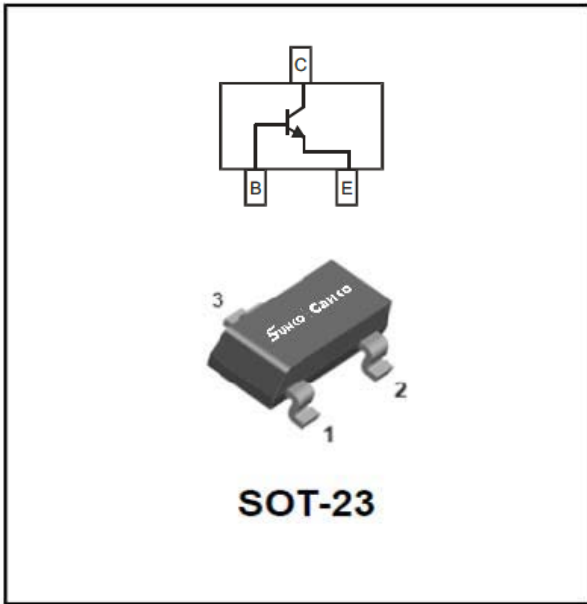


# PMMT491A

## NPN Transistor



### Features

- Epoxy meets UL-94 V-0 flammability rating
- Halogen free available upon request by adding suffix "HF"
- Moisture Sensitivity Level 1
- High Conductance
- Surface mount package ideally Suited for Automatic Insertion

### Mechanical Data

- **Package:** SOT-23
- Molding compound meets UL 94 V-0 flammability rating, -compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** 9A

### ■ Maximum Ratings (Ta=25°C unless otherwise noted)

| Item                        | Symbol    | Unit | Value       |
|-----------------------------|-----------|------|-------------|
| Collector-Base Voltage      | $V_{CBO}$ | V    | 40          |
| Collector-Emitter Voltage   | $V_{CEO}$ | V    | 40          |
| Emitter-Base Voltage        | $V_{EBO}$ | V    | 5           |
| Collector Current           | $I_c$     | A    | 1           |
| Collector Power Dissipation | $P_c$     | mW   | 300         |
| Junction Temperature        | $T_j$     | °C   | 150         |
| Storage Temperature         | $T_{stg}$ | °C   | -55 to +150 |

### ■ Ordering Information (Example)

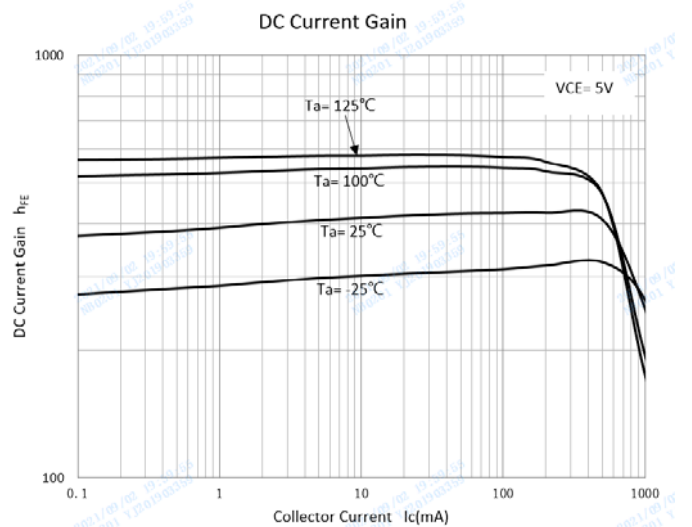
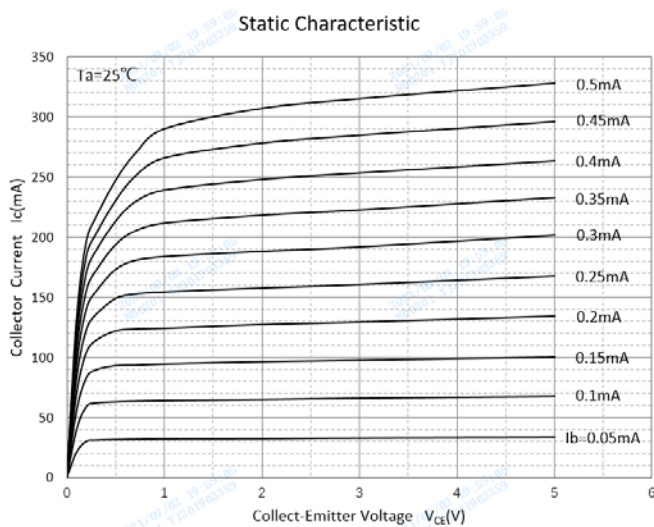
| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g)    | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| PMMT491A      | F2           | Approximate 0.008 | 3000                 | 30000                   | 120000                     | 7" reel       |

# PMMT491A

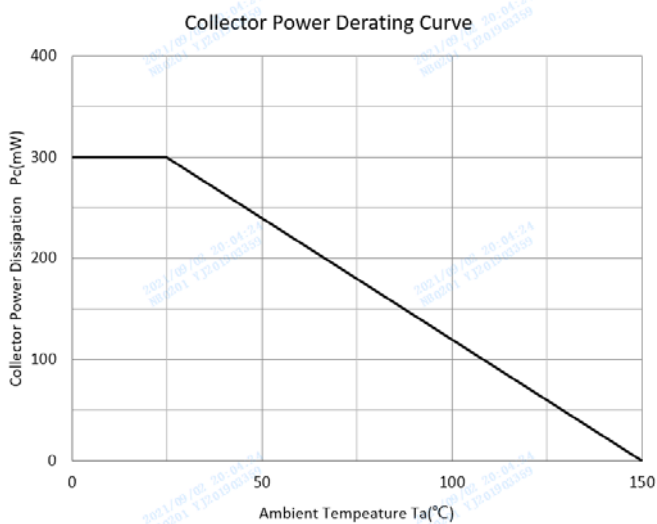
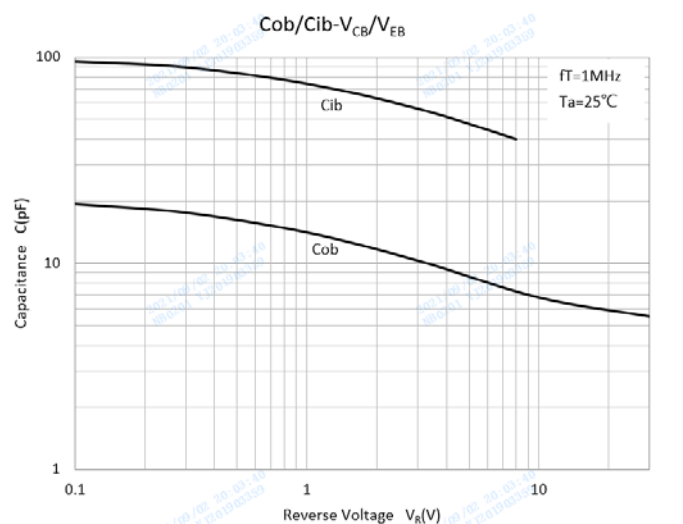
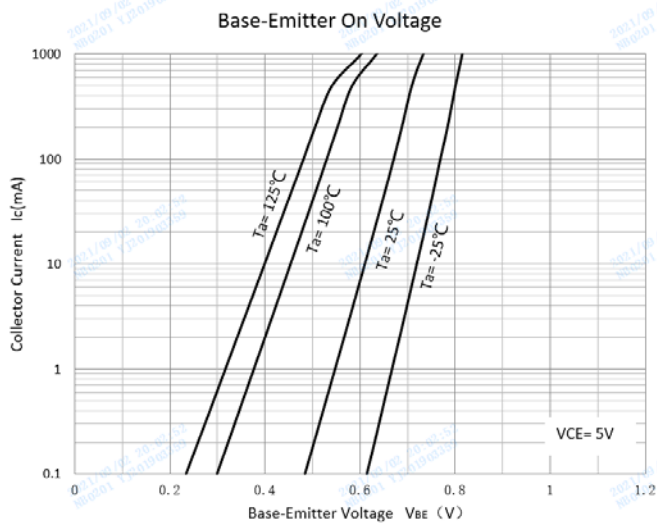
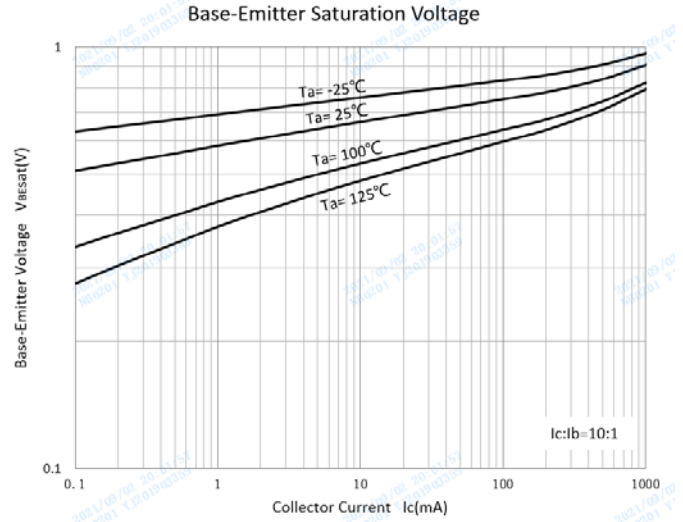
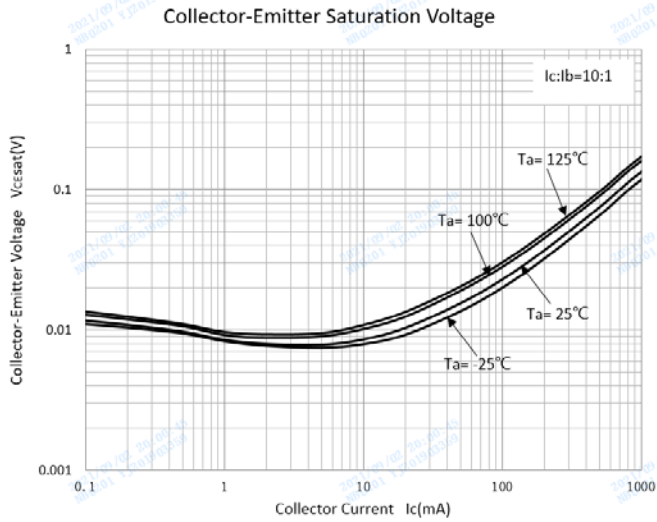
## ■ Electrical Characteristics (Ta=25°C unless otherwise noted)

| Item                                 | Symbol        | Unit | Conditions                       | Min | Typ | Max |
|--------------------------------------|---------------|------|----------------------------------|-----|-----|-----|
| Collector-base breakdown voltage     | $V_{CBO}$     | V    | $I_C=10\mu A, I_E=0$             | 40  |     |     |
| Collector-emitter breakdown voltage  | $V_{CEO^*}$   | V    | $I_C=1mA, I_B=0$                 | 40  |     |     |
| Emitter-base breakdown voltage       | $V_{EBO}$     | V    | $I_E=10\mu A, I_C=0$             | 5   |     |     |
| Collector-emitter cut-off current    | $I_{CEO}$     | nA   | $V_{CE}=30V, I_B=0$              |     |     | 100 |
| Collector-base cut-off current       | $I_{CBO}$     | nA   | $V_{CB}=30V, I_E=0$              |     |     | 100 |
| Emitter-base cut-off current         | $I_{EBO}$     | nA   | $V_{EB}=5V, I_C=0$               |     |     | 100 |
| DC current gain                      | $h_{FE}$      |      | $V_{CE}=5V, I_C=1mA$             | 300 |     |     |
|                                      | $h_{FE}$      |      | $V_{CE}=5V, I_C=500mA$           | 300 |     | 900 |
|                                      | $h_{FE}$      |      | $V_{CE}=5V, I_C=1A$              | 200 |     |     |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | V    | $I_C=100mA, I_B=1mA$             |     |     | 0.2 |
|                                      | $V_{CE(sat)}$ | V    | $I_C=500mA, I_B=50mA$            |     |     | 0.3 |
|                                      | $V_{CE(sat)}$ | V    | $I_C=1A, I_B=100mA$              |     |     | 0.5 |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | V    | $I_C=1A, I_B=100mA$              |     |     | 1.2 |
| Base-emitter voltage                 | $V_{BE}$      | V    | $V_{CE}=5V, I_C=1A$              |     |     | 1.1 |
| Collector-base output capacitance    | $C_{ob}$      | pF   | $V_{CB}=10V, f=1MHz$             |     |     | 10  |
| Transition frequency                 | $f_T$         | MHz  | $V_{CE}=10V, I_C=50mA, f=100MHz$ | 150 |     |     |

## ■ Characteristics (Typical)

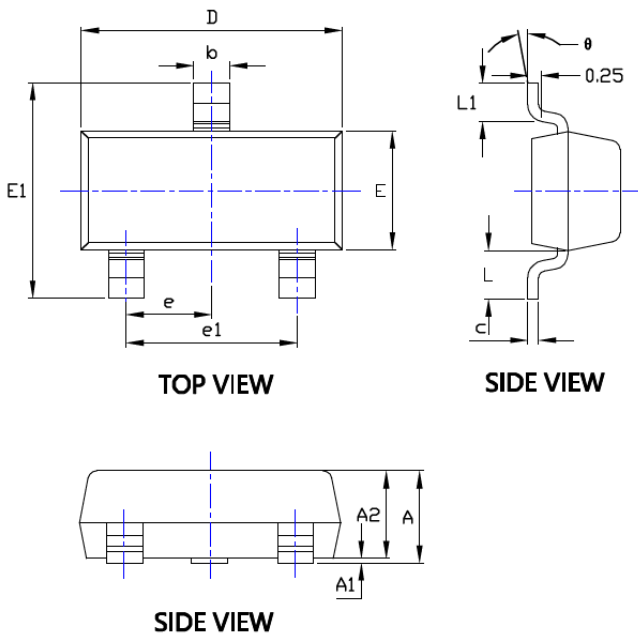


# PMMT491A



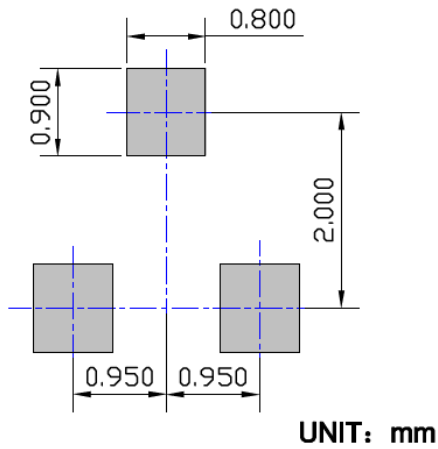
# PMMT491A

## ■SOT-23 Package Outline Dimensions



| SYMBOL   | DIMENSIONS |       |            |       |
|----------|------------|-------|------------|-------|
|          | INCHES     |       | Millimeter |       |
|          | MIN.       | MAX.  | MIN.       | MAX.  |
| A        | 0.035      | 0.045 | 0.900      | 1.150 |
| A1       | 0.000      | 0.004 | 0.000      | 0.100 |
| A2       | 0.035      | 0.041 | 0.900      | 1.050 |
| b        | 0.012      | 0.020 | 0.300      | 0.500 |
| c        | 0.004      | 0.008 | 0.100      | 0.200 |
| D        | 0.110      | 0.118 | 2.800      | 3.000 |
| E        | 0.047      | 0.055 | 1.200      | 1.400 |
| E1       | 0.089      | 0.100 | 2.250      | 2.550 |
| e        | 0.037TYP   |       | 0.950TYP   |       |
| e1       | 0.071      | 0.079 | 1.800      | 2.000 |
| L        | 0.022REF   |       | 0.550REF   |       |
| L1       | 0.012      | 0.020 | 0.300      | 0.500 |
| $\theta$ | 0°         | 8°    | 0°         | 8°    |

## ■SOT-23 Soldering Footprint



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