

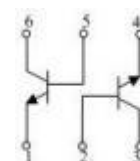
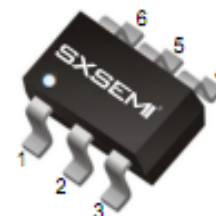
### FEATURES

- Epitaxial Planar Die Construction
- Complementary PNP Type Available(MMDT9015)
- Ideal for Medium Power Amplification and Switching

### MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol         | Parameter                                        | Value    | Unit               |
|----------------|--------------------------------------------------|----------|--------------------|
| $V_{CBO}$      | Collector- Base Voltage                          | 50       | V                  |
| $V_{CEO}$      | Collector-Emitter Voltage                        | 45       | V                  |
| $V_{EBO}$      | Emitter-Base Voltage                             | 5        | V                  |
| $I_C$          | Collector Current -Continuous                    | 0.1      | A                  |
| $P_C$          | Collector Power Dissipation                      | 0.2      | W                  |
| $T_J, T_{stg}$ | Operation Junction and Storage Temperature Range | -55~+150 | $^{\circ}\text{C}$ |

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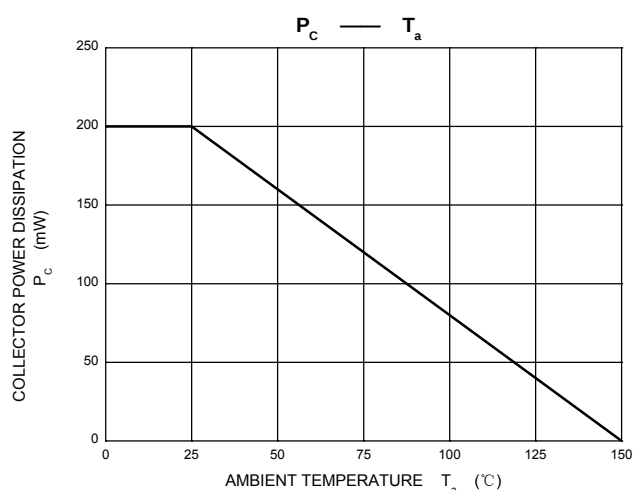
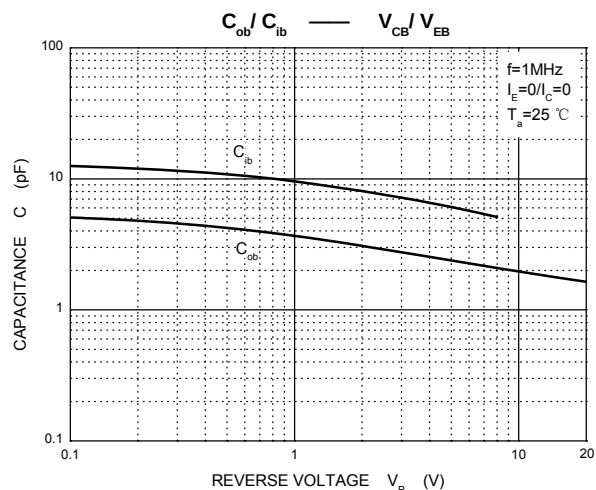
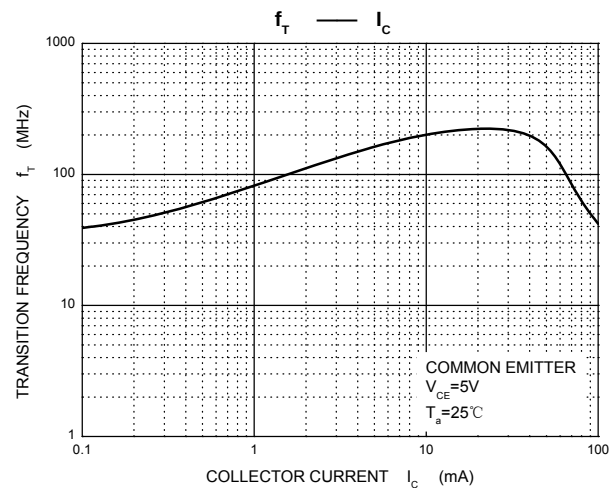
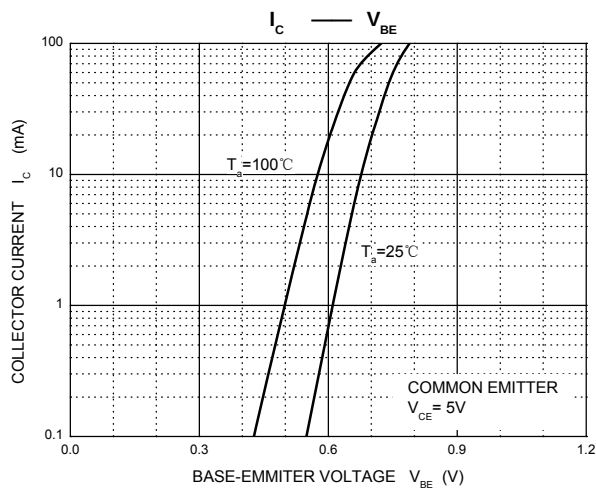
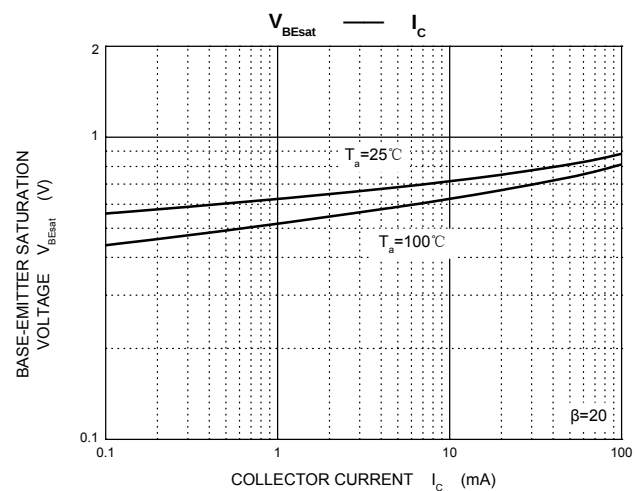
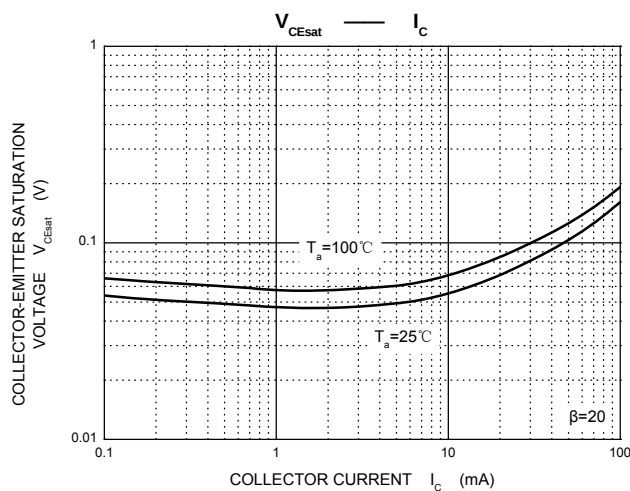
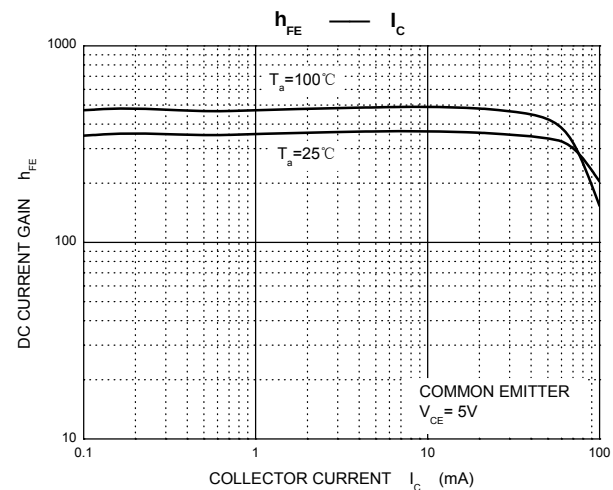
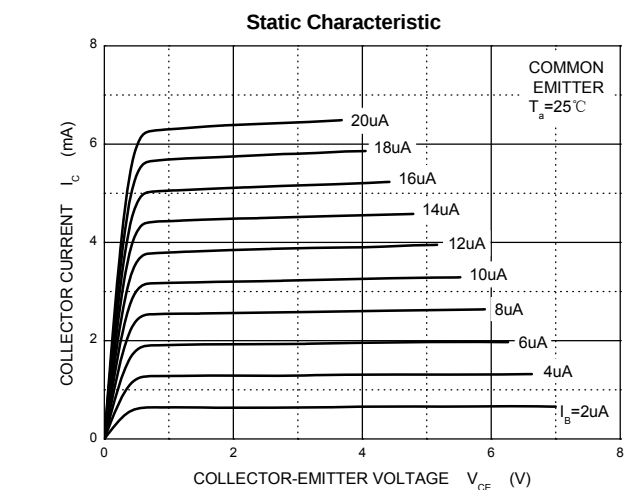
MARKING:TGL6

### ELECTRICAL CHARACTERISTICS ( $T_a=25^{\circ}\text{C}$ unless otherwise specified)

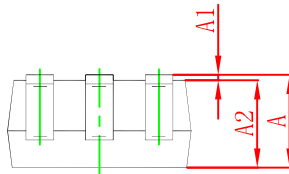
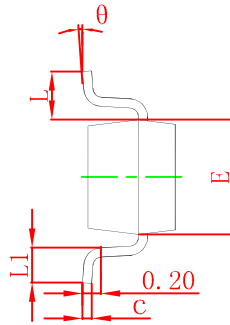
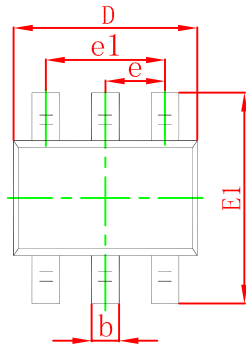
| Parameter                            | Symbol        | Test conditions                                                          | Min  | Typ | Max | Unit          |
|--------------------------------------|---------------|--------------------------------------------------------------------------|------|-----|-----|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=100\mu\text{A}, I_E=0$                                              | 50   |     |     | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=100\mu\text{A}, I_B=0$                                              | 45   |     |     | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=100\mu\text{A}, I_C=0$                                              | 5    |     |     | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=50\text{V}, I_E=0$                                               |      |     | 0.1 | $\mu\text{A}$ |
| Collector cut-off current            | $I_{CEO}$     | $V_{CE}=35\text{V}, I_B=0$                                               |      |     | 1   | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=4\text{V}, I_C=0$                                                |      |     | 0.1 | $\mu\text{A}$ |
| DC current gain                      | $h_{FE}$      | $V_{CE}=5\text{V}, I_C=1\text{mA}$                                       | 300  |     | 400 |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=100\text{mA}, I_B=5\text{mA}$                                       |      |     | 0.3 | V             |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | $I_C=100\text{mA}, I_B=5\text{mA}$                                       |      |     | 1   | V             |
| Base-emitter voltage                 | $V_{BE}$      | $V_{CE}=5\text{V}, I_C=2\text{mA}$                                       | 0.58 |     | 0.7 | V             |
| Transition frequency                 | $f_T$         | $V_{CE}=5\text{V}, I_C=10\text{mA}, f=30\text{MHz}$                      | 150  |     |     | MHz           |
| Collector output capacitance         | $C_{ob}$      | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$                                |      |     | 3.5 | pF            |
| Noise Figure                         | NF            | $V_{CE}=5\text{V}, I_C=0.2\text{mA}, R_g=2\text{k}\Omega, f=1\text{kHz}$ |      |     | 10  | dB            |

# Typical Characteristics

DUAL TRANSISTOR (NPN+NPN)

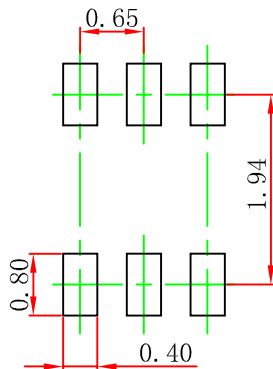


## SOT-363 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.100 | 0.035                | 0.043 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.000 | 0.035                | 0.039 |
| b      | 0.150                     | 0.350 | 0.006                | 0.014 |
| c      | 0.100                     | 0.150 | 0.004                | 0.006 |
| D      | 2.000                     | 2.200 | 0.079                | 0.087 |
| E      | 1.150                     | 1.350 | 0.045                | 0.053 |
| E1     | 2.150                     | 2.400 | 0.085                | 0.094 |
| e      | 0.650 TYP                 |       | 0.026 TYP            |       |
| e1     | 1.200                     | 1.400 | 0.047                | 0.055 |
| L      | 0.525 REF                 |       | 0.021 REF            |       |
| L1     | 0.260                     | 0.460 | 0.010                | 0.018 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

## SOT-363 Suggested Pad Layout



### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.