

SILICON TRANSISTOR ARRAY

μ PA1437

PNP SILICON POWER TRANSISTOR ARRAY

LOW SPEED SWITCHING USE (DARLINGTON TRANSISTOR)

INDUSTRIAL USE

DESCRIPTION

The μ PA1437 is PNP silicon epitaxial Darlington Power Transistor Array that built in 4 circuits designed for driving solenoid, relay, lamp and so on.

FEATURES

- Easy mount by 0.1 inch of terminal interval.
- High h_{FE} for Darlington Transistor.

ORDERING INFORMATION

| Part Number | Package | Quality Grade |
|---------------|------------|---------------|
| μ PA1437H | 10 Pin SIP | Standard |

Please refer to "Quality grade on NEC Semiconductor Devices" (Document number IEI-1209) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

ABSOLUTE MAXIMUM RATINGS ($T_a = 25\text{ }^\circ\text{C}$)

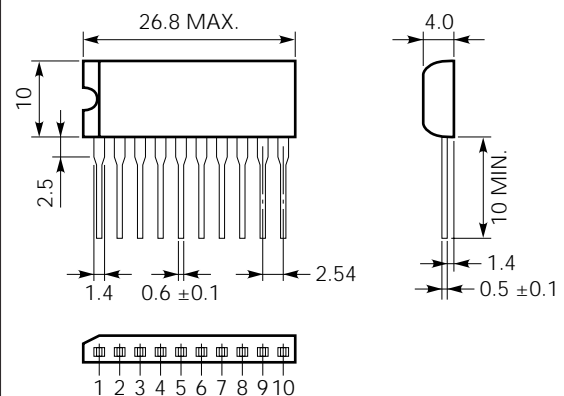
| | | | |
|------------------------------|------------------|-------------|------------------|
| Collector to Base Voltage | V_{CBO} | -100 | V |
| Collector to Emitter Voltage | V_{CEO} | -100 | V |
| Emitter to Base Voltage | V_{EBO} | -7 | V |
| Collector Current (DC) | $I_{C(DC)}$ | ∓ 3 | A/unit |
| Collector Current (pulse) | $I_{C(pulse)^*}$ | ∓ 6 | A/unit |
| Base Current (DC) | $I_{B(DC)}$ | -0.3 | A/unit |
| Total Power Dissipation | PT_1^{**} | 3.5 | W |
| Total Power Dissipation | PT_2^{***} | 28 | W |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

* $PW \leq 300\ \mu\text{s}$, Duty Cycle $\leq 10\%$

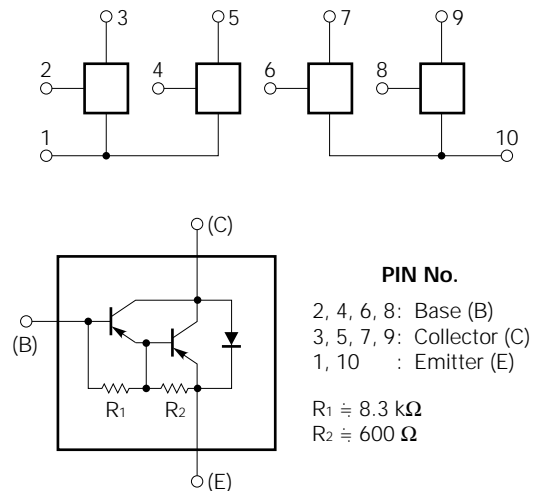
** 4 Circuits, $T_a = 25\text{ }^\circ\text{C}$

*** 4 Circuits, $T_c = 25\text{ }^\circ\text{C}$

PACKAGE DIMENSION (in millimeters)



CONNECTION DIAGRAM



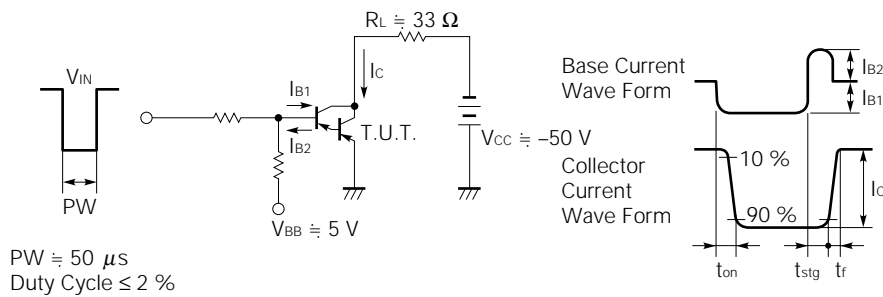
The information in this document is subject to change without notice.

ELECTRICAL CHARACTERISTICS (Ta = 25 °C)

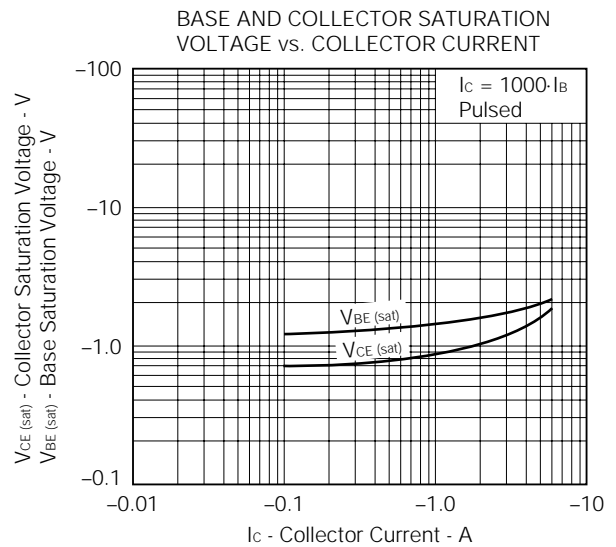
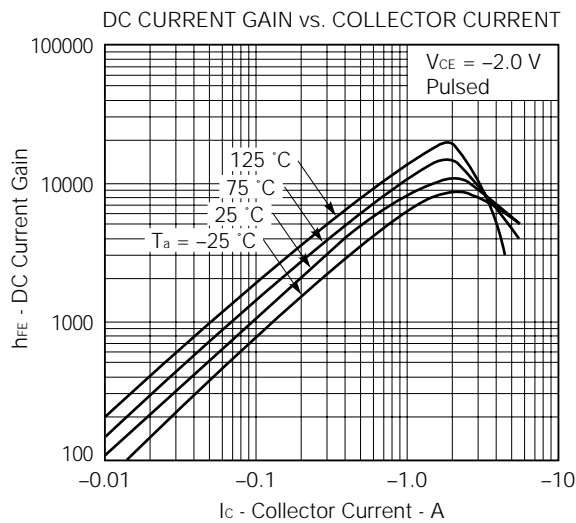
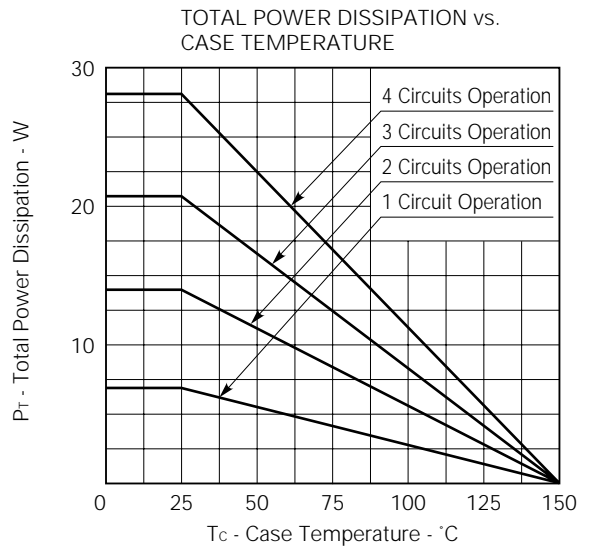
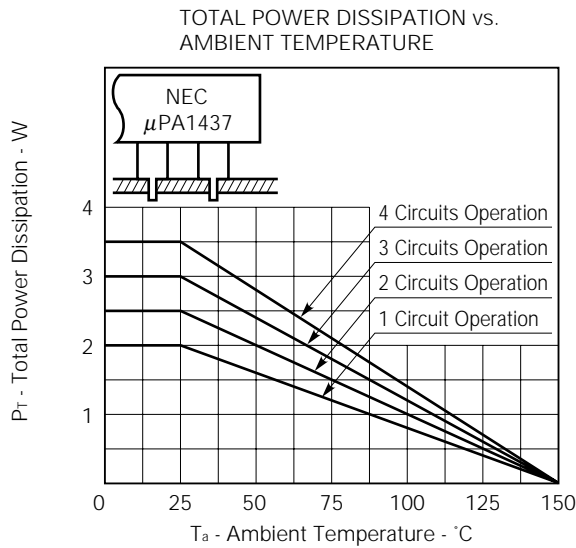
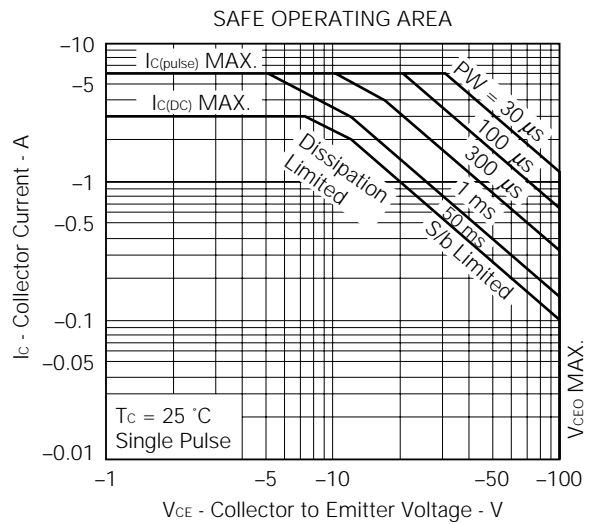
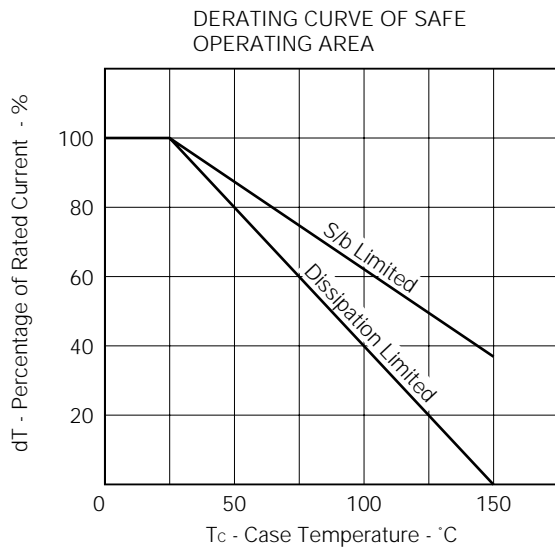
| CHARACTERISTIC | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS |
|---|------------------------|------|------|-------|------|---|
| Collector to Emitter Sustaining Voltage | V _{CE(SUS)} | -100 | | | V | I _C = -1.5 A, I _B = -1.5 mA, L = 1 mH |
| Collector Leakage Current | I _{CBO} | | | -10 | μA | V _{CB} = -100 V, I _E = 0 |
| Emitter Leakage Current | I _{EBO} | | | -1 | mA | V _{EB} = -5 V, I _C = 0 |
| DC Current Gain | h _{FE1} * | 1000 | | | — | V _{CE} = -2 V, I _C = -0.5 A |
| DC Current Gain | h _{FE2} * | 2000 | | 20000 | — | V _{CE} = -2 V, I _C = -1.5 A |
| Collector Saturation Voltage | V _{CE(sat)} * | | -0.9 | -1.2 | V | I _C = -1.5 A, I _B = -1.5 mA |
| Base Saturation Voltage | V _{BE(sat)} * | | -1.5 | -2 | V | I _C = -1.5 A, I _B = -1.5 mA |
| Turn On Time | t _{on} | | 1 | | μs | I _C = -1.5 A |
| Storage Time | t _{stg} | | 3 | | μs | I _{B1} = -I _{B2} = -1.5 mA V _{CC} ≐ 50 V, R _L ≐ 33 Ω |
| Fall Time | t _f | | 1 | | μs | See test circuit |

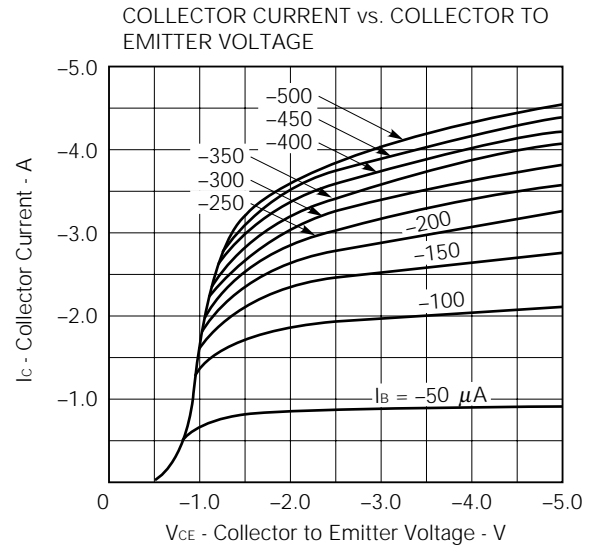
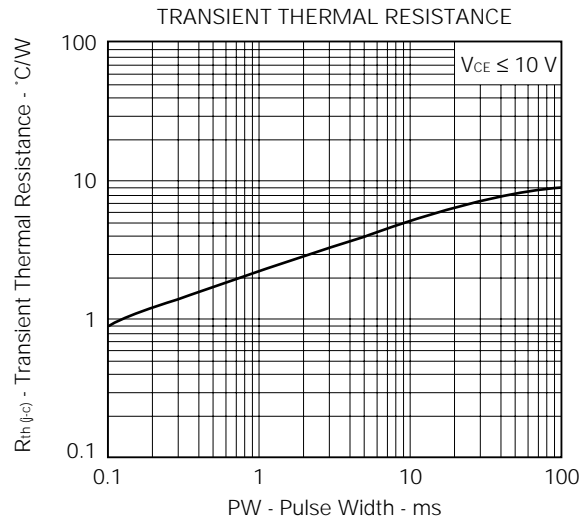
* PW ≤ 350 μs, Duty Cycle ≤ 2 % / pulsed

SWITCHING TIME TEST CIRCUIT



TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)





REFERENCE

| Document Name | Document No. |
|--|--------------|
| NEC semiconductor device reliability/quality control system. | TEI-1202 |
| Quality grade on NEC semiconductor devices. | IEI-1209 |
| Semiconductor device mounting technology manual. | IEI-1207 |
| Semiconductor device package manual. | IEI-1213 |
| Guide to quality assurance for semiconductor devices. | MEI-1202 |
| Semiconductor selection guide. | MF-1134 |

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