



| Parameter | Tr1 and Tr2 |
|-----------|-------------|
| V_{CEO} | 50V |
| I_C | 100mA |

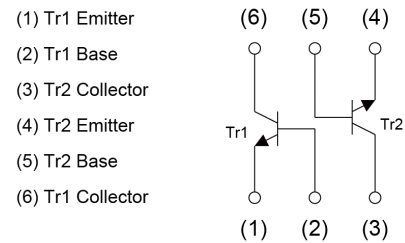
●Outline

| | |
|---|--|
| VMT6  VT6X2 | EMT6  EMX52 (SC-107C) |
|---|--|

●Features

- 1) General Purpose.
- 2) Two 2SCR523 chips in one package.
- 3) Transistor elements are independent, eliminating interface.
- 4) Mounting cost and area can be cut in half.
- 5) Lead Free/RoHS Compliant.

●Inner circuit



●Application

Switching, LED driver

●Packaging specifications

| Part No. | Package | Package size | Taping code | Reel size (mm) | Tape width (mm) | Basic ordering unit.(pcs) | Marking |
|----------|---------|--------------|-------------|----------------|-----------------|---------------------------|---------|
| VT6X2 | VMT6 | 1212 | T2R | 180 | 8 | 8000 | X2 |
| EMX52 | EMT6 | 1616 | T2R | 180 | 8 | 8000 | X52 |

● **Absolute maximum ratings** ($T_a = 25^\circ\text{C}$)

<For Tr1 and Tr2 in common>

| Parameter | | Symbol | Values | Unit |
|------------------------------|-------|-----------------------|-------------|------------------|
| Collector-base voltage | | V_{CBO} | 50 | V |
| Collector-emitter voltage | | V_{CEO} | 50 | V |
| Emitter-base voltage | | V_{EBO} | 5 | V |
| Collector current | | I_{C} | 100 | mA |
| | | I_{CP}^{*1} | 200 | mA |
| Power dissipation | VT6X2 | P_{D}^{*2*3} | 150 | mW |
| | EMX52 | | 150 | |
| Junction temperature | | T_{j} | 150 | $^\circ\text{C}$ |
| Range of storage temperature | | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

● **Electrical characteristics** ($T_a = 25^\circ\text{C}$)

<For Tr1 and Tr2 in common>

| Parameter | Symbol | Conditions | Values | | | Unit |
|--------------------------------------|----------------------|--|--------|------|------|---------------|
| | | | Min. | Typ. | Max. | |
| Collector-base breakdown voltage | BV_{CBO} | $I_{\text{C}} = 50\mu\text{A}$ | 50 | - | - | V |
| Collector-emitter breakdown voltage | BV_{CEO} | $I_{\text{C}} = 1\text{mA}$ | 50 | - | - | V |
| Emitter-base breakdown voltage | BV_{EBO} | $I_{\text{E}} = 50\mu\text{A}$ | 5 | - | - | V |
| Collector cut-off current | I_{CBO} | $V_{\text{CB}} = 50\text{V}$ | - | - | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{\text{EB}} = 5\text{V}$ | - | - | 0.1 | μA |
| Collector-emitter saturation voltage | $V_{\text{CE(sat)}}$ | $I_{\text{C}} = 50\text{mA}, I_{\text{B}} = 5\text{mA}$ | - | 0.10 | 0.30 | V |
| DC current gain | h_{FE} | $V_{\text{CE}} = 6\text{V}, I_{\text{C}} = 1\text{mA}$ | 120 | - | 560 | - |
| Transition frequency | f_{T} | $V_{\text{CE}} = 10\text{V}, I_{\text{E}} = -10\text{mA}, f = 100\text{MHz}$ | - | 350 | - | MHz |
| Output capacitance | C_{ob} | $V_{\text{CB}} = 10\text{V}, I_{\text{E}} = 0\text{A}, f = 1\text{MHz}$ | - | 1.6 | - | pF |

*1 $P_w=1\text{ms}$ Single Pulse

*2 Each terminal mounted on a reference footprint

*3 120mW per element must not be exceeded.

● Electrical characteristic curves (Ta=25°C)
 <For Tr1 and Tr2 in common>

Fig.1 Grounded Emitter Propagation Characteristics

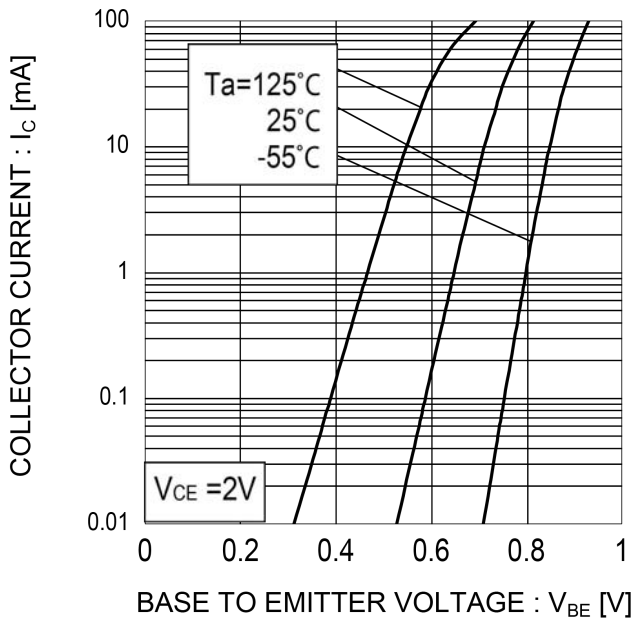


Fig.2 Typical Output Characteristics

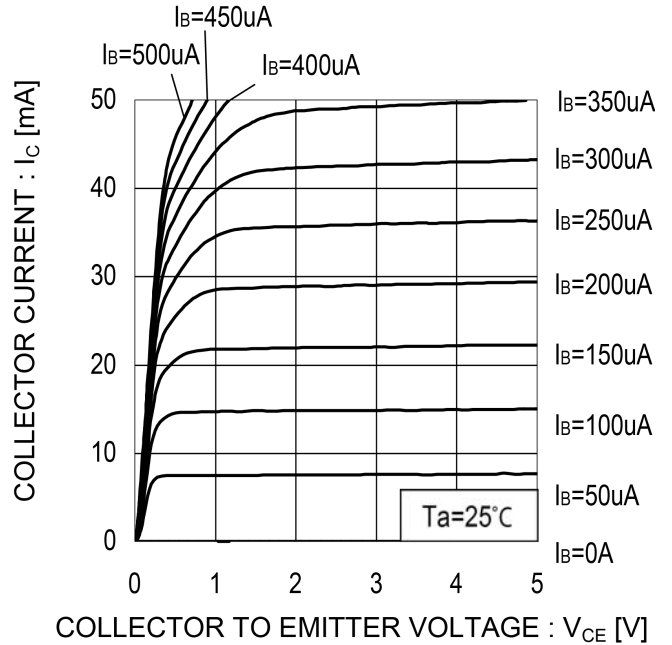


Fig.3 DC Current Gain vs. Collector Current(I)

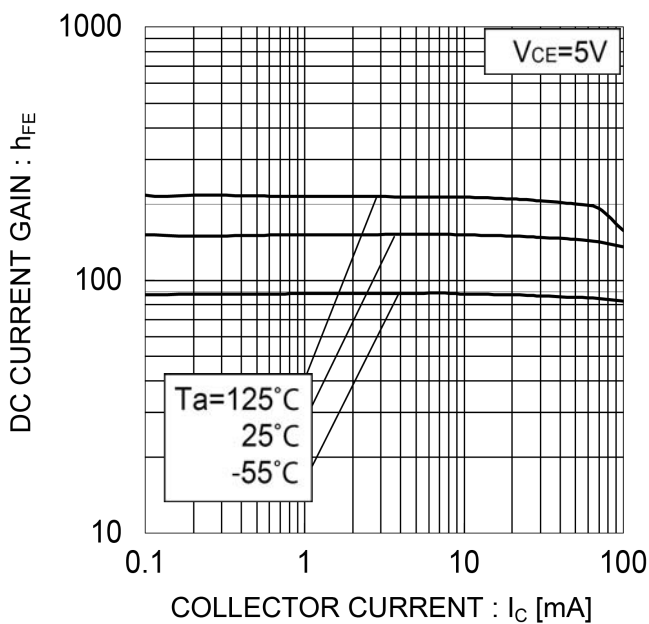
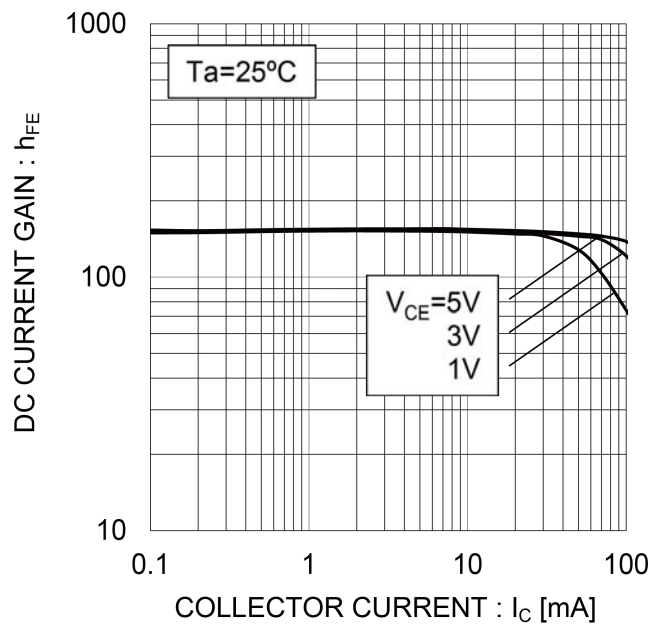


Fig.4 DC Current Gain vs. Collector Current(II)



● **Electrical characteristic curves** ($T_a=25^\circ\text{C}$)

<For Tr1 and Tr2 in common>

Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current(I)

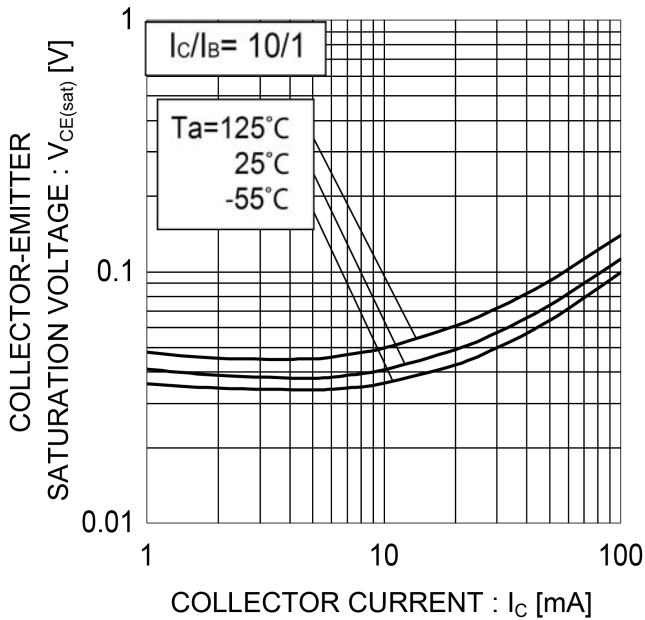


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current(II)

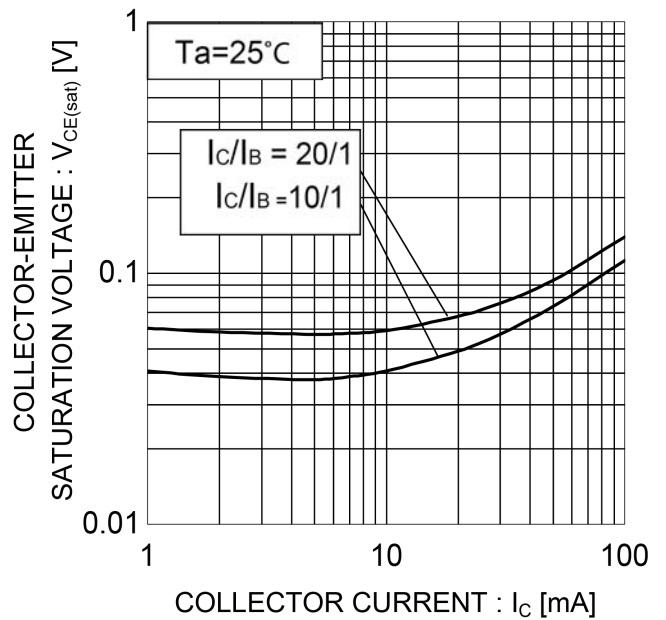


Fig.7 Base-Emitter Saturation Voltage vs. Collector Current

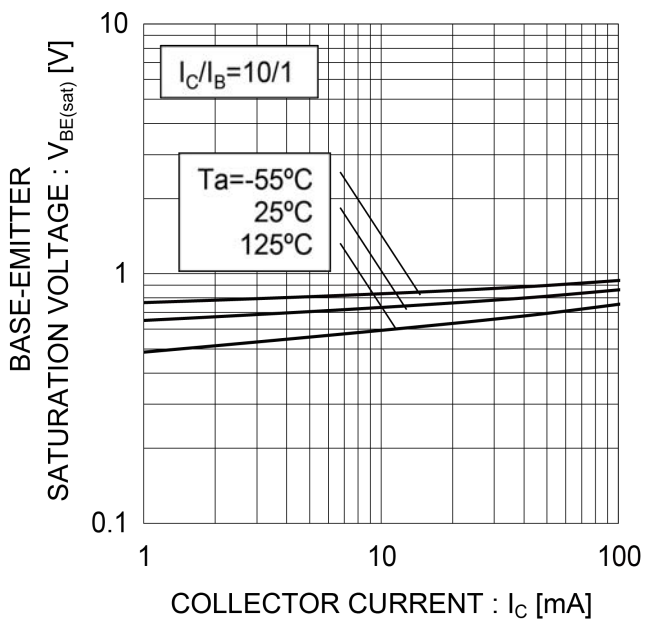
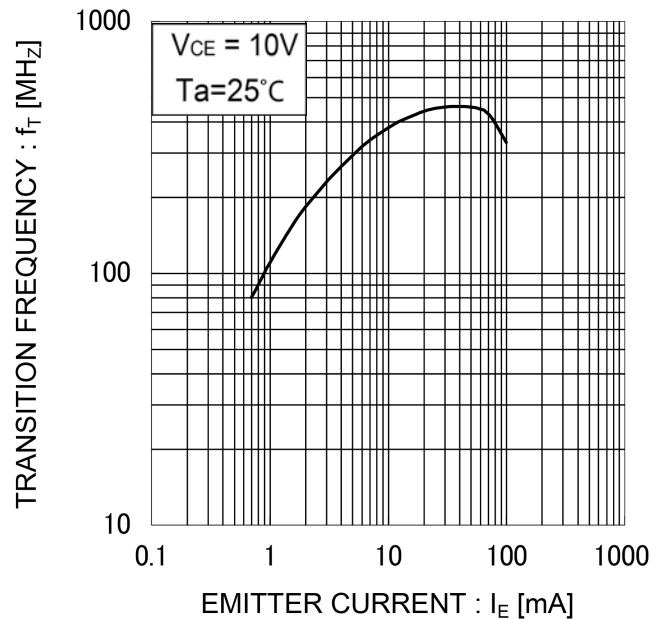


Fig.8 Gain Bandwidth Product vs. Emitter Current



● **Electrical characteristic curves** ($T_a = 25^\circ\text{C}$)

<For Tr1 and Tr2 in common>

Fig.9 Emitter input capacitance vs. Emitter-Base Voltage Collector output capacitance vs. Emitter-Base Voltage

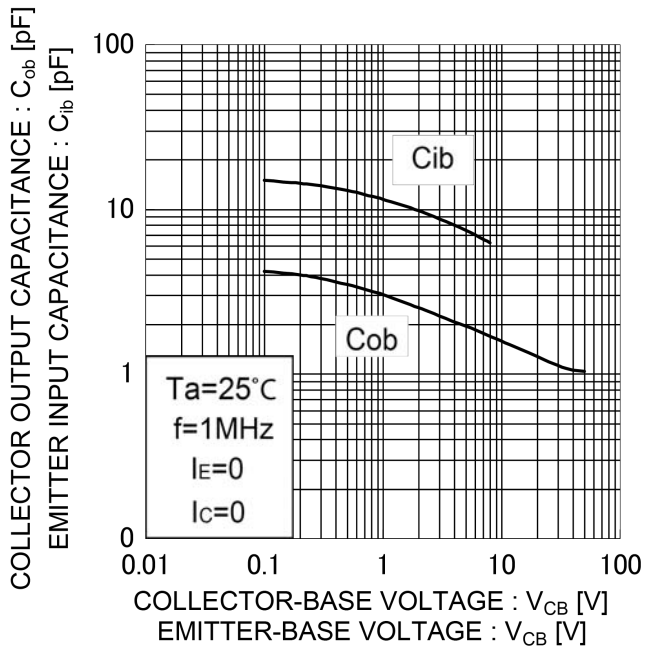
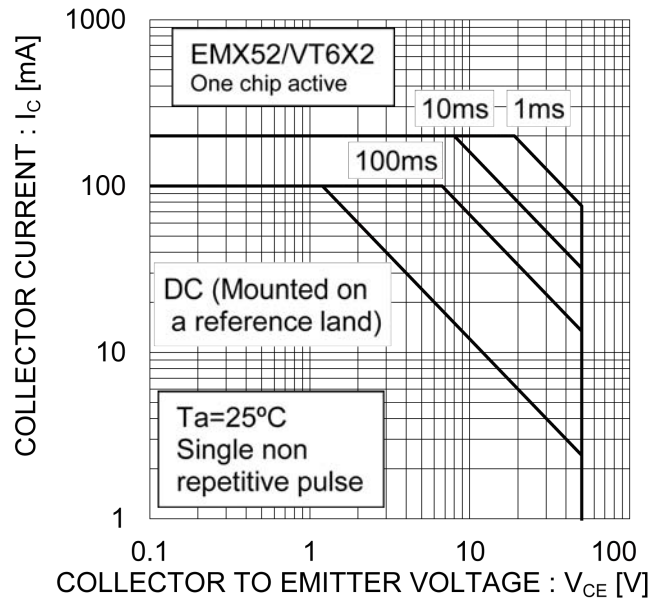
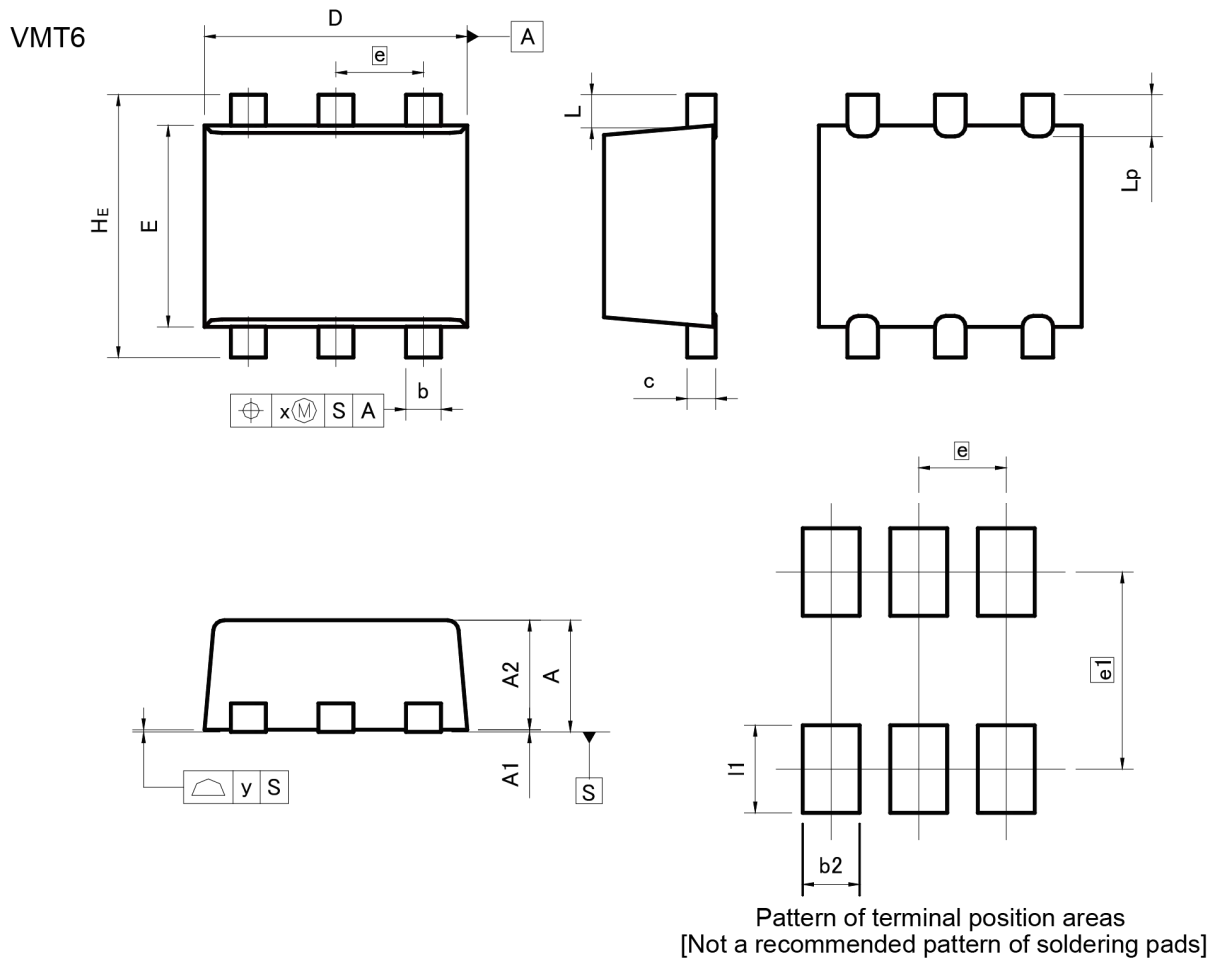


Fig.10 Safe Operating Area



●Dimensions

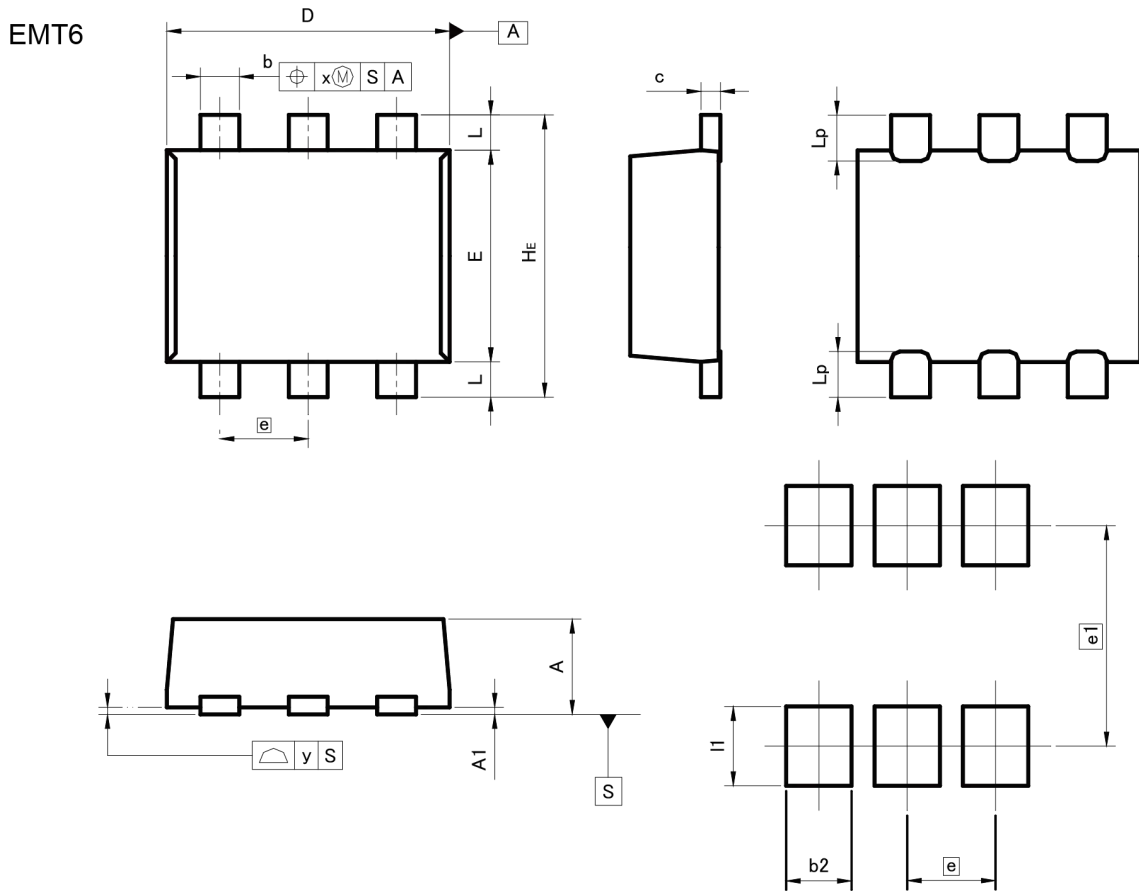


| DIM | MILIMETERS | | INCHES | |
|-----|------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.42 | 0.62 | 0.017 | 0.024 |
| A1 | 0.00 | 0.05 | 0.000 | 0.002 |
| A2 | 0.40 | 0.60 | 0.016 | 0.024 |
| b | 0.11 | 0.21 | 0.004 | 0.008 |
| c | 0.08 | 0.18 | 0.003 | 0.007 |
| D | 1.10 | 1.30 | 0.043 | 0.051 |
| E | 0.82 | 1.02 | 0.032 | 0.04 |
| e | 0.40 | | 0.016 | |
| HE | 1.10 | 1.30 | 0.043 | 0.051 |
| L | 0.14 | | 0.006 | |
| Lp | 0.10 | 0.30 | 0.004 | 0.012 |
| x | - | 0.05 | - | 0.002 |
| y | - | 0.10 | - | 0.004 |

| DIM | MILIMETERS | | INCHES | |
|-----|------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| b2 | - | 0.26 | - | 0.010 |
| e1 | 0.90 | | 0.035 | |
| l1 | - | 0.40 | - | 0.016 |

Dimension in mm/inches

●Dimensions



Pattern of terminal position areas
[Not a recommended pattern of soldering pads]

| DIM | MILIMETERS | | INCHES | |
|-----|------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.45 | 0.55 | 0.018 | 0.022 |
| A1 | 0.00 | 0.10 | 0.000 | 0.004 |
| b | 0.17 | 0.27 | 0.007 | 0.011 |
| c | 0.08 | 0.18 | 0.003 | 0.007 |
| D | 1.50 | 1.70 | 0.059 | 0.067 |
| E | 1.10 | 1.30 | 0.043 | 0.051 |
| e | 0.50 | | 0.020 | |
| HE | 1.50 | 1.70 | 0.059 | 0.067 |
| L | 0.10 | 0.30 | 0.004 | 0.012 |
| Lp | - | 0.35 | - | 0.014 |
| x | - | 0.10 | - | 0.004 |
| y | - | 0.10 | - | 0.004 |

| DIM | MILIMETERS | | INCHES | |
|-----|------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| b2 | - | 0.37 | - | 0.015 |
| e1 | 1.25 | | 0.049 | |
| I1 | - | 0.45 | - | 0.018 |

Dimension in mm/inches

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