




**SPECIFICATION SHEET**

|                                |  |
|--------------------------------|--|
| <b>SPECIFICATION SHEET NO.</b> | P0610- SOT23S8550S2TY  |
| <b>DATE</b>                    | June 10, 2022  |
| <b>REVISION</b>                | A0   |
| <b>DESCRIPTION</b>             | <p>SMD Plastic-Encapsulate Transistors, SOT-23 series, 3 pads</p> <p>S8550 Type, PNP</p> <p>Collector-Emitter Voltage 25V. Collector Current 500mA Max.</p> <p>Operating Temp. Range -55°C ~+150°C,</p> <p>Package in Tape/Reel, 3000pcs/Reel</p> <p>RoHS/RoHS III compliant</p> |
| <b>CUSTOMER</b>                |  |
| <b>CUSTOMER PART NUMBER</b>    |  |
| <b>CROSS REF. PART NUMBER</b>  |  |
| <b>ORIGINAL PART NUMBER</b>    | MDD S8550  |
| <b>PART CODE</b>               | SOT23S8550S2TY   |

|                         |   |  |   |
|-------------------------|---|--|---|
| <b>VENDOR APPROVE</b>   |   |  |   |
| Issued/Checked/Approved |  |  |  |
| DATE: June 10, 2022     |   |  |   |

|                         |  |
|-------------------------|--|
| <b>CUSTOMER APPROVE</b> |  |
|                         |  |
| DATE:                   |  |

6/13/2022

**SMD PLASTIC-ENCAPULATE TRANSISTORS SOT23 SERIES**

**MAIN FEATURE**

- Complementary To S8050
- Collector Current:  $I_c=0.5A$



**APPLICATION**

- For PCB Application

**RFQ**

[Request For Quotation](#)

**PART CODE GUIDE**

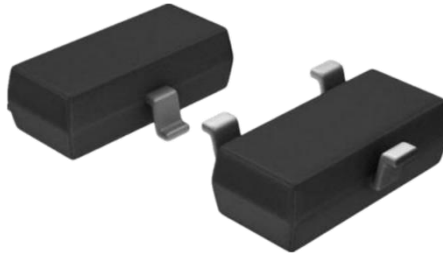
| SOT23 | S8550 | S | 2TY |
|-------|-------|---|-----|
| 1     | 2     | 3 | 4   |

- 1) **SOT23**: SMD Plastic-Encapsulate Transistors, 3 pads SOT-23 series Code
- 2) **S8550**: Type code for S8550 Type
- 3) **S**: Package code, Package in Tape/Reel, 3000pcs/Reel
- 4) **2TY**: Marking code for "2TY" on the case surface, Different Marking for different specification

**SMD PLASTIC-ENCAPULATE TRANSISTORS SOT23 SERIES**

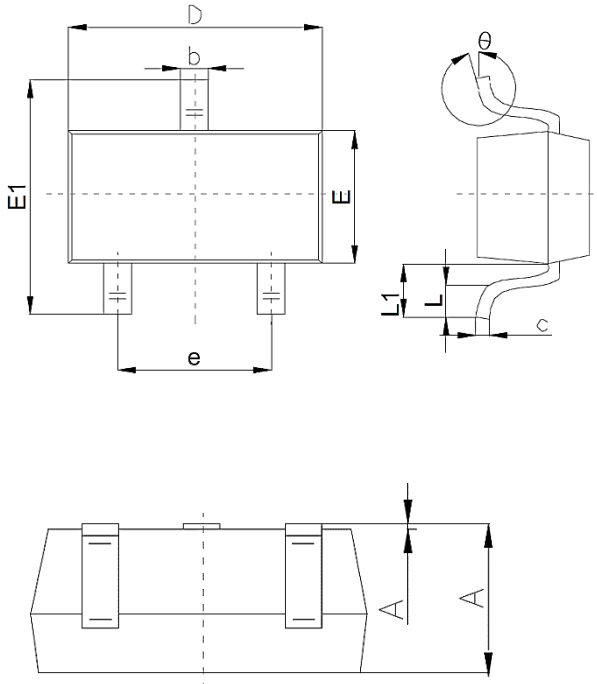
**DIMENSION (Unit: Inch/mm)**

Image for reference



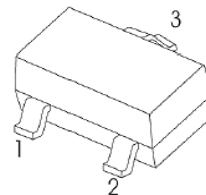
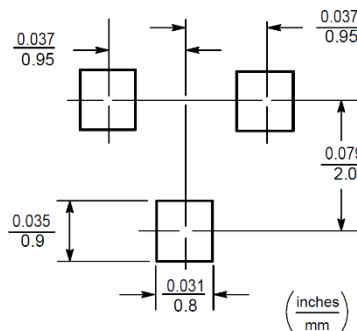
Marking: 2TY

SOT-23



| Symbol | Value ( mm ) |      |      |
|--------|--------------|------|------|
|        | Min.         | Typ. | Max. |
| A      | 0.90         |      | 1.40 |
| A1     |              |      | 0.10 |
| b      | 0.30         |      | 0.50 |
| c      | 0.08         |      | 0.20 |
| D      | 2.80         | 2.90 | 3.10 |
| E      | 1.20         |      | 1.60 |
| E1     | 2.25         |      | 2.80 |
| e      | 1.80         | 1.90 | 2.00 |
| L      | 0.10         |      | 0.50 |
| L1     | 0.40         |      | 0.55 |
| θ      | 0°           |      | 10°  |

Recommend Pad Layout



- 1.Base
- 2.Emmitter
- 3.Collector

**SMD PLASTIC-ENCAPULATE TRANSISTORS SOT23 SERIES**
**MECHANICAL DATA**

| Case                             | Terminals  | Polarity                        | Mounting Position | Weight per piece             |
|----------------------------------|--|---------------------------------|-------------------|------------------------------|
| JEDEC SOT-23 molded plastic body | Solder plated, Solderable per MIL-STD-750, Method 2026 | Polarity symbol marking on case | Any               | 0.00019 Ounce, 0.00591 grams |

**MAX. RATINGS AT Ta=25 °C**

| Parameter                      | SYMBOLS          | VALUE      | UNITS |
|--------------------------------|------------------|------------|-------|
|                                |                  | LIMIT      |       |
| Collector-base Voltage         | V <sub>CBO</sub> | -40        | Volts |
| Collector-emitter Voltage      | V <sub>CEO</sub> | -25        | Volts |
| Emitter-base Voltage           | V <sub>EBO</sub> | -5         | Volts |
| Collector Current - Continuous | I <sub>C</sub>   | -500       | mA    |
| Collector Power Dissipation    | P <sub>C</sub>   | 300        | mW    |
| Junction Temperature           | T <sub>J</sub>   | +150       | °C    |
| Storage Temperature Range      | T <sub>STG</sub> | -55 ~ +150 | °C    |

**SMD PLASTIC-ENCAPULATE TRANSISTORS SOT23 SERIES**
**ELECTRICAL CHARACTERISTICS AT Ta= 25 °C**

| Parameter                            | SYMBOLS              | VALUE |      |      | UNIT | Condition   |
|--------------------------------------|----------------------|-------|------|------|------|---|
|                                      |                      | Min.  | Typ. | Max. |      |   |
| Collector-base Breakdown Voltage     | V <sub>CBO</sub>     | -40   |      |      | V    | I <sub>C</sub> = -100 μA, I <sub>E</sub> =0               |
| Collector-emitter Breakdown Voltage  | V <sub>CEO</sub>     | -25   |      |      | V    | I <sub>C</sub> = -1mA, I <sub>B</sub> =0                  |
| Emitter-base Breakdown Voltage       | V <sub>EBO</sub>     | -5    |      |      | V    | I <sub>E</sub> = -100 μA, I <sub>C</sub> =0               |
| Collector Cut-off Current            | I <sub>CBO</sub>     |       |      | -0.1 | μA   | V <sub>CB</sub> = -40V, I <sub>E</sub> =0                 |
| Collector Cut-off Current            | I <sub>CEO</sub>     |       |      | -0.1 | μA   | V <sub>CB</sub> = -20V, I <sub>E</sub> =0                 |
| Emitter Cut-off Current              | I <sub>EBO</sub>     |       |      | -0.1 | μA   | V <sub>EB</sub> = -3V, I <sub>C</sub> =0                  |
| DC Current Gain                      | h <sub>FE(1)</sub>   | 120   |      | 400  |      | V <sub>CE</sub> =-1V, I <sub>C</sub> =-50mA               |
|                                      | h <sub>FE(1)</sub>   | 50    |      |      |      | V <sub>CE</sub> =-1V, I <sub>C</sub> =-500mA              |
| Collector-emitter Saturation Voltage | V <sub>CE(sat)</sub> |       |      | -0.6 | V    | I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA             |
|                                      |                      |       |      |      |      |   |
| Base-emitter Saturation Voltage      | V <sub>BE(sat)</sub> |       |      | -1.2 | V    | I <sub>C</sub> =-500mA, I <sub>B</sub> =-50 mA            |
|                                      |                      |       |      |      |      |   |
| Transition Frequency                 | f <sub>T</sub>       | 150   |      |      | MHz  | V <sub>CE</sub> =-6V, I <sub>C</sub> = -20mA<br>f= 30 MHz |

**CLASSIFICATION OF Hfe (1)**

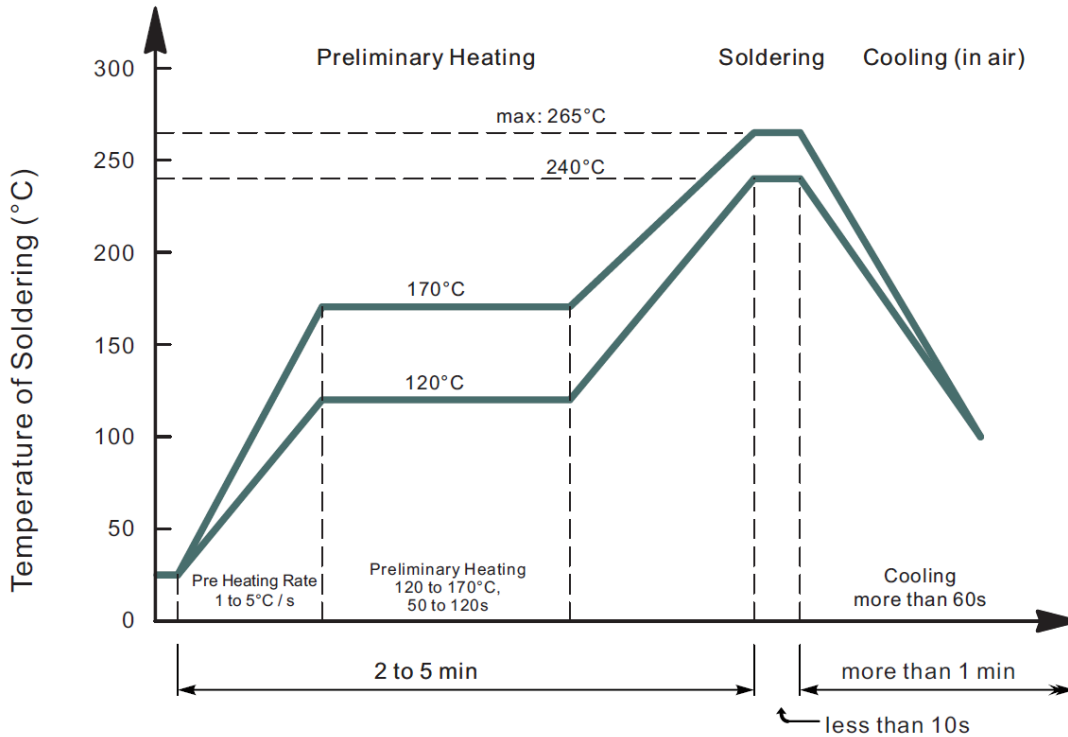
| Rank  | L         | H         | J       |
|-------|-----------|-----------|---------|
| Range | 120 ~ 200 | 200 ~ 350 | 300~400 |

**SMD PLASTIC-ENCCAPULATE TRANSISTORS SOT23 SERIES**
**RELIABILITY**

| Number | Experiment Items                   | Experiment Method And Conditions   | Reference Documents             |
|--------|------------------------------------|--|---------------------------------|
| 1      | Solder Resistance Test             | Test 260°C± 5°C for 10 ± 2 sec.<br>Immerse body into solder 1/16" ± 1/32"                                      | MIL-STD-750D<br>METHOD-2031.2   |
| 2      | Solderability Test                 | 230°C ±5°C for 5 sec.  | MIL-STD-750D<br>METHOD-2026.1 0 |
| 3      | Pull Test                          | 1 kg in axial lead direction for 10 sec.   | MIL-STD-750D<br>METHOD-2036.4   |
| 4      | Bend Test                          | 0.5Kg Weight Applied To Each Lead,<br>Bending Arcs 90 °C ± 5 °C For 3 Times                                    | MIL-STD-750D<br>METHOD-2036.4   |
| 5      | High Temperature Reverse Bias Test | TA=100°C for 1000 Hours at VR=80%<br>Rated VR  | MIL-STD-750D<br>METHOD-1038.4   |
| 6      | Forward Operation Life Test        | TA=25°C Rated Average Rectified<br>Current   | MIL-STD-750D<br>METHOD-1027.3   |
| 7      | Intermittent Operation Life Test   | On state: 5 min with rated IRMS Power<br>Off state: 5 min with Cool Forced Air.<br>On and off for 1000 cycles. | MIL-STD-750D<br>METHOD-1036.3   |
| 8      | Pressure Cooker Test               | 15 PSIG, TA=121°C, 4 hours   | MIL-S-19500<br>APPENOIXC        |
| 9      | Temperature Cycling Test           | -55°C~+125°C; 30 Minutes For Dwelled<br>Time 5 minutes for transferred time.<br>Total: 10 cycles.              | MIL-STD-750D<br>METHOD-1051.7   |
| 10     | Thermal Shock Test                 | 0°C for 5 minutes., 100°C for 5minutes,<br>Total: 10 cycles  | MIL-STD-750D<br>METHOD-1056.7   |
| 11     | Forward Surge Test                 | 8.3ms Single Sale Sine-wave One Surge.   | MIL-STD-750D<br>METHOD-4066.4   |
| 12     | Humidity Test                      | TA=65°C, RH=98% for 1000 hours.  | MIL-STD-750D<br>METHOD-1021.3   |
| 13     | High Temperature Storage life Test | 150°C for 1000 Hours   | MIL-STD-750D<br>METHOD-1031.5   |

**SMD PLASTIC-ENCCAPULATE TRANSISTORS SOT23 SERIES**

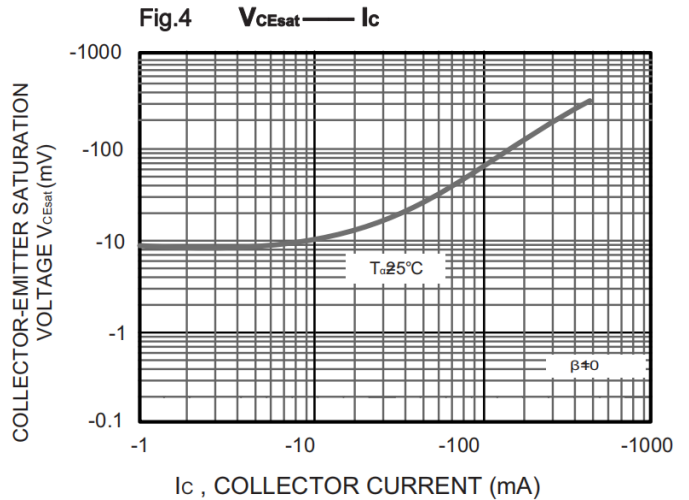
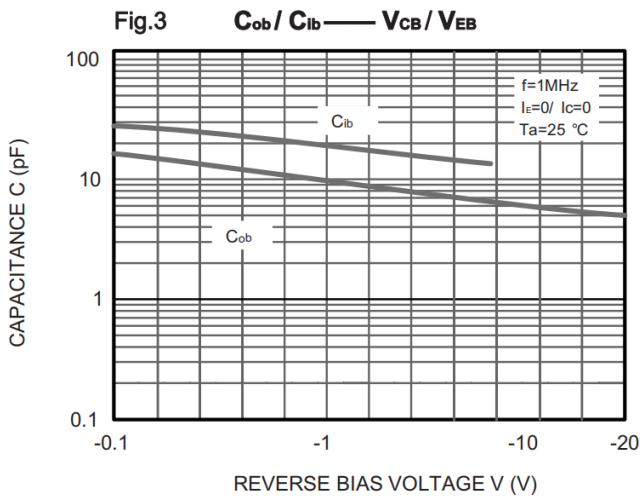
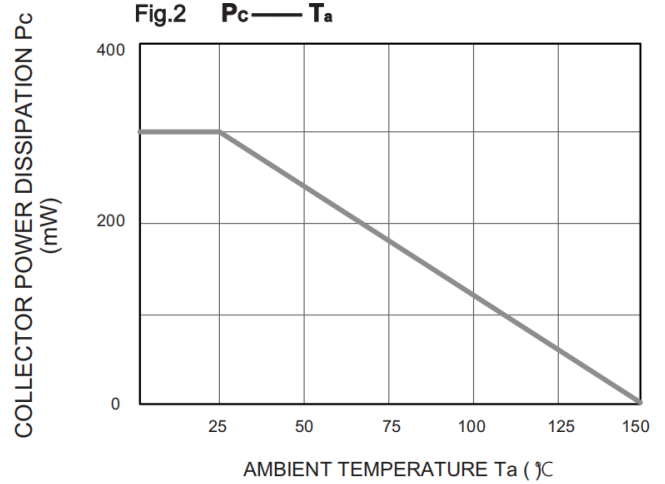
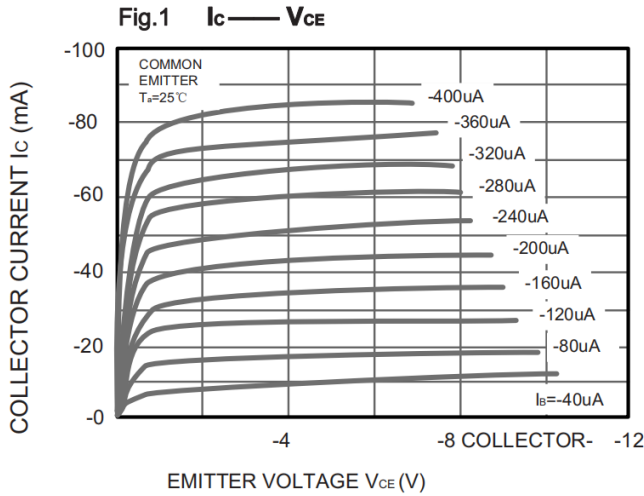
**SUGGESTED REFLOW PROFILE (For Reference Only)**



- Recommended peak temperature is over 245°C, If peak temperature is below 245 °C, you may adjust the following parameters; time length of peak temperature (longer), time length of soldering (longer), thickness of solder paste (thicker)
- Welding shall not exceed 2 times
- Remark: lead free solder paste (96.5 sn/3.0 Ag/0.5Cu)

**SMD PLASTIC-ENCAPULATE TRANSISTORS SOT23 SERIES**

**RATINGS AND CHARACTERISTIC CURVES (For Reference Only)**

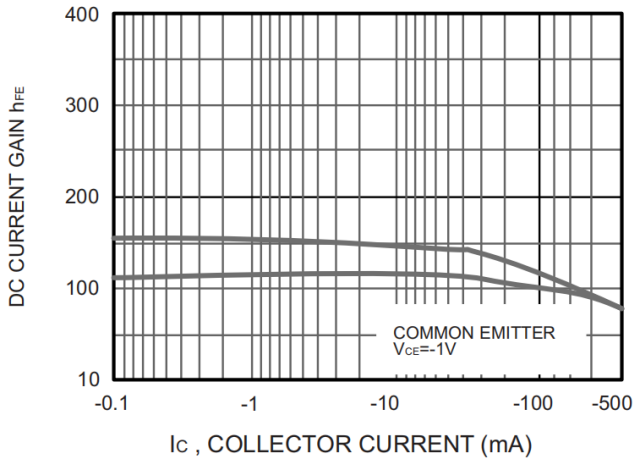




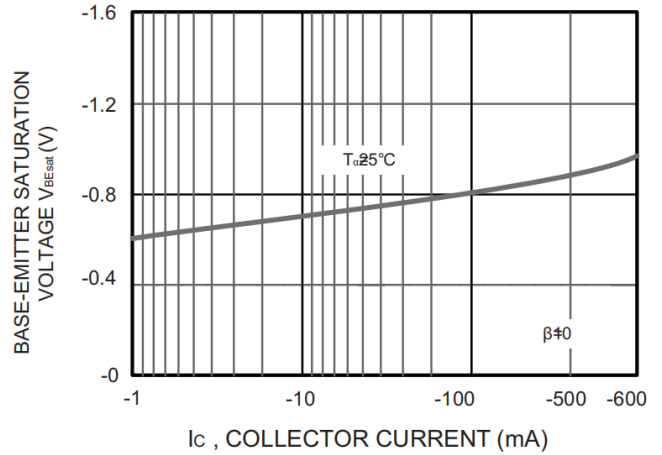
**SMD PLASTIC-ENCAPULATE TRANSISTORS SOT23 SERIES**

**RATINGS AND CHARACTERISTIC CURVES (For Reference Only)**

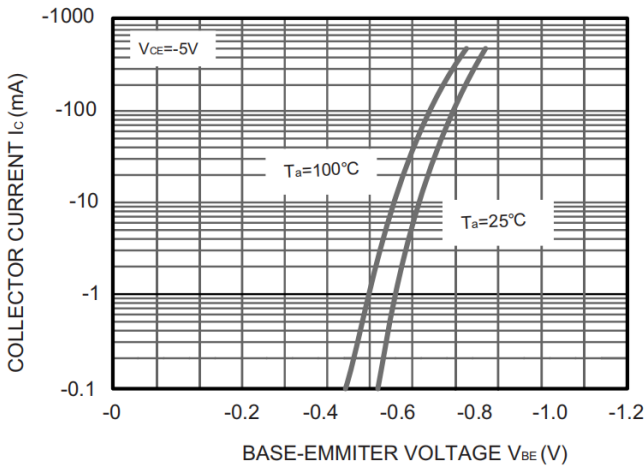
**Fig.5**  $h_{FE} - I_c$



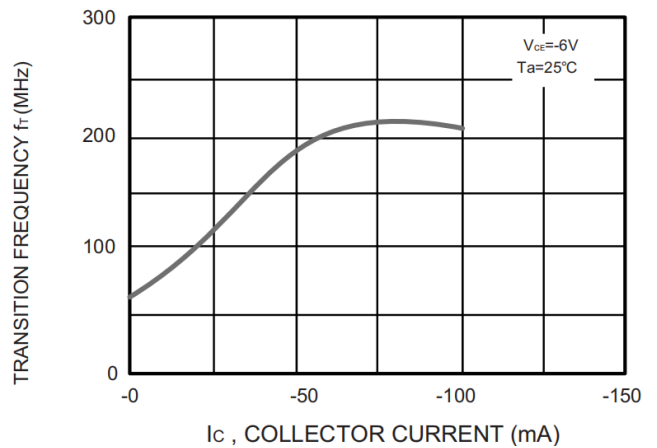
**Fig.6**  $V_{BEsat} - I_c$



**Fig.7**  $I_c - V_{BE}$

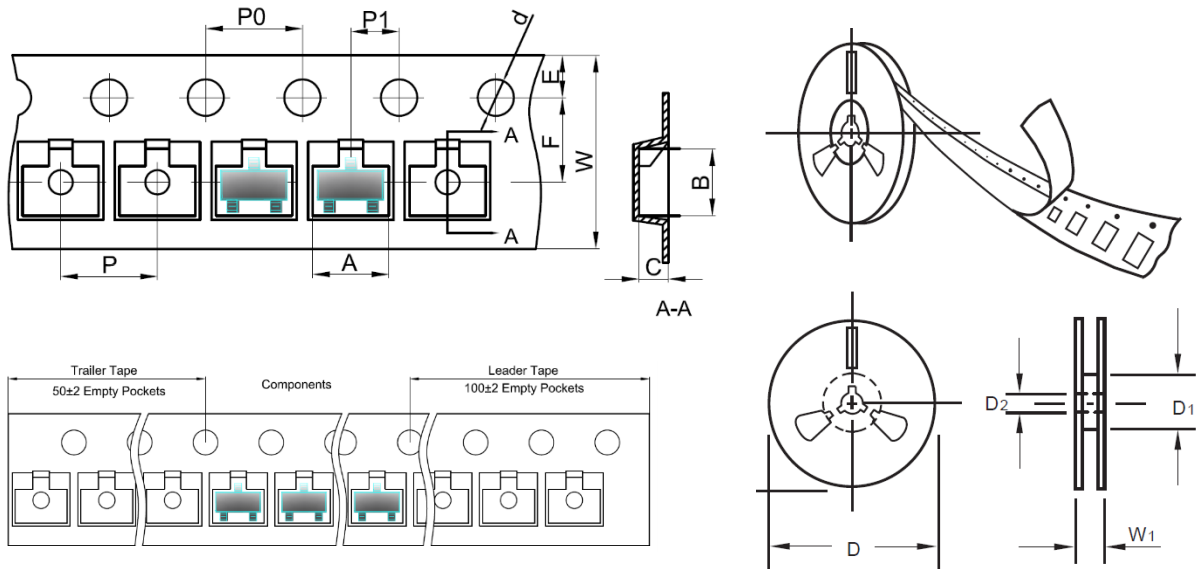


**Fig.8**  $f_T - I_c$



**SMD PLASTIC-ENCAPULATE TRANSISTORS SOT23 SERIES**
**TAPE/REEL (Unit: mm)**

All Devices are packed in accordance with EIA standard RS-481-A and specifications.



| Item                    | Symbol | Tolerance | SOT-23 |
|-------------------------|--------|-----------|--------|
| Carrier width           | A      | 0.1       | 3.15   |
| Carrier Length          | B      | 0.1       | 2.77   |
| Carrier Depth           | C      | 0.1       | 1.22   |
| Sprocket hole           | d      | 0.05      | 1.55   |
| 7"Reel outside diameter | D      | 2.0       | 178.00 |
| 7"Reel inner diameter   | D1     | Min.      | 54.4   |
| Feed hole diameter      | D2     | 0.5       | 13.00  |
| Sprocket hole position  | E      | 0.1       | 1.75   |
| Punch hole position     | F      | 0.1       | 3.50   |
| Punch hole pitch        | P      | 0.1       | 4.00   |
| Sprocket hole pitch     | P0     | 0.1       | 4.00   |
| Embossment center       | P1     | 0.1       | 2.00   |
| Overall tape thickness  | T      | 0.1       | 0.25   |
| Tape width              | W      | 0.3       | 8.00   |
| Reel width              | W1     | 1.0       | 19.50  |

**SMD PLASTIC-ENCAPULATE TRANSISTORS SOT23 SERIES**

**PACKAGE**

|           |          |
|-----------|----------|
| Case Code | SOT-23   |
| Reel Size | 7"       |
| Reel Size | 178 mm   |
| MPQ/Reel  | 3000 pcs |
| Qty. /Box | 6000 pcs |
| G.W/Box   | 1 LBS    |

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