

Emitter common (dual digital transistors)

EMA11 / UMA11N / FMA11A

●Features

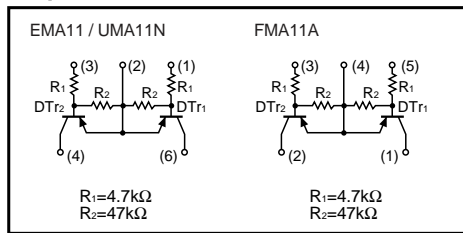
- 1) Two DTA143Z chips in a EMT or UMT or SMT package.
- 2) Mounting cost and area can be cut in half.

●Structure

Epitaxial planar type
 PNP silicon transistor
 (Built-in resistor type)

The following characteristics apply to both DTr₁ and DTr₂.

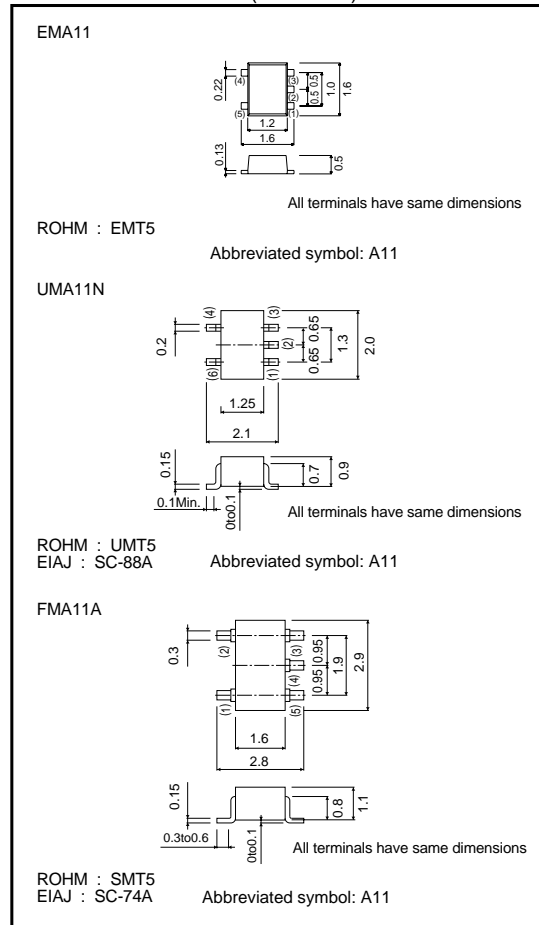
●Equivalent circuit



●Packaging specifications

| Type | Package | Taping | | |
|--------|------------------------------|--------|------|------|
| | Code | T2R | TR | T148 |
| | Basic ordering unit (pieces) | 8000 | 3000 | 3000 |
| EMA11 | | ○ | - | - |
| UMA11N | | - | ○ | - |
| FMA11A | | - | - | ○ |

●External dimensions (Unit : mm)



Transistors

●Absolute maximum ratings (Ta = 25°C)

| Parameter | | Symbol | Limits | Unit | |
|----------------------|----------------|-----------------------|-------------|------|----|
| Supply voltage | | V _{CC} | -50 | V | |
| Input voltage | | V _{IN} | -30 | V | |
| | | | 5 | | |
| Output current | | I _o | -100 | mA | |
| | | I _{C (Max.)} | -100 | | |
| Power dissipation | EMA11 / UMA11N | P _d | 150 (TOTAL) | mW | *1 |
| | FMA11A | | 300 (TOTAL) | | *2 |
| Junction temperature | | T _J | 150 | °C | |
| Storage temperature | | T _{stg} | -55 to +150 | °C | |

*1 120mW per element must not be exceeded.
 *2 200mW per element must not be exceeded.

●Electrical characteristics (Ta = 25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|----------------------|--------------------------------|------|------|------|------|---|
| Input voltage | V _{I (off)} | - | - | -0.5 | V | V _{CC} =-5V, I _o =-100∞A |
| | V _{I (on)} | -1.3 | - | - | | V _O =-0.3V, I _o =-5mA |
| Output voltage | V _{O (on)} | - | -0.1 | -0.3 | V | I _o /I _i =-5mA/-0.25mA |
| Input current | I _i | - | - | -1.8 | mA | V _I =-5V |
| Output current | I _{o (off)} | - | - | -0.5 | ∞A | V _{CC} =-50V, V _I =0V |
| DC current gain | G _I | 80 | - | - | - | V _O =-5V, I _o =-10mA |
| Transition frequency | f _T | - | 250 | - | MHz | V _{CE} =10mA, I _E =-5mA, f=100MHz * |
| Input resistance | R ₁ | 3.29 | 4.7 | 6.11 | kΩ | - |
| Resistance ratio | R ₂ /R ₁ | 8 | 10 | 12 | - | - |

* Transition frequency of the device

●Electrical characteristic curves

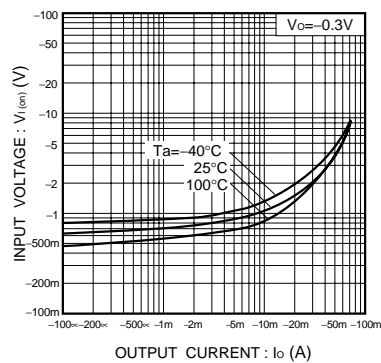


Fig.1 Input voltage vs. output current (ON characteristics)

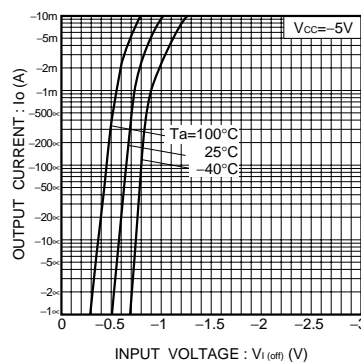


Fig.2 Output current vs. input voltage (OFF characteristics)

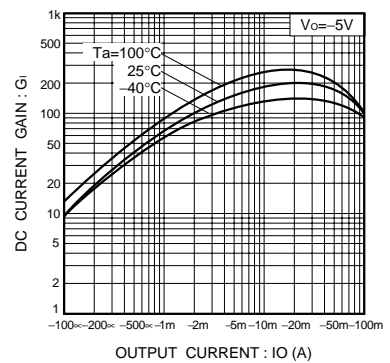


Fig.3 DC current gain vs. output current

Transistors

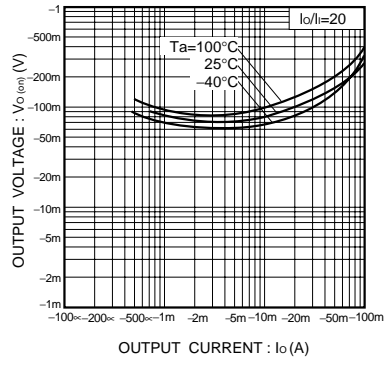


Fig.4 Output voltage vs. output current