

GSMBT4075 NPN EPITAXIAL PLANAR TRANSISTOR

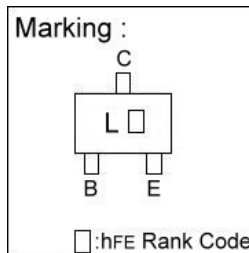
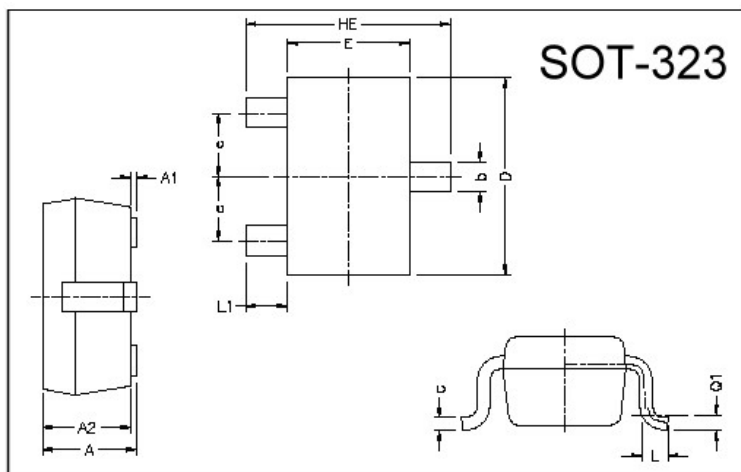
Description

The GSMBT4075 is designed for general purpose switching and amplifier applications.

Features

- Excellent hFE Linearity : $h_{FE}(0.1mA)/h_{FE}(2mA)=0.95$ (Typ.)
- High hFE : $h_{FE} = 70\sim 700$
- Complementary to GSMBT2014

Package Dimensions



| REF. | Millimeter | | REF. | Millimeter | |
|------|------------|------|------|------------|------|
| | Min. | Max. | | Min. | Max. |
| A | 0.80 | 1.10 | L1 | 0.42 REF. | |
| A1 | 0 | 0.10 | L | 0.15 | 0.35 |
| A2 | 0.80 | 1.00 | b | 0.25 | 0.40 |
| D | 1.80 | 2.20 | c | 0.10 | 0.25 |
| E | 1.15 | 1.35 | e | 0.65 REF. | |
| HE | 1.80 | 2.40 | Q1 | 0.15 BSC. | |

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Ratings | Unit |
|------------------------------|-----------|----------|------------------|
| Junction Temperature | T_j | +150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -55~+150 | $^\circ\text{C}$ |
| Collector to Base Voltage | V_{CBO} | 60 | V |
| Collector to Emitter Voltage | V_{CEO} | 50 | V |
| Emitter to Base Voltage | V_{EBO} | 5 | V |
| Collector Current | I_C | 150 | mA |
| Base Current | I_B | 30 | mA |
| Total Power Dissipation | P_D | 225 | mW |

Electrical Characteristics ($T_a = 25^\circ\text{C}$)

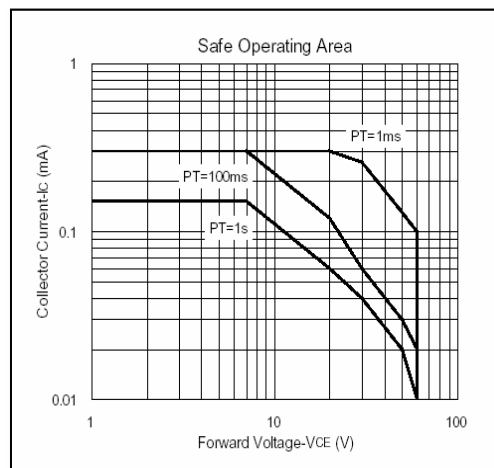
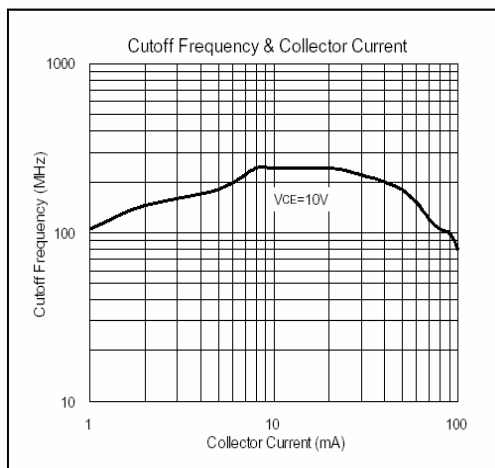
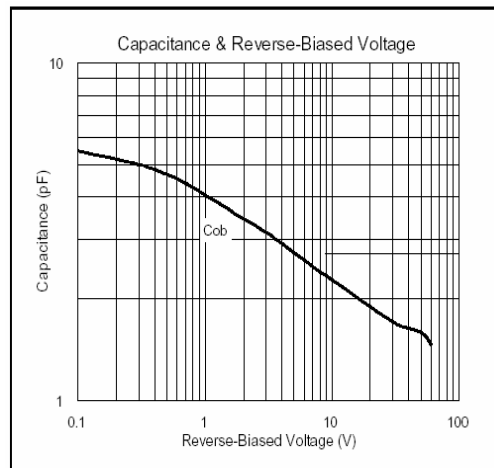
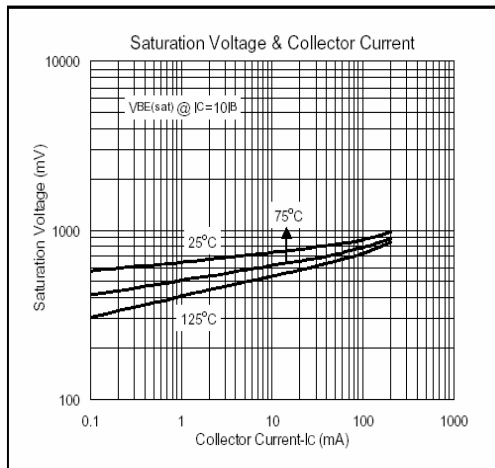
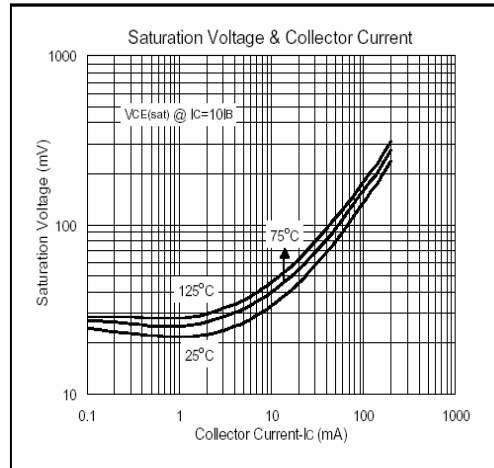
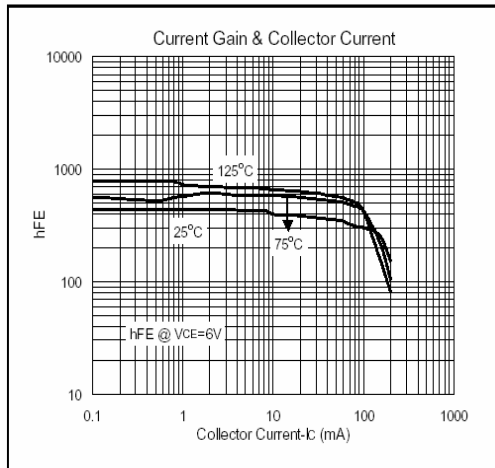
| Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|-----------------|------|------|------|------|--|
| BV_{CBO} | 60 | - | - | V | $I_C=100\mu\text{A}, I_E=0$ |
| BV_{CEO} | 50 | - | - | V | $I_C=1\text{mA}, I_B=0$ |
| BV_{EBO} | 5 | - | - | V | $I_E=10\mu\text{A}, I_C=0$ |
| I_{CBO} | - | - | 100 | nA | $V_{CB}=60\text{V}, I_E=0$ |
| I_{EBO} | - | - | 100 | nA | $V_{EB}=5\text{V}, I_C=0$ |
| * $V_{CE(sat)}$ | - | - | 250 | mV | $I_C=100\text{mA}, I_B=10\text{mA}$ |
| * $V_{BE(sat)}$ | - | - | 1 | V | $I_C=100\text{mA}, I_B=10\text{mA}$ |
| * h_{FE1} | 70 | - | 700 | | $V_{CE}=6\text{V}, I_C=2\text{mA}$ |
| * h_{FE2} | 25 | - | - | | $V_{CE}=6\text{V}, I_C=150\text{mA}$ |
| fT | 80 | - | - | MHz | $V_{CE}=10\text{V}, I_C=1\text{mA}, f=100\text{MHz}$ |
| Cob | - | - | 3.5 | pF | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$ |

* Pulse Test: Pulse Width $\leq 380\mu\text{s}$, Duty Cycle $\leq 2\%$

Classification Of h_{FE1}

| Rank | LO | LY | LG | LB |
|-------|----------|-----------|-----------|-----------|
| Range | 70 - 140 | 120 - 240 | 200 - 400 | 350 - 700 |

Characteristics Curve



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