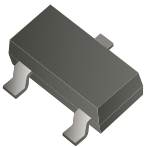


ADTA123ECA-HF (PNP)

RoHS Device  
Halogen Free



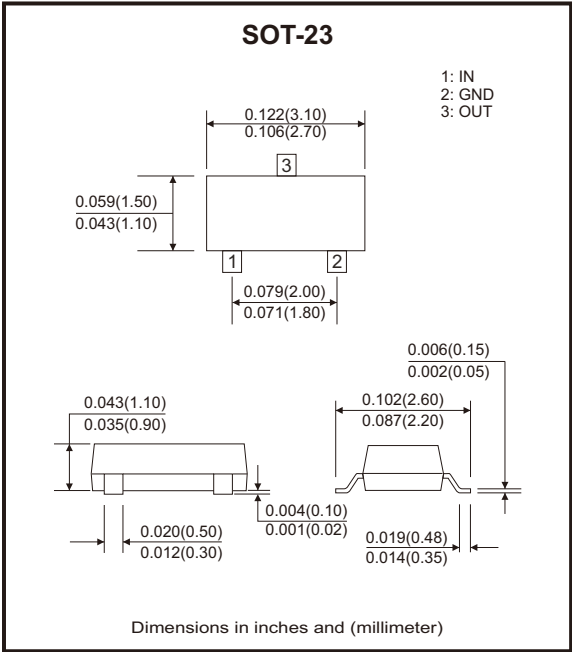
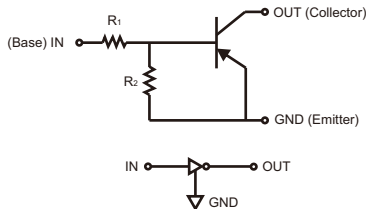
Features

- Built-in biasing resistors  
(R1=2.2kΩ, R2=2.2kΩ)
- AEC-Q101 Qualified.

Mechanical data

- Case: SOT-23, molded plastic.
- Terminals: Matte tin-plated leads, solderability  
per MIL-STD-202, method 208.
- Mounting position: Any.

Circuit Diagram



Maximum Ratings (at Ta=25°C unless otherwise noted)

| Parameter                            | Symbol           | Value       | Units |
|--------------------------------------|------------------|-------------|-------|
| Supply voltage                       | V <sub>CC</sub>  | -50         | V     |
| Input voltage                        | V <sub>I</sub>   | -12 to +10  | V     |
| Output current                       | I <sub>O</sub>   | -100        | mA    |
| Max. collector current               | I <sub>C</sub>   | -100        | mA    |
| Power dissipation                    | P <sub>D</sub>   | 200         | mW    |
| Operating junction temperature range | T <sub>J</sub>   | -55 to +150 | °C    |
| Storage temperature range            | T <sub>STG</sub> | -55 to +150 | °C    |

## Electrical Characteristics (at Ta=25°C unless otherwise noted)

| Parameter              | Symbol       | Test conditions                         | Min  | Typ | Max  | Units      |
|------------------------|--------------|-----------------------------------------|------|-----|------|------------|
| Input voltage          | $V_{I(off)}$ | $V_{CC} = -5V, I_o = -100\mu A$         | -0.5 |     |      | V          |
| Input voltage          | $V_{I(on)}$  | $V_o = -0.3V, I_o = -20mA$              |      |     | -3   |            |
| Output voltage         | $V_{O(on)}$  | $I_o = -10mA, I_i = -0.5mA$             |      |     | -0.3 | V          |
| Input current          | $I_i$        | $V_i = -5V$                             |      |     | -3.8 | mA         |
| Output current         | $I_{O(off)}$ | $V_{CC} = -50V, V_i = 0V$               |      |     | -0.5 | $\mu A$    |
| DC current gain        | $G_i$        | $V_o = -5V, I_o = -20mA$                | 20   |     |      |            |
| Input resistor         | $R_i$        |                                         | 1.54 | 2.2 | 2.86 | k $\Omega$ |
| Resistance ratio       | $R_2/R_1$    |                                         | 0.8  | 1   | 1.2  |            |
| Gain-bandwidth product | $f_r$        | $V_{CE} = -10V, I_E = -5mA, f = 100MHz$ |      | 250 |      | MHz        |

## Typical Rating and Characteristic Curves (ADTA123ECA-HF)

Fig.1 - Input Voltage vs. Output Current

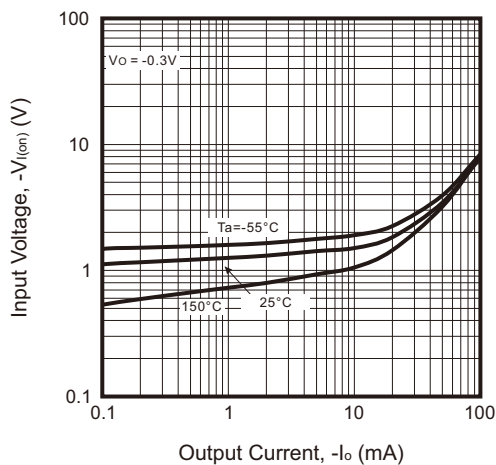


Fig.2 - Output Current vs. Input Voltage

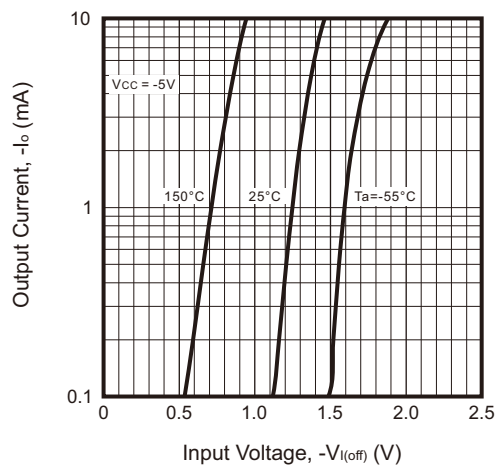


Fig.3 - DC Current Gain vs. Output Current

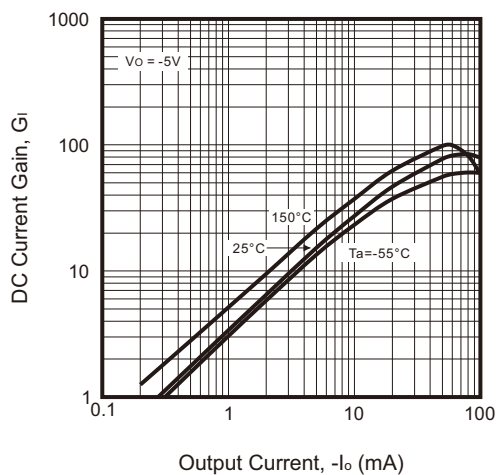
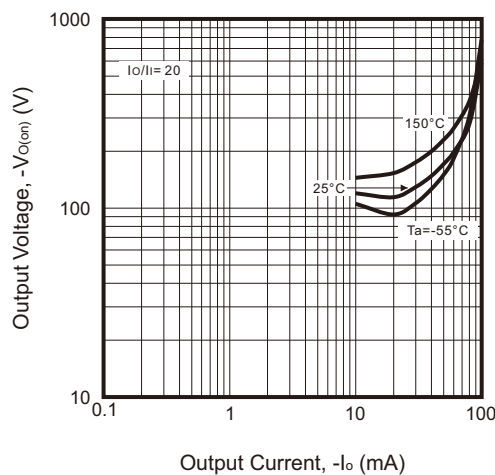
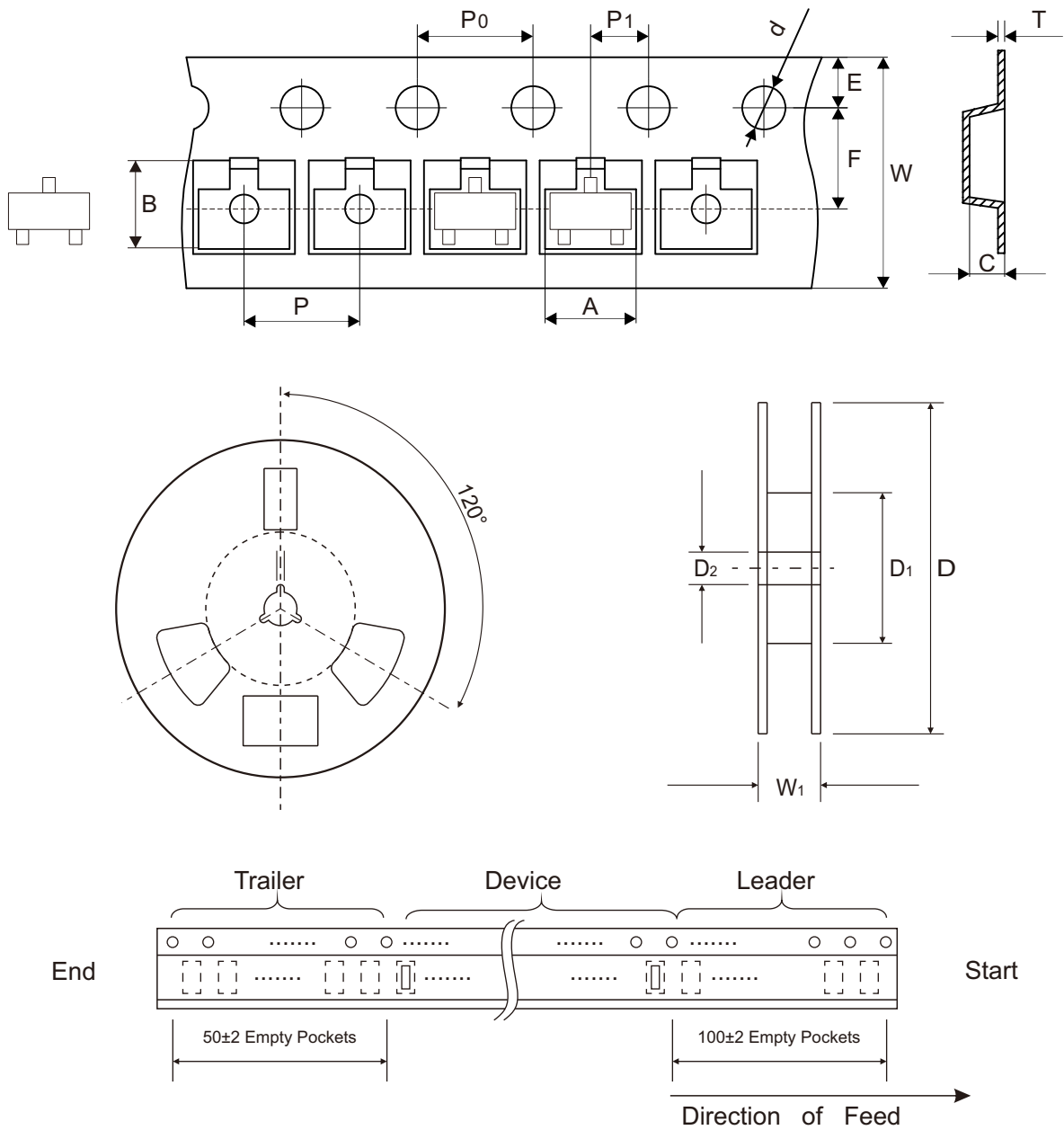


Fig.4 - Output Voltage vs. Output Current



Reel Taping Specification

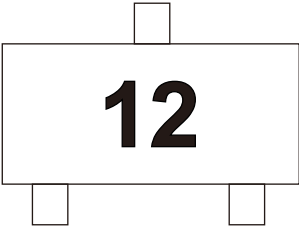


| SOT-23 | SYMBOL | A             | B             | C             | d             | D             | D1            | D2            |
|--------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        | (mm)   | 3.15 ± 0.10   | 2.77 ± 0.10   | 1.22 ± 0.10   | 1.50 ± 0.10   | 178.00 ± 1.00 | 54.00 ± 0.50  | 13.00 ± 0.50  |
|        | (inch) | 0.124 ± 0.004 | 0.109 ± 0.004 | 0.048 ± 0.004 | 0.059 ± 0.004 | 7.008 ± 0.039 | 2.126 ± 0.020 | 0.512 ± 0.020 |

| SOT-23 | SYMBOL | E             | F             | P             | P0            | P1            | T             | W             | W1            |
|--------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.10   | 4.00 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.05   | 0.20 ± 0.02   | 8.00 ± 0.30   | 12.50 ± 1.00  |
|        | (inch) | 0.069 ± 0.004 | 0.138 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.008 ± 0.001 | 0.315 ± 0.012 | 0.492 ± 0.039 |

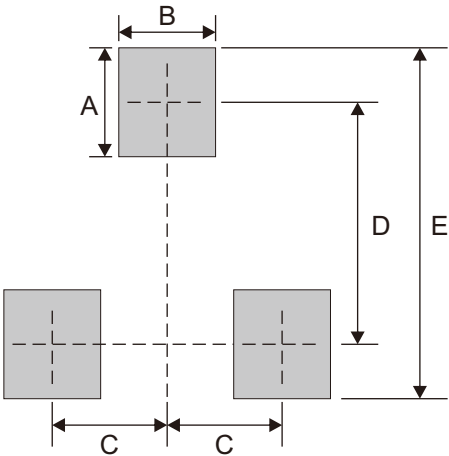
Marking Code

| Part Number   | Marking Code |
|---------------|--------------|
| ADTA123ECA-HF | 12           |



Suggested P.C.B. PAD Layout

| SIZE | SOT-23 |        |
|------|--------|--------|
|      | (mm)   | (inch) |
| A    | 0.90   | 0.035  |
| B    | 0.80   | 0.031  |
| C    | 0.95   | 0.037  |
| D    | 2.00   | 0.079  |
| E    | 2.90   | 0.114  |



Standard Packaging

| Case Type | REEL PACK  |                  |
|-----------|------------|------------------|
|           | REEL (pcs) | Reel Size (inch) |
| SOT-23    | 3,000      | 7                |