



Micro Commercial Components



Micro Commercial Components  
20736 Marilla Street Chatsworth  
CA 91311  
Phone: (818) 701-4933  
Fax: (818) 701-4939

## Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- 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 negative 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
- Halogen free available upon request by adding suffix "-HF"

## Absolute Maximum Ratings

| Parameter                    | Symbol    | Value   | Unit |
|------------------------------|-----------|---------|------|
| Collector-Base Voltage       | $V_{CBO}$ | -50     | V    |
| Collector-Emitter Voltage    | $V_{CEO}$ | -50     | V    |
| Emitter-Base voltage         | $V_{EBO}$ | -5      | V    |
| Collector Current-Continuous | $I_C$     | -100    | mA   |
| Collector Dissipation        | $P_C$     | 200     | mW   |
| Junction Temperature Range   | $T_J$     | -55~150 | °C   |
| Storage Temperature Range    | $T_{STG}$ | -55~150 | °C   |

## Electrical Characteristics

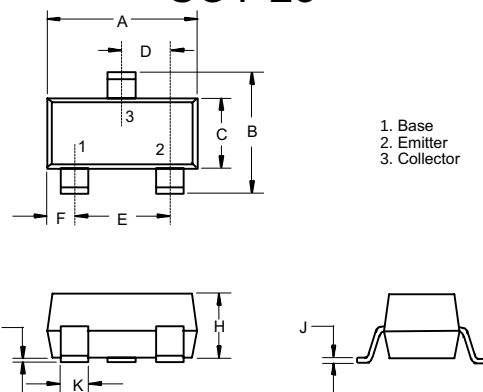
| Sym           | Parameter                                                            | Min | Typ | Max  | Unit       |
|---------------|----------------------------------------------------------------------|-----|-----|------|------------|
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage<br>( $I_C=-50\mu A$ , $I_E=0$ )     | -50 | --- | ---  | V          |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage<br>( $I_C=-1mA$ , $I_B=0$ )      | -50 | --- | ---  | V          |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage<br>( $I_E=-50\mu A$ , $I_C=0$ )       | -5  | --- | ---  | V          |
| $I_{CBO}$     | Collector Cut-off Current<br>( $V_{CB}=-50V$ , $I_E=0$ )             | --- | --- | -0.5 | $\mu A$    |
| $I_{EBO}$     | Emitter Cut-off Current<br>( $V_{EB}=-4V$ , $I_C=0$ )                | --- | --- | -0.5 | $\mu A$    |
| $h_{FE}$      | DC Current Gain<br>( $V_{CE}=-5V$ , $I_C=-1mA$ )                     | 100 | 250 | 600  | ---        |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage<br>( $I_C=-10mA$ , $I_B=-1mA$ ) | --- | --- | -0.3 | V          |
| $R_1$         | Input Resistor                                                       | 7   | 10  | 13   | K $\Omega$ |
| $f_T$         | Transition Frequency<br>( $V_{CE}=-10V$ , $I_C=-5mA$ , $f=100MHz$ )  | --- | 250 | ---  | MHz        |

\*Marking: 94

## DTA114TCA

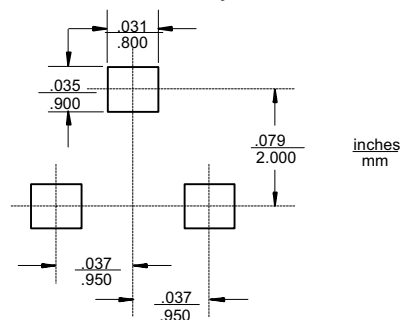
## PNP Digital Transistor

### SOT-23



| DIM | INCHES |       | MM   |      | NOTE |
|-----|--------|-------|------|------|------|
|     | MIN    | MAX   | MIN  | MAX  |      |
| A   | .110   | .120  | 2.80 | 3.04 |      |
| B   | .083   | .104  | 2.10 | 2.64 |      |
| C   | .047   | .055  | 1.20 | 1.40 |      |
| D   | .035   | .041  | .89  | 1.03 |      |
| E   | .070   | .081  | 1.78 | 2.05 |      |
| F   | .018   | .024  | .45  | .60  |      |
| G   | .0005  | .0039 | .013 | .100 |      |
| H   | .035   | .044  | .89  | 1.12 |      |
| J   | .003   | .007  | .085 | .180 |      |
| K   | .015   | .020  | .37  | .51  |      |

### Suggested Solder Pad Layout



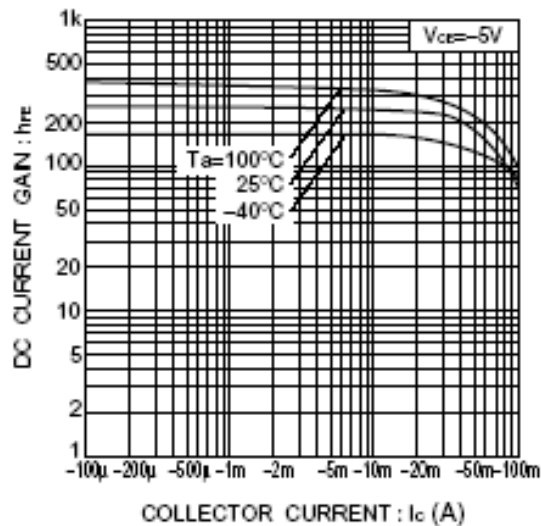


Fig.1 DC current gain vs. collector current

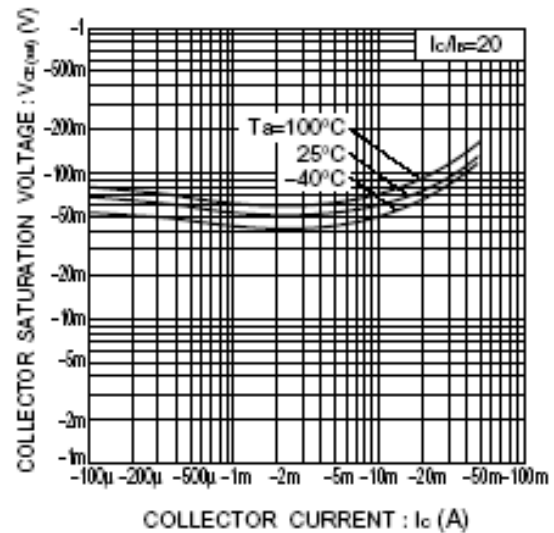
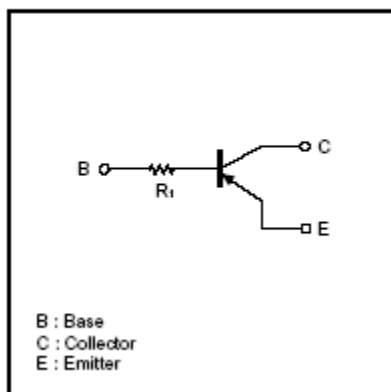


Fig.2 Collector-emitter saturation voltage vs. collector current

## ●Equivalent circuit



## Ordering Information :

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel; 3Kpcs/Reel |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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Contact Us :

➤ Address :

401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd  
Minhang District, Shanghai , China

➤ Sales :

Direct +86 (21) 6401-6692

Email [amall@ameya360.com](mailto:amall@ameya360.com)

QQ 800077892

Skype ameyasales1 ameyasales2

➤ Customer Service :

Email [service@ameya360.com](mailto:service@ameya360.com)

➤ Partnership :

Tel +86 (21) 64016692-8333

Email [mkt@ameya360.com](mailto:mkt@ameya360.com)