

SOT-363 Plastic-Encapsulate Transistors

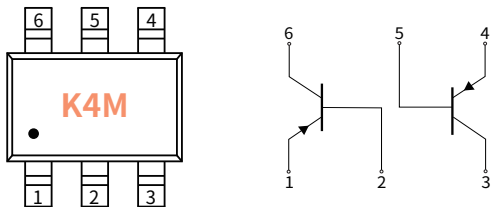
Features

- Power dissipation of 200mW
- Ideal for low power amplification and switching
- Complementary to MMDT5551
- Epitaxial planar die construction

Mechanical Data

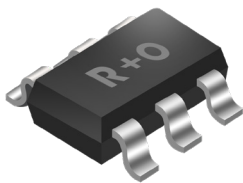
- Case: SOT-363  
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant,halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

Function Diagram



Collector-Emitter Voltage  
VCEO -150V  
Collector Current  
-0.2 Ampere

SOT-363



Ordering Information

| PACKAGE | PACKAGE CODE | UNIT WEIGHT(g) | REEL(pcs) | BOX(pcs) | CARTON(pcs) | DELIVERY MODE |
|---------|--------------|----------------|-----------|----------|-------------|---------------|
| SOT-363 | R1           | 0.0068         | 3000      | 45000    | 180000      | 7"            |

Maximum Ratings (Ta=25°C Unless otherwise specified)

| PARAMETER                   | SYMBOL           | UNIT  | VALUE     |
|-----------------------------|------------------|-------|-----------|
| Collector-Base Voltage      | V <sub>CBO</sub> | V     | -160      |
| Collector-Emitter Voltage   | V <sub>CEO</sub> |       | -150      |
| Emitter-Base Voltage        | V <sub>EBO</sub> |       | -5.0      |
| Collector Current           | I <sub>C</sub>   | mA    | -200      |
| Collector Power Dissipation | P <sub>C</sub>   | mW    | 200       |
| Storage temperature         | T <sub>stg</sub> | °C    | -55 ~+150 |
| Junction temperature        | T <sub>j</sub>   | °C    | 150       |
| Typical Thermal Resistance  | R <sub>θJA</sub> | °C /W | 625       |

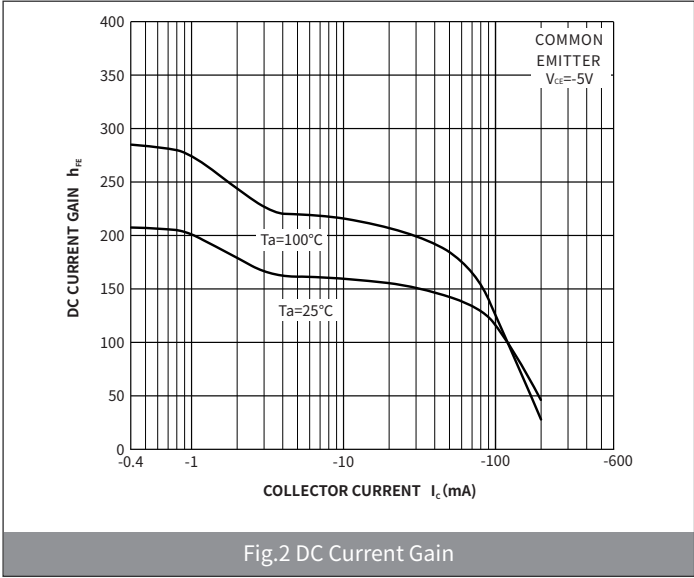
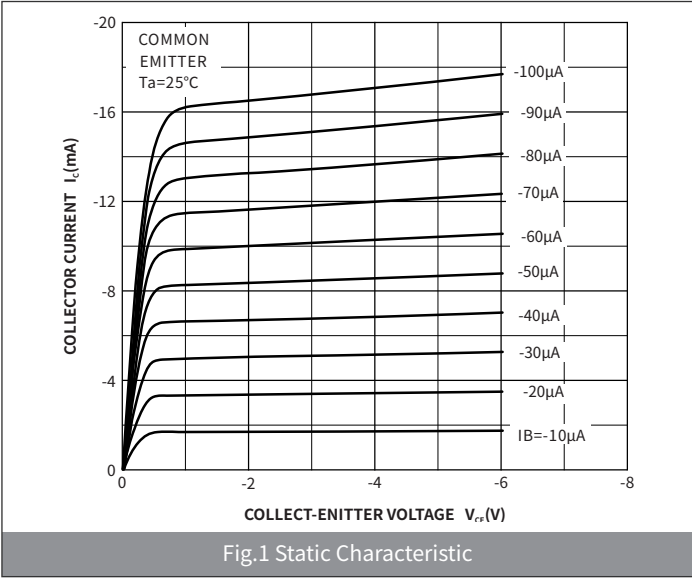
Small-signal Characteristics

| ITEM                 | SYMBOL         | Condition                                              | UNIT | Min | Typ | Max |
|----------------------|----------------|--------------------------------------------------------|------|-----|-----|-----|
| Transition frequency | f <sub>T</sub> | I <sub>C</sub> =-10mA, V <sub>CE</sub> =-10V, f=100MHz | MHz  | 100 | —   | —   |

● Electrical Characteristics (Ta=25°C Unless otherwise noted)

| PARAMETER                            | SYMBOL        | UNIT | Condition                                      | Min  | Typ | Max  |
|--------------------------------------|---------------|------|------------------------------------------------|------|-----|------|
| Collector-Base Breakdown Voltage     | $V_{(BR)CBO}$ | V    | $I_C=-100\mu A, I_E=0$                         | -160 | —   | —    |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ |      | $I_C=-1.0mA, I_B=0$                            | -150 | —   | —    |
| Emitter-Base Breakdown Voltage       | $V_{(BR)EBO}$ |      | $I_E=-10\mu A, I_C=0$                          | -5.0 | —   | —    |
| Collector-Base cut-off current       | $I_{CBO}$     | nA   | $V_{CB}=-120V, I_E=0$                          | —    | —   | -50  |
| Emitter-Base cut-off current         | $I_{EBO}$     |      | $V_{EB}=-3.0V, I_C=0$                          | —    | —   | -50  |
| DC Current Gain                      | $h_{FE(1)}$   | —    | $I_C=-1mA, V_{CE}=-5.0V$                       | 50   | —   | —    |
|                                      | $h_{FE(2)}$   | —    | $I_C=-10mA, V_{CE}=-5.0V$                      | 100  | —   | 300  |
|                                      | $h_{FE(3)}$   | —    | $I_C=-50mA, V_{CE}=-5.0V$                      | 50   | —   | —    |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | V    | $I_C=-10mA, I_B=-1.0mA$                        | —    | —   | -0.2 |
|                                      |               |      | $I_C=-50mA, I_B=-5.0mA$                        | —    | —   | -0.5 |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ | V    | $I_C=-10mA, I_B=-1.0mA$                        | —    | —   | -1.0 |
|                                      |               |      | $I_C=-50mA, I_B=-5.0mA$                        | —    | —   | -1.0 |
| Output Capacitance                   | $C_{ob}$      | pF   | $V_{CB}=-10V, I_E=0, f=1MHz$                   | —    | —   | 6    |
| Noise figure                         | NF            | dB   | $V_{CE}=-5V, I_C=-0.2mA, f=1kHz, R_g=10\Omega$ | —    | —   | 8    |

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



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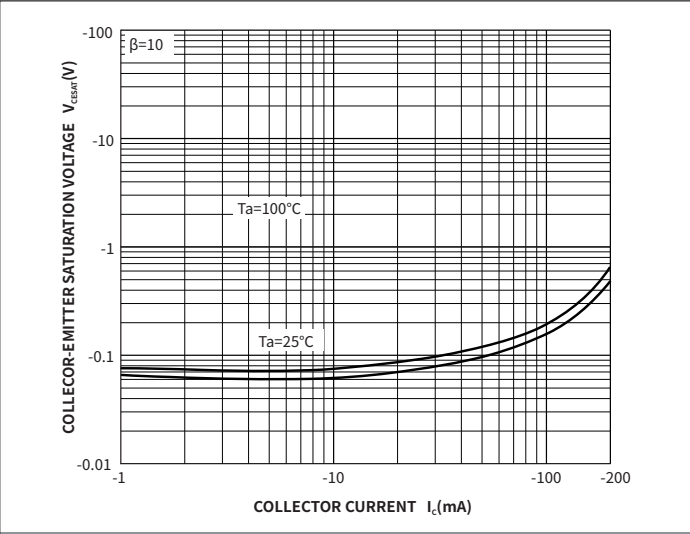


Fig.3 Collector-Emitter Saturation Voltage

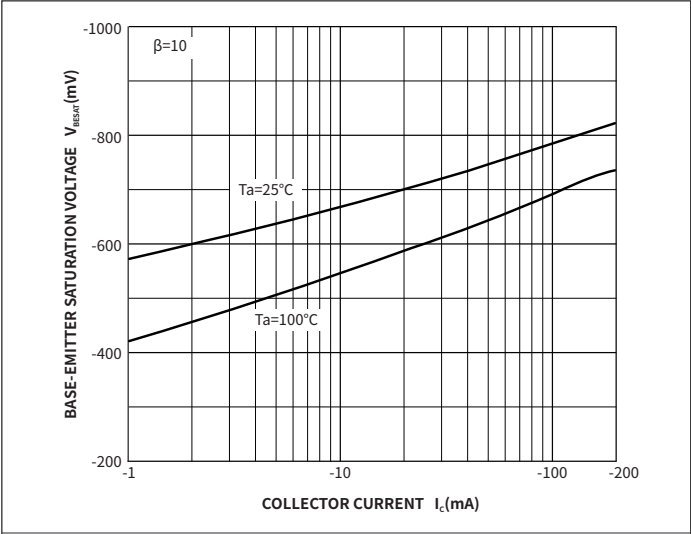


Fig.4 Base-Emitter Saturation Voltage

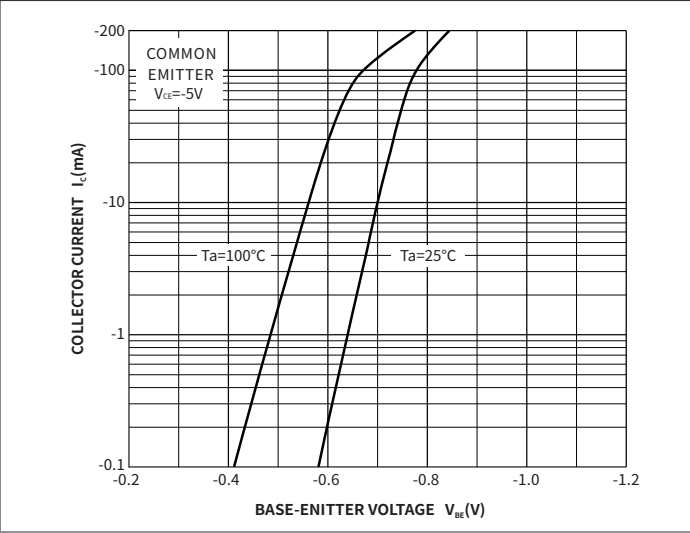


Fig.5 Base-Emitter On Voltage

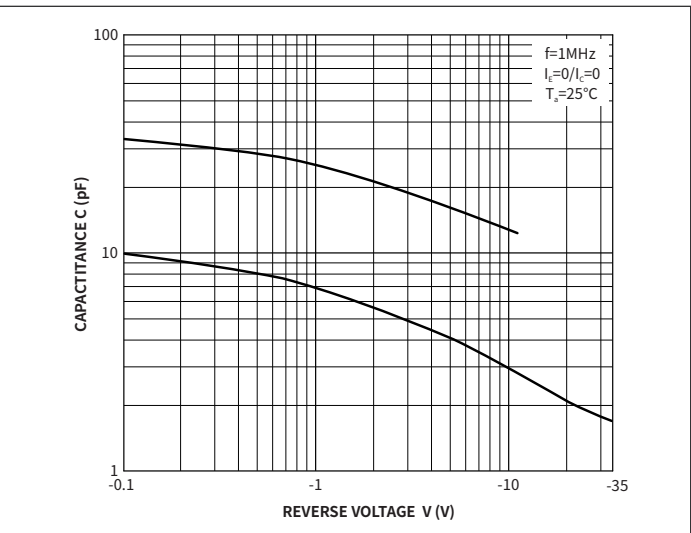
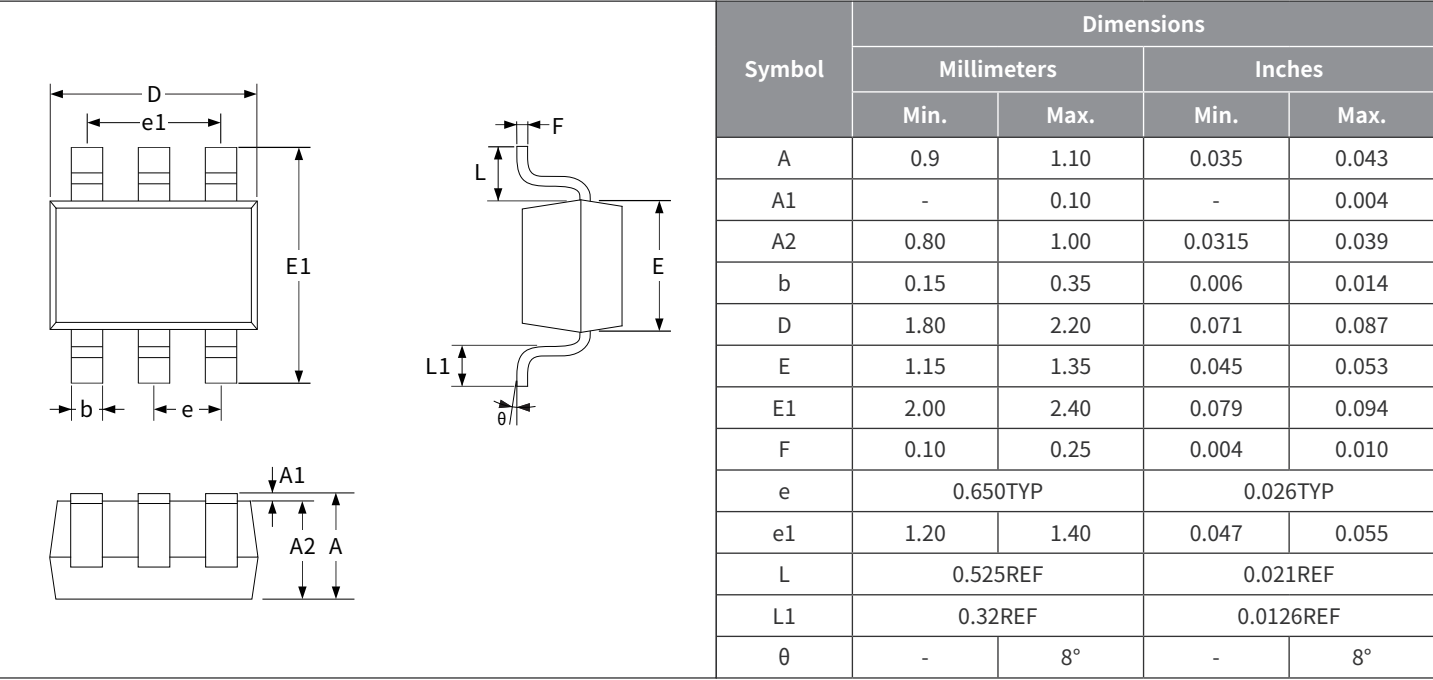


Fig.6  $C_{ob}/C_{ib}-V_{CB}V_{EB}$

● Package Outline Dimensions (SOT-363)



● Suggested Pad Layout

