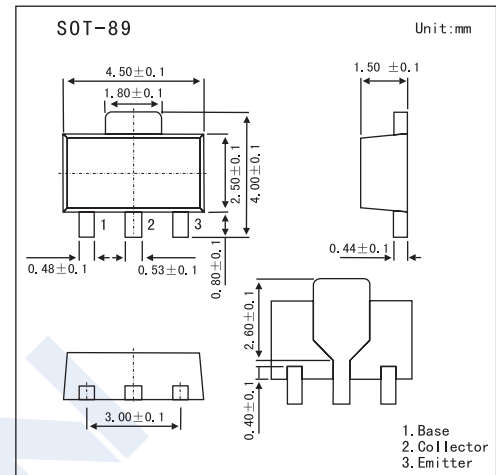


Digital Transistors

HR1A4M

■ Features

- Up to 2A High Current Drives Such As IC Outputs and Actuators Available
- On-chip Bias Resistor
- Low Power Consumption During Drive

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

| Parameter | Symbol | Rating | Unit |
|---------------------------|-------------------|-------------|------------------|
| Collector-Base Voltage | V_{CB0} | -60 | V |
| Collector-Emitter Voltage | V_{CE0} | -60 | V |
| Emitter-Base Voltage | V_{EB0} | -10 | V |
| Collector Current (DC) | $I_{C(DC)}$ | -1.0 | A |
| Collector Current (Pulse) | $I_{C(pulse)} *1$ | -2.0 | A |
| Base Current (DC) | $I_{B(DC)}$ | -0.02 | A |
| Total Power Dissipation | $P_T *2$ | 2.0 | W |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

*1 $PW \leq 10\text{ms}$, Duty Cycle $\leq 50\%$

*2 When $0.7\text{mm} \times 16\text{cm}^2$ ceramic board is used.

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

| Parameter | Symbol | Testconditions | Min | Typ | Max | Unit |
|---------------------------|------------|--|-----|-----|------|------------------|
| Collector Cut-off Current | I_{CBO} | $V_{CB} = -60\text{V}$, $I_E = 0$ | | | -100 | nA |
| DC Current Gain | $h_{FE} *$ | $V_{CE} = -2.0\text{V}$, $I_C = -0.1\text{A}$ | 150 | | | |
| | | $V_{CE} = -2.0\text{V}$, $I_C = -0.5\text{A}$ | 100 | | | |
| | | $V_{CE} = -2.0\text{V}$, $I_C = -1.0\text{A}$ | 50 | | | |
| Low Level Output Voltage | $V_{OL} *$ | $V_{IN} = -5.0\text{V}$, $I_C = -0.1\text{A}$ | | | -0.2 | V |
| Low Level Input Voltage | $V_{IL} *$ | $V_{CE} = -5.0\text{V}$, $I_C = -100 \mu\text{A}$ | | | -0.3 | V |
| Input Resistance | R_1 | | 7 | 10 | 13 | $\text{k}\Omega$ |
| Emitter-Base Resistance | R_2 | | 7 | 10 | 13 | $\text{k}\Omega$ |

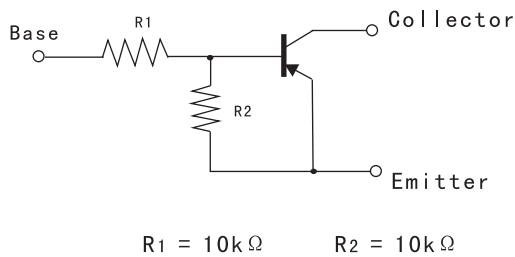
* $PW \leq 350 \mu\text{s}$, Duty Cycle $\leq 2\%$

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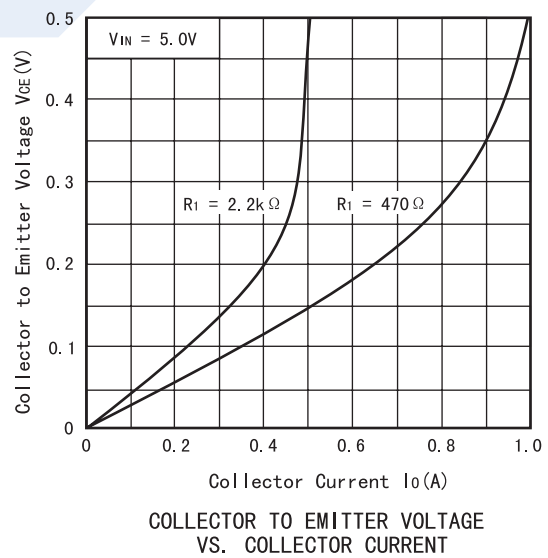
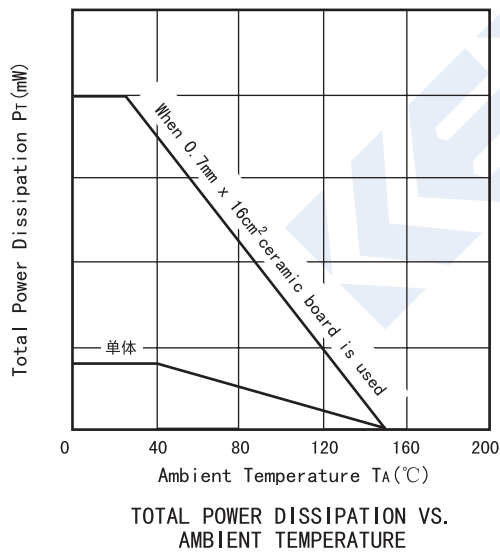
■ Marking

| | |
|---------|----|
| Marking | MS |
|---------|----|

■ Equivalent Circuit



■ Electrical Characteristics Curves



HR1A4M

