



**DESCRIPTION**

The FMMT491 is available in SOT-23 package.

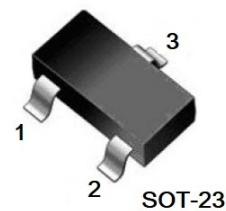
**FEATURES**

- NPN Transistor
- Low Equivalent on-resistance.

**ORDERING INFORMATION**

| Package Type                             | Part Number        |
|--|--------------------|
| SOT-23                                   | FMMT491            |
| Note                                     | SPQ: 3,000pcs/Reel |
| AiT provides all RoHS Compliant Products |                    |

**PIN DESCRIPTION :**



| Pin # | Description |
|-------|-------------|
| 1     | Base        |
| 2     | Emitter     |
| 3     | Collector   |

**ABSOLUTE MAXIMUM RATINGS**

T<sub>A</sub> = 25°C, unless otherwise specified

|  |                 |
|--|-----------------|
| V <sub>CBO</sub> , Collector-Base Voltage      | 40V             |
| V <sub>CEO</sub> , Collector-Emitter Voltage   | 25V             |
| V <sub>EBO</sub> , Emitter-Base Voltage        | 5V              |
| I <sub>C</sub> , Collector Current -Continuous | 1A              |
| P <sub>C</sub> , Collector Power Dissipation   | 0.30W           |
| T <sub>j</sub> , Junction Temperature          | 150°C           |
| T <sub>stg</sub> , Storage Temperature         | -55°C ~ + 150°C |

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.



## ELECTRICAL CHARACTERISTICS

T<sub>A</sub> = 25°C, unless otherwise specified

| Parameter                            | Symbol               | Conditions   | Min. | Typ. | Max. | Unit |
|--------------------------------------|----------------------|--|------|------|------|------|
| Collector-Base Breakdown Voltage     | V <sub>(BR)CBO</sub> | I <sub>C</sub> = 100μA, I <sub>E</sub> =0              | 40   | -    | -    | V    |
| Collector-Emitter Breakdown Voltage  | V <sub>(BR)CEO</sub> | I <sub>C</sub> = 100μA, I <sub>B</sub> =0              | 25   | -    | -    | V    |
| Emitter-Base Breakdown Voltage       | V <sub>(BR)EBO</sub> | I <sub>E</sub> = 100μA, I <sub>C</sub> =0              | 5    | -    | -    | V    |
| Collector Cut-Off Current            | I <sub>CBO</sub>     | V <sub>CB</sub> =40V, I <sub>E</sub> =0                | -    | -    | 0.1  | μA   |
|                                      | I <sub>CEO</sub>     | V <sub>CB</sub> =20V, I <sub>E</sub> =0                | -    | -    | 0.1  | μA   |
| Emitter Cut-Off Current              | I <sub>EBO</sub>     | V <sub>EB</sub> =5V, I <sub>E</sub> =0                 | -    | -    | 0.1  | μA   |
| DC Current Gain                      | h <sub>FE(1)</sub>   | V <sub>CE</sub> =1V, I <sub>C</sub> = 100mA            | 200  | -    | 350  | -    |
|                                      | h <sub>FE(2)</sub>   | V <sub>CE</sub> =1V, I <sub>C</sub> = 800mA            | 40   | -    | -    | -    |
| Collector-Emitter Saturation Voltage | V <sub>CE(sat)</sub> | I <sub>C</sub> =800mA, I <sub>B</sub> = 80mA           | -    | -    | 0.5  | V    |
| Base-Emitter Saturation Voltage      | V <sub>BE(sat)</sub> | I <sub>C</sub> =800mA, I <sub>B</sub> = 80mA           | -    | -    | 1.2  | V    |
| Transition Frequency                 | f <sub>T</sub>       | V <sub>CE</sub> =10V, I <sub>C</sub> = 50mA<br>f=30MHz | 100  | -    | -    | MHz  |

## TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Typical Output Characteristics

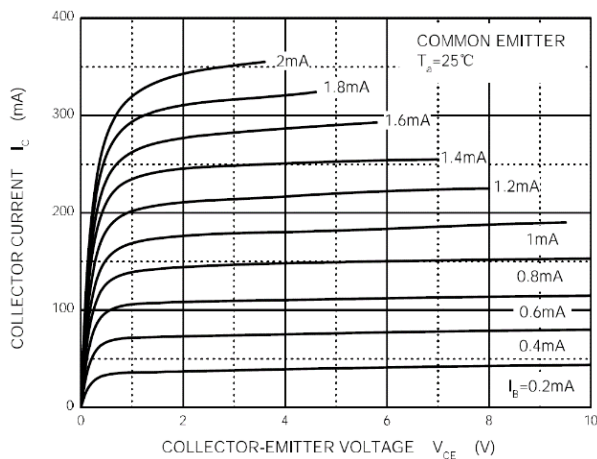
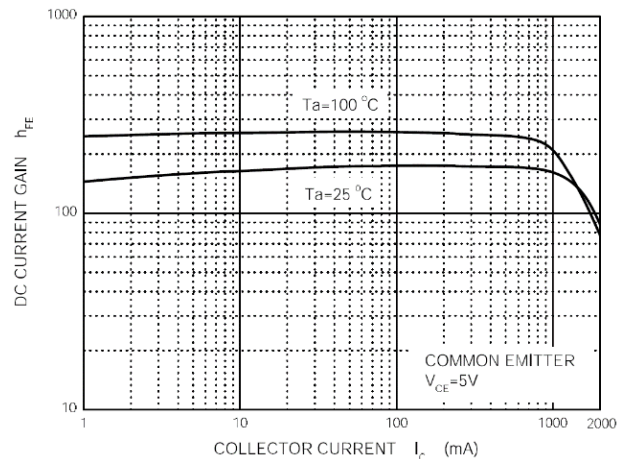
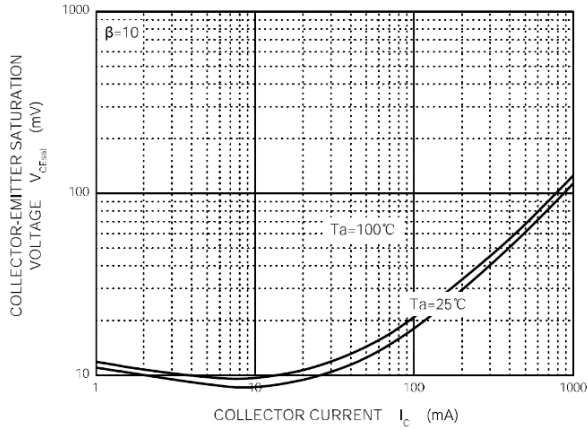


Fig2. DC Current Gain vs. Collector Current

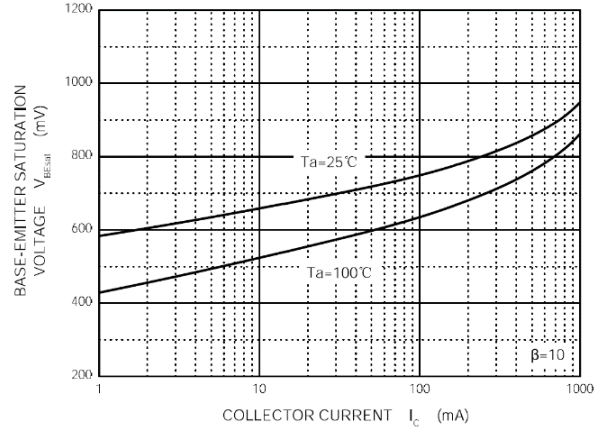




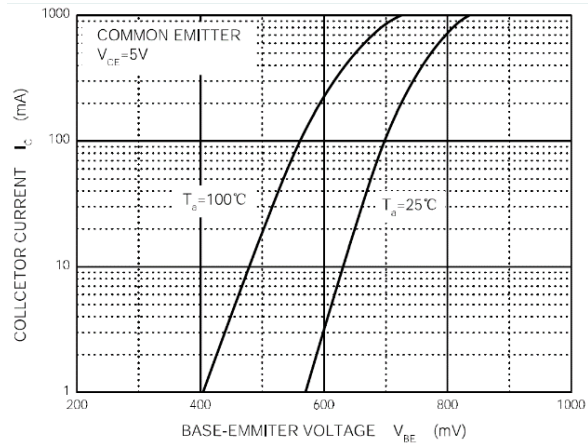
**Fig 3. Collector-Emitter Saturation Voltage vs. Collector Current**



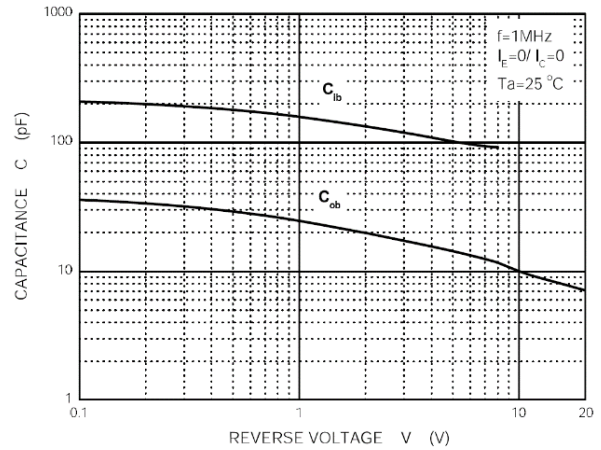
**Fig 4. Base-Emitter Saturation Voltage vs. Collector Current**



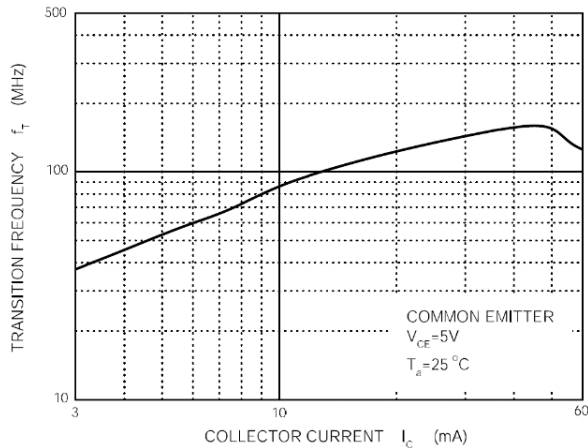
**Fig 5. Ground Emitter Propagation Characteristics**



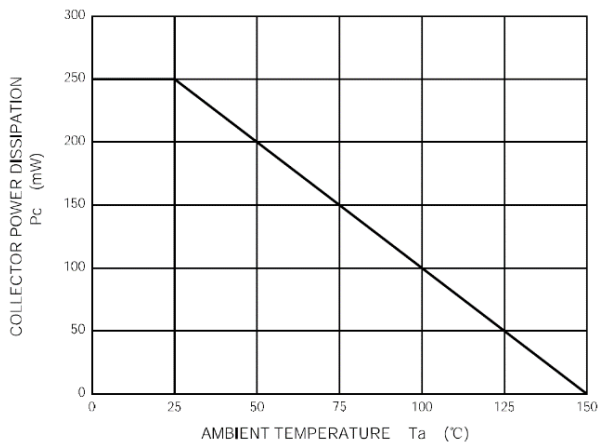
**Fig 6. Capacitance vs. Reverse Voltage**



**Fig 7. Gain Bandwidth Product vs. Collector Current**



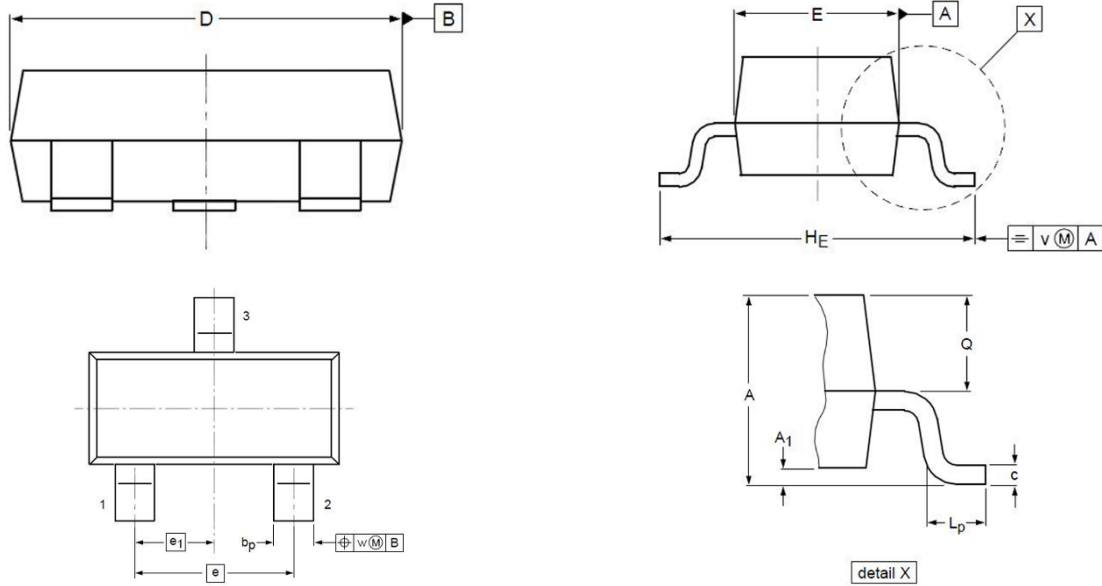
**Fig 8. Collector Power Dissipation vs. Ambient Temperature**





**PACKAGE INFORMATION**

Dimension in SOT-23 Package



| Symbol | Millimeters (mm) |       |
|--------|------------------|-------|
|        | Min.             | Max.  |
| A      | 0.900            | 1.150 |
| A1     | 0.010            | 0.100 |
| $b_p$  | 0.300            | 0.500 |
| c      | 0.800            | 0.150 |
| D      | 2.800            | 3.000 |
| E      | 1.200            | 1.400 |
| e      | 1.900 TYP.       |       |
| $e_1$  | 0.950 TYP.       |       |
| $H_E$  | 2.250            | 2.550 |
| $L_p$  | 0.300            | 0.500 |
| Q      | 0.450            | 0.550 |
| v      | 0.200 TYP.       |       |
| w      | 0.100 TYP.       |       |



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