# FMMT619

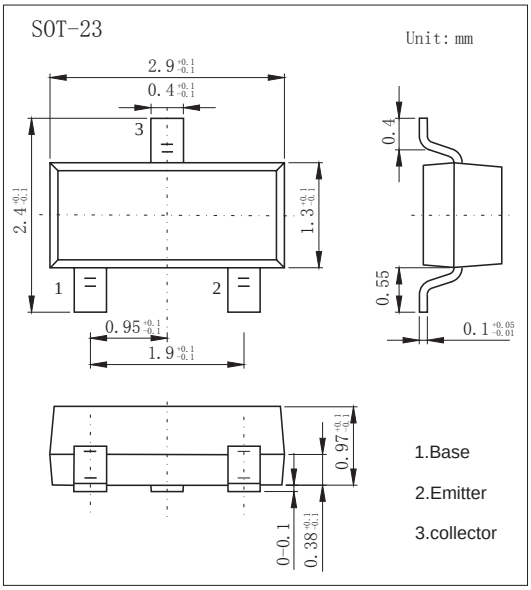
## SOT-23 Plastic-Encapsulate Transistors

### Features

- Collector Current Capability $I_C$=2A
- Collector Emitter Voltage $V_{CEO}$=50V
- Complementary to FMMT720
- NPN Transistors

### MECHANICAL DATA

- Case style:SOT-23molded plastic
- Mounting position:any




## MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Collector - Base Voltage | $V_{CBO}$ | 50 | V |
| Collector - Emitter Voltage | $V_{CEO}$ | 50 | |
| Emitter - Base Voltage | $V_{EBO}$ | 5 | |
| Collector Current - Continuous | $I_C$ | 2 | A |
| Collector Current - Pulse | $I_{CP}$ | 6 | |
| Base Current | $I_B$ | 0.5 | |
| Collector Power Dissipation | $P_C$ | 625 | mW |
| Junction Temperature | $T_J$ | 150 | ℃ |
| Storage Temperature Range | $T_{stg}$ | -55 to 150 | |

**PACKAGE INFORMATION**

| Device | Package | Shipping |
|---|---|---|
| FMMT619 | SOT-23 | 3000/Tape&Reel |

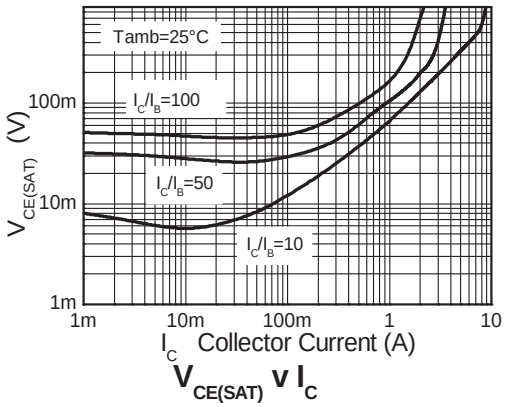
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector- base breakdown voltage | $V_{CBO}$ | $I_C$= 100 μA, $I_E$= 0 | 50 | | | V |
| Collector- emitter breakdown voltage | $V_{CEO}$ | $I_C$= 10 mA, $I_B$= 0 | 50 | | | |
| Emitter - base breakdown voltage | $V_{EBO}$ | $I_E$= 100μA, $I_C$= 0 | 5 | | | |
| Collector-base cut-off current | $I_{CBO}$ | $V_{CB}$= 40 V , $I_E$= 0 | | | 100 | nA |
| Collector- emitter cut-off current | $I_{CES}$ | $V_{CE}$= 40 V , $I_E$= 0 | | | 100 | |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$= 4V , $I_C$=0 | | | 100 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C$=100 mA, $I_B$=10mA | | | 20 | mV |
| | | $I_C$=1A, $I_B$=10mA | | | 200 | |
| | | $I_C$=2A, $I_B$=50mA | | | 220 | |
| Base - emitter saturation voltage | $V_{BE(sat)}$ | $I_C$=2A, $I_B$=50mA | | | 1 | V |
| Base-emitter turn-on voltage | $V_{BE(on)}$ | $V_{CE}$= 2V, $I_C$= 2A | | | 1 | |
| DC current gain | $h_{FE}$ | $V_{CE}$= 2V, $I_C$= 10mA | 200 | | | |
| | | $V_{CE}$= 2V, $I_C$= 200mA | 300 | | | |
| | | $V_{CE}$= 2V, $I_C$= 1A | 200 | | | |
| | | $V_{CE}$= 2V, $I_C$= 2A | 100 | | | |
| | | $V_{CE}$= 2V, $I_C$= 6A | | 40 | | |
| Turn-on time | $t_{on}$ | $V_{CC}$=10V, $I_C$=1A $I_{B1}$=-$I_{B2}$=10mA | | 170 | | ns |
| Turn-off time | $t_{off}$ | | | 750 | | |
| Collector output capacitance | $C_{ob}$ | $V_{CB}$= 10V, f=1MHz | | | 20 | pF |
| Transition frequency | $f_T$ | $V_{CE}$= 10V, $I_C$= 50mA,f=100MHz | 100 | | | MHz |

■ Marking

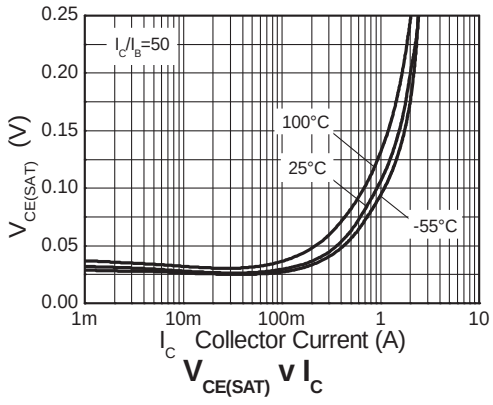
| Marking | 619 |
|---|---|

# RATINGS AND CHARACTERISTIC CURVES

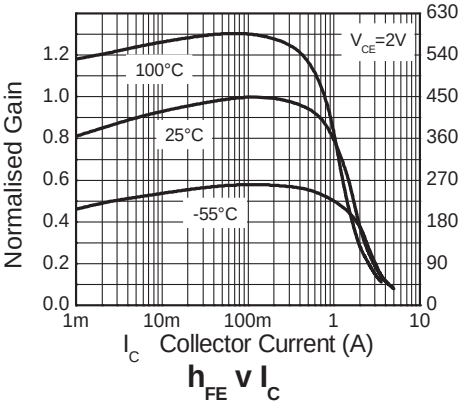
■ Typical Characterisitics



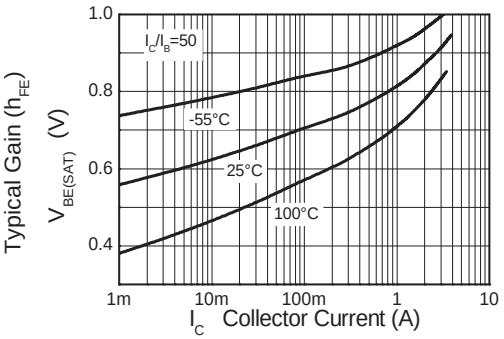

$V_{CE(SAT)}$ v $I_C$



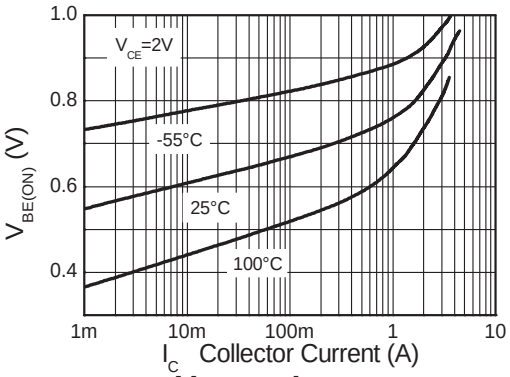

$V_{CE(SAT)}$ v $I_C$



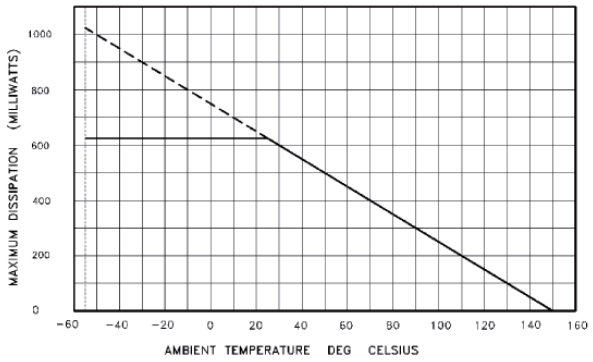

$h_{FE}$ v $I_C$



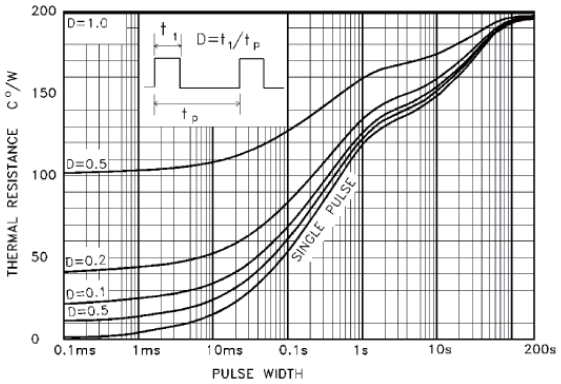

$V_{BE(SAT)}$ v $I_C$




$V_{BE(ON)}$ v $I_C$




DERATING CURVE




MAXIMUM TRANSIENT THERMAL RESISTANCE