbol          | Limits   | Unit |
|-----------------------------------------|-----------------|----------|------|
| Supply Voltage                          | $V_{CC}$        | -50      | V    |
| Input Voltage                           | $V_{IN}$        | -12~+5   | V    |
| Output Current                          | $I_O$           | -100     | mA   |
|                                         | $I_{O(max)}$    | -100     | mA   |
| Power Dissipation                       | $P_d$           | 200      | mW   |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 625      | °C/W |
| Junction Temperature                    | $T_j$           | 150      | °C   |
| Storage Temperature                     | $T_{stg}$       | -55~+150 | °C   |

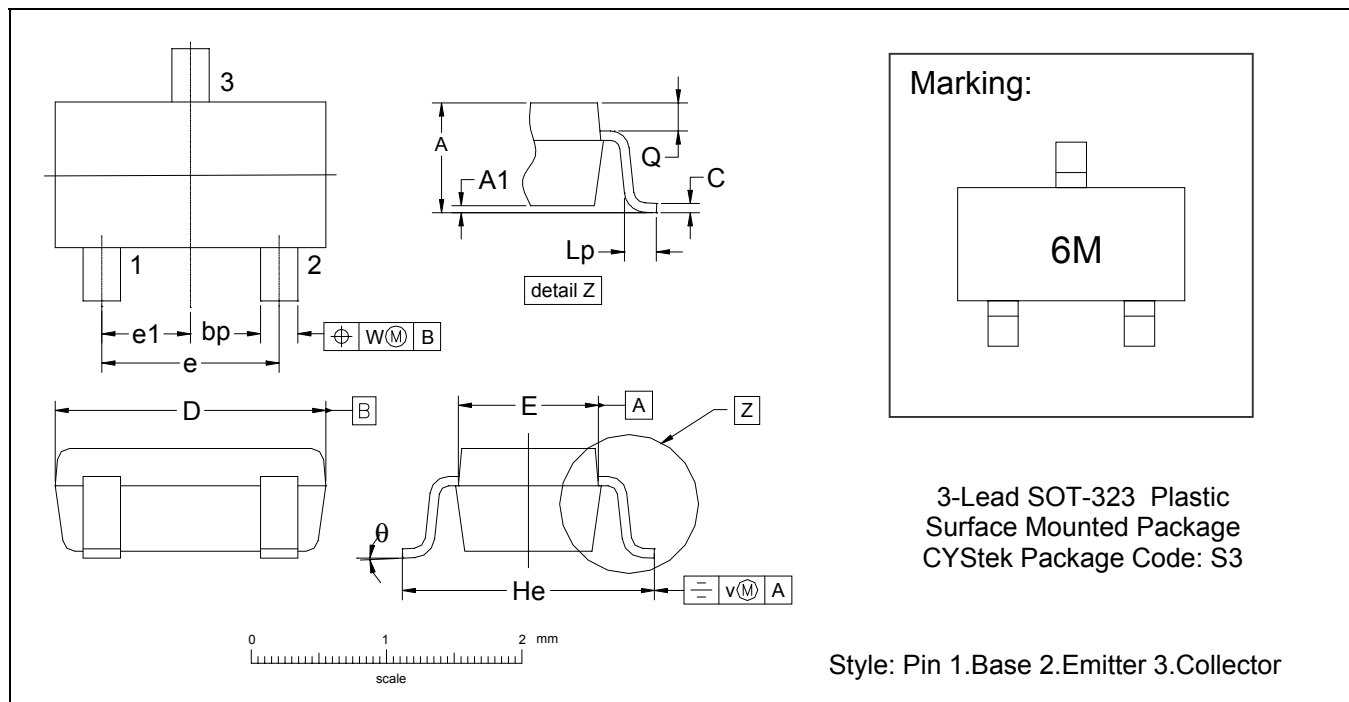
**Electrical Characteristics (Ta=25°C)**

| Parameter            | Symbol       | Min. | Typ. | Max. | Unit      | Test Conditions                           |
|----------------------|--------------|------|------|------|-----------|-------------------------------------------|
| Input Voltage        | $V_{I(off)}$ | -    | -    | -0.5 | V         | $V_{CC}=-5V$ , $I_o=-100\mu A$            |
|                      | $V_{I(on)}$  | -1.1 | -    | -    | V         | $V_o=-0.3V$ , $I_o=-5mA$                  |
| Output Voltage       | $V_{O(on)}$  | -    | -    | -0.3 | V         | $I_o/I_i=-5mA/-0.25mA$                    |
| Input Current        | $I_i$        | -    | -    | -3.6 | mA        | $V_i=-5V$                                 |
| Output Current       | $I_{O(off)}$ | -    | -    | -0.5 | $\mu A$   | $V_{CC}=-50V$ , $V_i=0V$                  |
| DC Current Gain      | $G_i$        | 80   | -    | -    | -         | $V_o=-5V$ , $I_o=-10mA$                   |
| Input Resistance     | $R_i$        | 1.54 | 2.2  | 2.86 | $k\Omega$ | -                                         |
| Resistance Ratio     | $R_2/R_1$    | 17   | 21   | 26   | -         | -                                         |
| Transition Frequency | $f_T$        | -    | 250  | -    | MHz       | $V_{CE}=-10V$ , $I_C=-5mA$ , $f=100MHz$ * |

\* Transition frequency of the device



## SOT-323 Dimension



\*: Typical

| DIM | Inches |        | Millimeters |      | DIM | Inches |        | Millimeters |      |
|-----|--------|--------|-------------|------|-----|--------|--------|-------------|------|
|     | Min.   | Max.   | Min.        | Max. |     | Min.   | Max.   | Min.        | Max. |
| A   | 0.0315 | 0.0433 | 0.80        | 1.10 | e1  | 0.0256 | -      | 0.65        | -    |
| A1  | 0.0000 | 0.0039 | 0.00        | 0.10 | He  | 0.0787 | 0.0886 | 2.00        | 2.25 |
| bp  | 0.0118 | 0.0157 | 0.30        | 0.40 | Lp  | 0.0059 | 0.0177 | 0.15        | 0.45 |
| C   | 0.0039 | 0.0098 | 0.10        | 0.25 | Q   | 0.0051 | 0.0091 | 0.13        | 0.23 |
| D   | 0.0709 | 0.0866 | 1.80        | 2.20 | v   | 0.0079 | -      | 0.2         | -    |
| E   | 0.0453 | 0.0531 | 1.15        | 1.35 | w   | 0.0079 | -      | 0.2         | -    |
| e   | 0.0512 | -      | 1.3         | -    | θ   | -      | -      | 10°         | 0°   |

Notes: 1.Controlling dimension: millimeters.

2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.

3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

### Material:

- Lead: 42 Alloy ; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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