

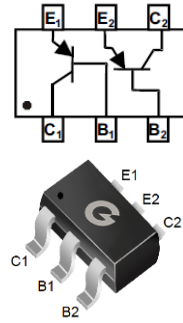
## Features

- Epitaxial Planar Die Construction.
- Complementary NPN Type Available (DMMT5551-6L).

HF

## Mechanical Data

- Case: SOT-23-6L
- Molding compound, UL flammability classification rating 94V-0.
- Terminals: Matte tin plated leads, solderable per MIL-STD-202, Method 208.



SOT-23-6L

## Ordering Information

| Part Number | Package   | Shipping               | Marking Code |
|-------------|-----------|------------------------|--------------|
| DMMT5401-6L | SOT-23-6L | 3000 pcs / Tape & Reel | K4S          |

## Maximum Ratings (@T<sub>A</sub>=25°C unless otherwise specified For Tr1 and Tr2 in common)

| Symbol                        | Parameter                               | Value       | Units |
|-------------------------------|-----------------------------------------|-------------|-------|
| <b>MAXIMUM RATINGS</b>        |                                         |             |       |
| V <sub>CBO</sub>              | Collector-Base Voltage                  | -160        | V     |
| V <sub>CEO</sub>              | Collector-Emitter Voltage               | -150        | V     |
| V <sub>EBO</sub>              | Emitter-Base Voltage                    | -5          | V     |
| I <sub>C</sub> (Note 1)       | Collector Current - Continuous          | -0.2        | A     |
| <b>Thermal Characteristic</b> |                                         |             |       |
| P <sub>D</sub> (Note 1,2)     | Power Dissipation Ta=25°C               | 300         | mW    |
| R <sub>θJA</sub> (Note 1)     | Thermal Resistance, Junction to Ambient | 417         | °C/W  |
| T <sub>J</sub>                | Junction Temperature                    | -55~150     | °C    |
| T <sub>STG</sub>              | Junction and Storage Temperature        | -55 to +150 | °C    |

Notes:1、Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

2、Maximum combined dissipation.

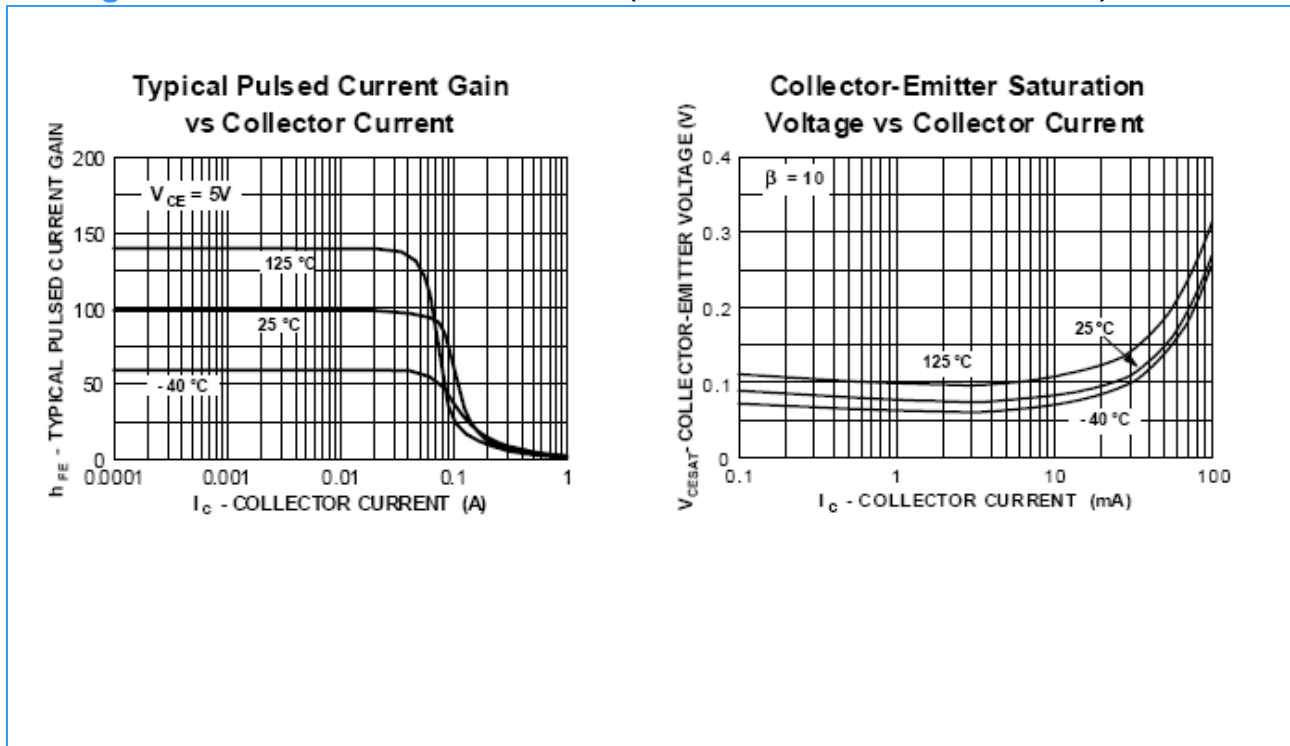
3、Short duration test pulse used to minimize self-heating effect.

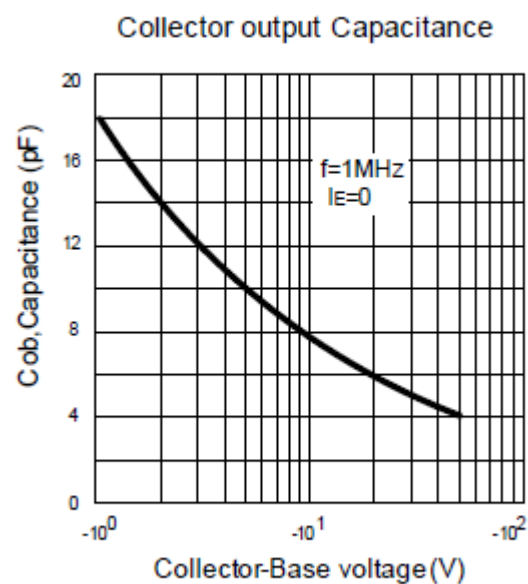
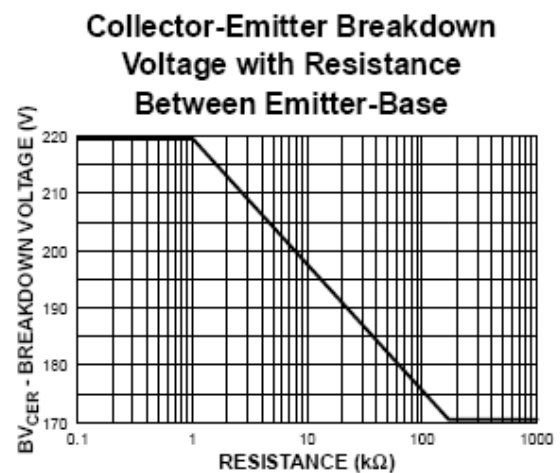
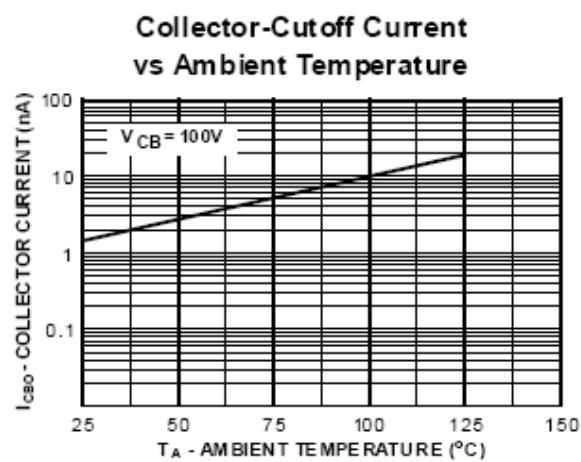
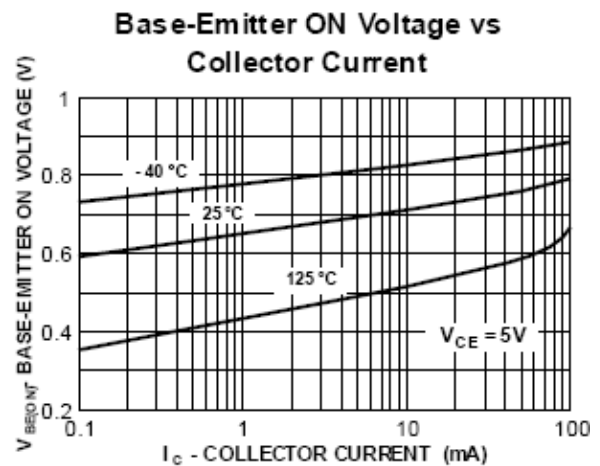
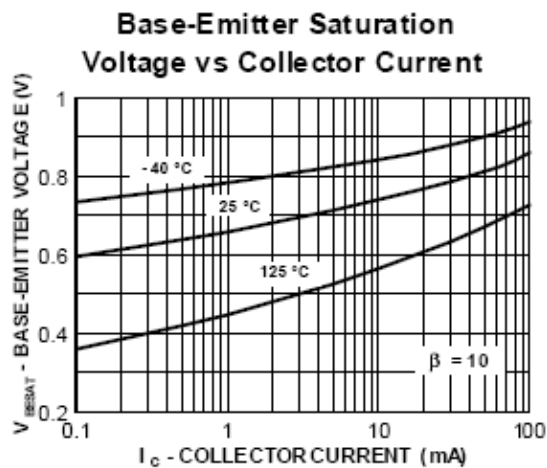
4、The DC Current Gain, h<sub>FE</sub>, (matched at I<sub>C</sub> = -10mA and V<sub>CE</sub> = -5V) Collector Emitter Saturation Voltage, V<sub>CE(SAT)</sub>, and Base Emitter Saturation Voltage, V<sub>BE(SAT)</sub> are matched with typical matched tolerances of 1% and maximum of 2%.

**Electrical Characteristics** (@ $T_A=25^\circ\text{C}$  unless otherwise specified For Tr1 and Tr2 in common)

| Parameter                            | Symbol               | Test conditions                                                                                             | MIN  | TYP | MAX          | UNIT     |
|--------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------|------|-----|--------------|----------|
| OFF CHARACTERISTICS (Note 3)         |                      |                                                                                                             |      |     |              |          |
| Collector-base breakdown voltage     | V <sub>(BR)CBO</sub> | I <sub>C</sub> =-100μA,I <sub>E</sub> =0                                                                    | -160 | -   | -            | V        |
| Collector-emitter breakdown voltage  | V <sub>(BR)CEO</sub> | I <sub>C</sub> =-1mA,I <sub>B</sub> =0                                                                      | -150 | -   | -            | V        |
| Emitter-base breakdown voltage       | V <sub>(BR)EBO</sub> | I <sub>E</sub> =-10μA,I <sub>C</sub> =0                                                                     | -5   | -   | -            | V        |
| Collector cut-off current            | I <sub>CBO</sub>     | V <sub>CB</sub> =-120V,I <sub>E</sub> =0<br>V <sub>CB</sub> =-120V,I <sub>E</sub> =0,T <sub>A</sub> = 100°C | -    | -   | -50<br>-50   | nA<br>uA |
| Emitter cut-off current              | I <sub>EBO</sub>     | V <sub>EB</sub> =-3V,I <sub>C</sub> =0                                                                      | -    | -   | -50          | nA       |
| ON CHARACTERISTICS (Note 3)          |                      |                                                                                                             |      |     |              |          |
| DC Current Gain (Note 4)             | h <sub>FE</sub>      | I <sub>C</sub> = -1.0mA, V <sub>CE</sub> = -5.0V                                                            | 50   | -   | -            | -        |
|                                      |                      | I <sub>C</sub> = -10mA, V <sub>CE</sub> = -5.0V                                                             | 60   | -   | 240          | -        |
|                                      |                      | I <sub>C</sub> = -50mA, V <sub>CE</sub> = -5.0V                                                             | 50   | -   | -            | -        |
| Collector-Emitter Saturation Voltage | V <sub>CE(sat)</sub> | I <sub>C</sub> =-10mA, I <sub>B</sub> =-1mA<br>I <sub>C</sub> =-50mA, I <sub>B</sub> =-5mA                  | -    | -   | -0.2<br>-0.5 | V        |
| Base-Emitter Saturation Voltage      | V <sub>BE(SAT)</sub> | I <sub>C</sub> = -10mA, I <sub>B</sub> = -1.0mA<br>I <sub>C</sub> = -50mA, I <sub>B</sub> = -5.0mA          | -    | -   | -1           | V        |
| SMALL SIGNAL CHARACTERISTICS         |                      |                                                                                                             |      |     |              |          |
| Transition frequency                 | f <sub>T</sub>       | V <sub>CE</sub> =-10V, I <sub>C</sub> =-10mA<br>f=100MHz                                                    | 100  | -   | 300          | MHz      |
| Collector output capacitance         | C <sub>obo</sub>     | V <sub>CB</sub> =-10V,f=1MHz                                                                                | -    | -   | 6            | pF       |
| Small Signal Current Gain            | h <sub>fe</sub>      | I <sub>C</sub> =-1.0mA,V <sub>CE</sub> =-10V,f= 1.0kHz                                                      | 40   | -   | 200          | -        |
| Noise Figure                         | NF                   | V <sub>CE</sub> = -5.0V, I <sub>C</sub> = -200uA, R <sub>S</sub> = 10Ω,f= 1.0kHz                            | -    | -   | 8            | dB       |

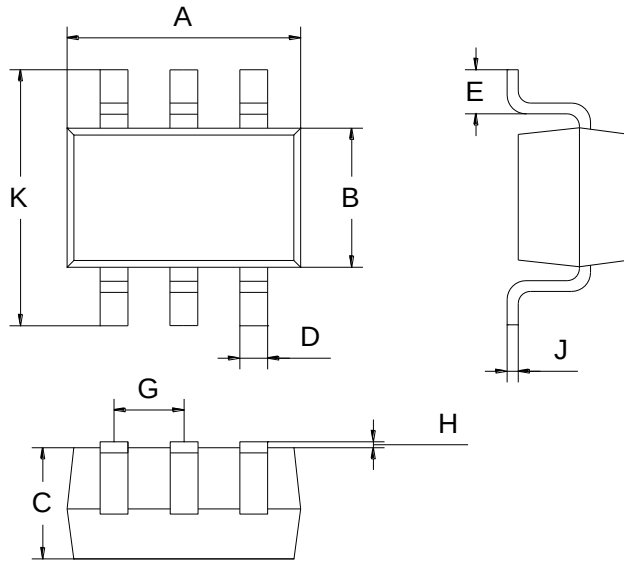
**Ratings and Characteristic Curves** ( $T_A=25^\circ\text{C}$  unless otherwise noted)





Package Outline Dimensions(unit:mm)

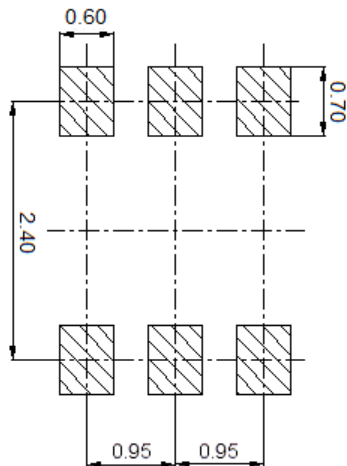
SOT-23-6L



| SOT-23-6L |      |      |
|-----------|------|------|
| Dim       | Min  | Max  |
| A         | 2.80 | 3.00 |
| B         | 1.50 | 1.70 |
| C         | 1.00 | 1.20 |
| D         | 0.35 | 0.45 |
| E         | 0.35 | 0.55 |
| G         | 0.90 | 1.00 |
| H         | 0.02 | 0.10 |
| J         | 0.10 | 0.20 |
| K         | 2.60 | 3.00 |

SOLDERING FOOTPRINT(unit:mm)

SOT-23-6L



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