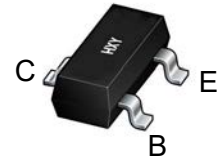




## Features

Extremely low saturation voltage

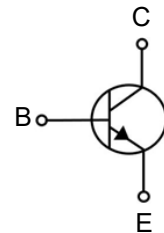
Complementary PNP type : FMMT618



## Package Marking and Ordering Information

| Product ID  | Pack   | Marking | Qty(PCS) |
|-------------|--------|---------|----------|
| HFMMT618QTA | SOT-23 | 618     | 3000     |

SOT-23



## Maxmim Ratings (Ta=25°Cunless otherwise noted)

| Symbol          | Parameter                                        | Value    | Unit |
|-----------------|--------------------------------------------------|----------|------|
| $V_{CBO}$       | Collector-Base Voltage                           | 20       | V    |
| $V_{CEO}$       | Collector-Emitter Voltage                        | 20       | V    |
| $V_{EBO}$       | Emitter-Base Voltage                             | 5        | V    |
| $I_C$           | Collector Current                                | 2.5      | A    |
| $I_B$           | Collector Current                                | 2        | A    |
| $P_C$           | Collector Power Dissipation                      | 350      | mW   |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient      | 500      | °C/W |
| $T_J, T_{stg}$  | Operation Junction And Storage Temperature Range | -55~+150 | °C   |

## Electrcal Charcteristics (Ta=25°Cunless otherwise specified)

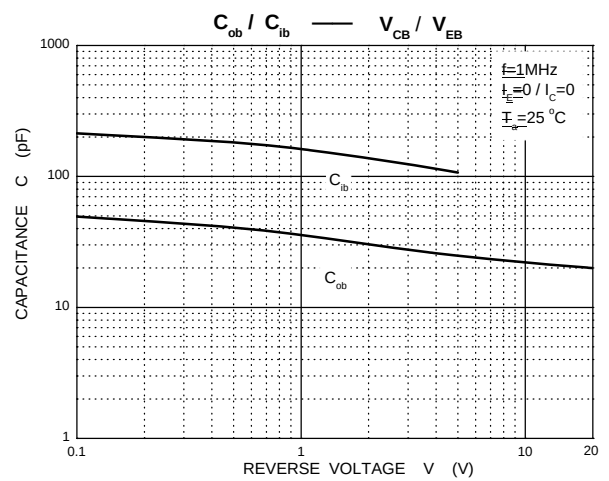
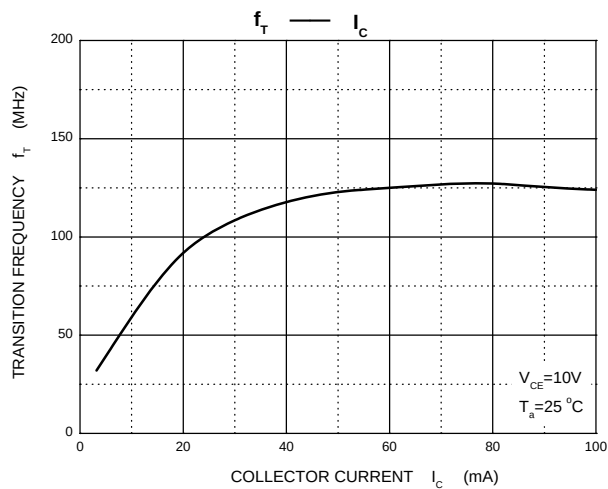
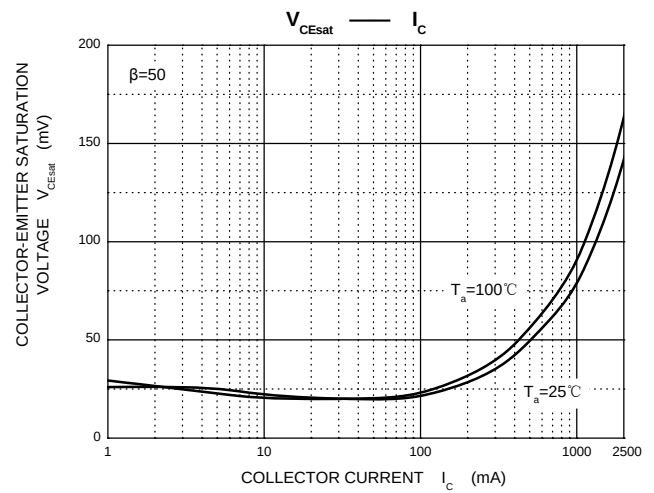
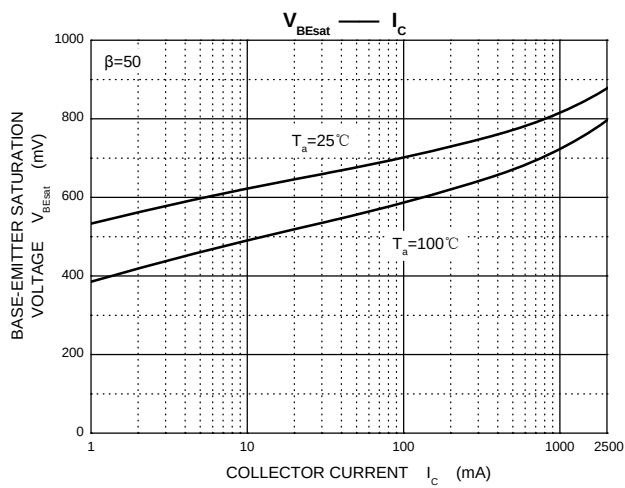
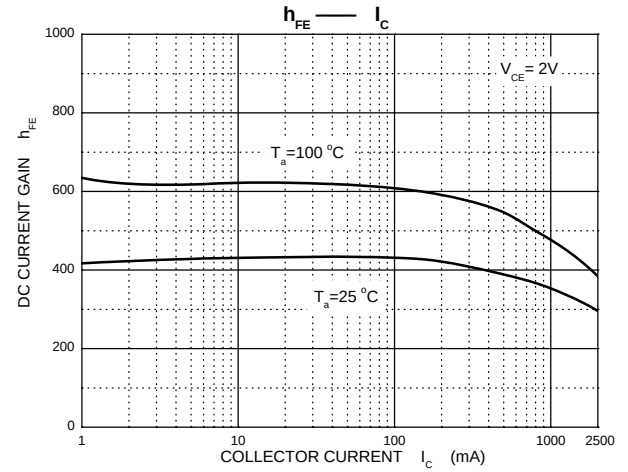
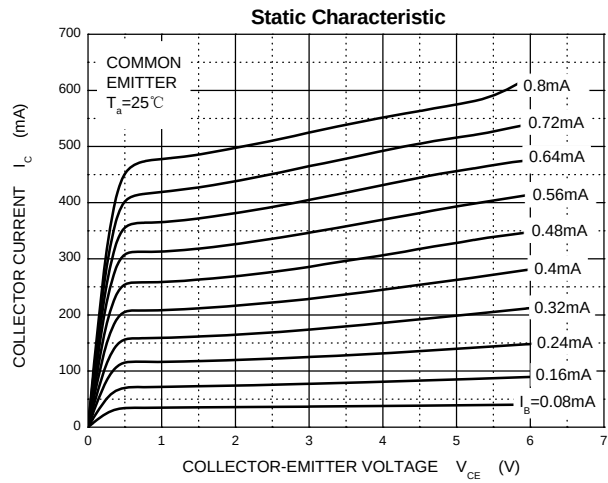
| Parameter                                     | Symbol         | Test conditions                           | Min | Typ | Max | Unit |
|-----------------------------------------------|----------------|-------------------------------------------|-----|-----|-----|------|
| Collector-base breakdown voltage              | $V_{(BR)CBO}$  | $I_C=100\mu A, I_E=0$                     | 20  |     |     | V    |
| Collector-emitter breakdown voltage (note 1)  | $V_{(BR)CEO}$  | $I_C=10mA, I_B=0$                         | 20  |     |     | V    |
| Emitter-base breakdown voltage                | $V_{(BR)EBO}$  | $I_E=100\mu A, I_C=0$                     | 5   |     |     | V    |
| Collector cut-off current                     | $I_{CBO}$      | $V_{CB}=16V, I_E=0$                       |     |     | 100 | nA   |
| Emitter cut-off current                       | $I_{EBO}$      | $V_{EB}=4V, I_C=0$                        |     |     | 100 | nA   |
| DC current gain (note 1)                      | $h_{FE(1)}$    | $V_{CE}=2V, I_C=10mA$                     | 200 |     |     |      |
|                                               | $h_{FE(2)}$    | $V_{CE}=2V, I_C=0.2A$                     | 300 |     |     |      |
|                                               | $h_{FE(3)}$    | $V_{CE}=2V, I_C=2A$                       | 200 |     |     |      |
|                                               | $h_{FE(4)}$    | $V_{CE}=2V, I_C=4A$                       | 100 |     |     |      |
| Collector-emitter saturation voltage (note 1) | $V_{CE(sat)1}$ | $I_C=0.1A, I_B=10mA$                      |     |     | 15  | mV   |
|                                               | $V_{CE(sat)2}$ | $I_C=1A, I_B=10mA$                        |     |     | 150 | mV   |
|                                               | $V_{CE(sat)3}$ | $I_C=2.5A, I_B=50mA$                      |     |     | 200 | mV   |
| Base-emitter saturation voltage (note 1)      | $V_{BE(sat)}$  | $I_C=2.5A, I_B=50mA$                      |     |     | 1   | V    |
| Base-emitter on voltage (note 1)              | $V_{BE(on)}$   | $I_C=2.5A, V_{CE}=2V$                     |     |     | 1   | V    |
| Output capacitance                            | $C_{ob}$       | $V_{CB}=10V, f=1MHz$                      |     |     | 30  | pF   |
| Turn-on time                                  | $t_{(on)}$     | $V_{CC}=10V, I_C=1A, I_{B1}=-I_{B2}=10mA$ |     | 170 |     | ns   |
| Turn-off time                                 | $t_{(off)}$    |                                           |     | 400 |     | ns   |
| Transition frequency                          | $f_T$          | $V_{CE}=10V, I_C=50mA, f=100MHz$          | 100 |     |     | MHz  |

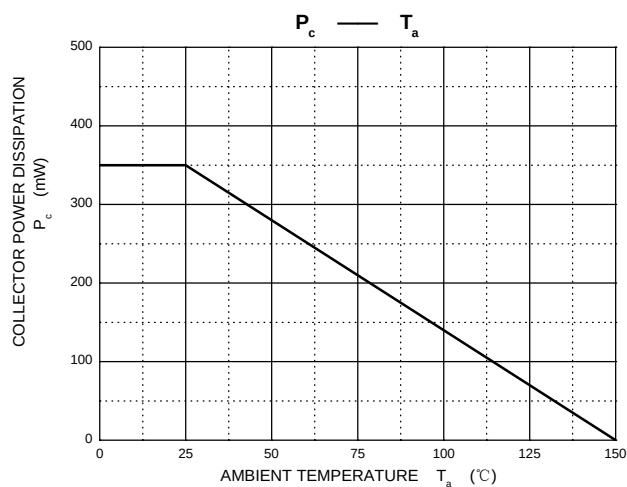
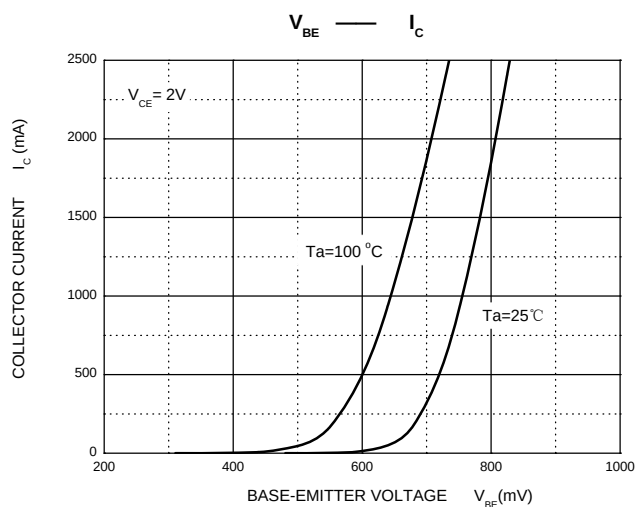
### Notes :

1. Pulse test: Pulse width $\leq 300\mu s$ , duty cycle $\leq 2.0\%$ .

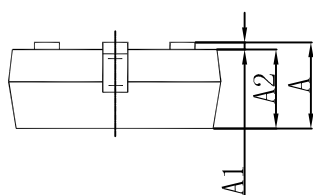
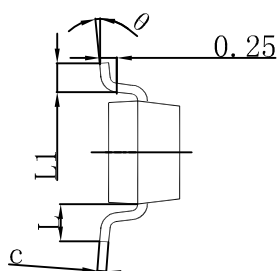
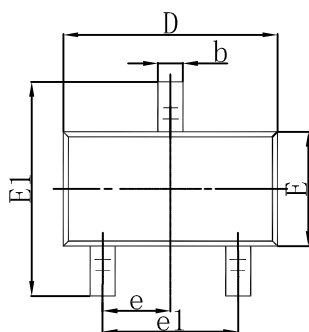


## Typical Characteristics





## SOT-23 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.050 | 0.035                | 0.041 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.800                     | 3.000 | 0.110                | 0.118 |
| E      | 1.200                     | 1.400 | 0.047                | 0.055 |
| E1     | 2.250                     | 2.550 | 0.089                | 0.100 |
| e      | 0.950 TYP                 |       | 0.037 TYP            |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.550 REF                 |       | 0.022 REF            |       |
| L1     | 0.300                     | 0.500 | 0.012                | 0.020 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |



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