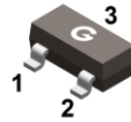


Features

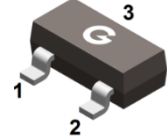
- $BV_{CEO} > 50V$
- $I_C = 2A$ Continuous Collector Current
- 625mW power dissipation
- Low Saturation Voltage $V_{CE(sat)} < 200mV @ 1A$
- $R_{CE(SAT)} = 68m\Omega$ for a low equivalent on-resistance
- H_{FE} characterised up to 6A for high current gain hold-up
- Complementary PNP type: FMMT720, FMMT720-3L

HF



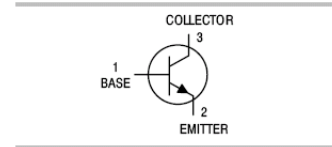
FMMT619

SOT-23



FMMT619-3L

SOT-23-3L



Mechanical Data

- Case: SOT-23, SOT-23-3L
- Molding compound, UL flammability classification rating 94V-0.
- Terminals: Matte tin plated leads, solderable per MIL-STD-202, Method 208.

Ordering Information

Part Number	Package	Shipping	Marking Code
FMMT619	SOT-23	3000 pcs / Tape & Reel	619
FMMT619-3L	SOT-23-3L	3000 pcs / Tape & Reel	619

Maximum Ratings (@ $T_A = 25^\circ C$ unless otherwise specified)

Symbol	Parameter	Value	Units
MAXIMUM RATINGS			
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current - Continuous	2	A
I_{CM}	Peak Pulse Current	6	A
I_B	Base Current	0.5	A

Thermal Characteristic

P_D (Note 1)	Total Power Dissipation	625	mW
P_D (Note 2)	Total Power Dissipation	806	mW
$R_{\theta JA}$ (Note 1)	Thermal resistance Junction-to-ambient	200	$^\circ C/W$
$R_{\theta JA}$ (Note 2)	Thermal resistance Junction-to-ambient	155	$^\circ C/W$
$R_{\theta JL}$ (Note 3)	Thermal Resistance, Junction to Leads	194	$^\circ C/W$
T_J	Junction Temperature	150	$^\circ C$
T_J, T_{stg}	Junction and Storage Temperature	-55 to +150	$^\circ C$

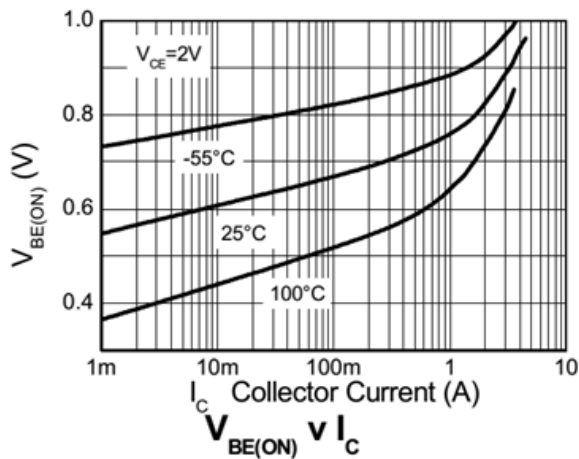
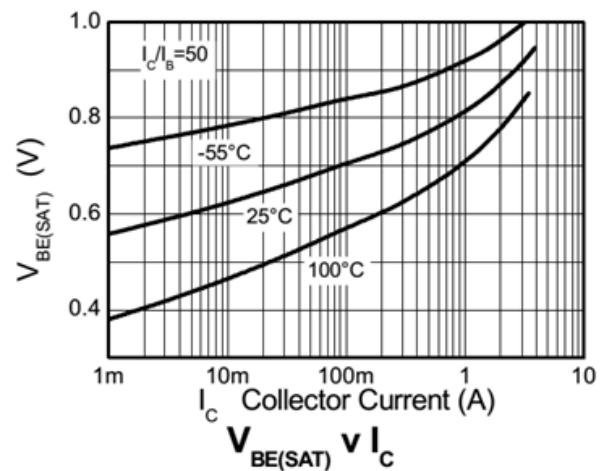
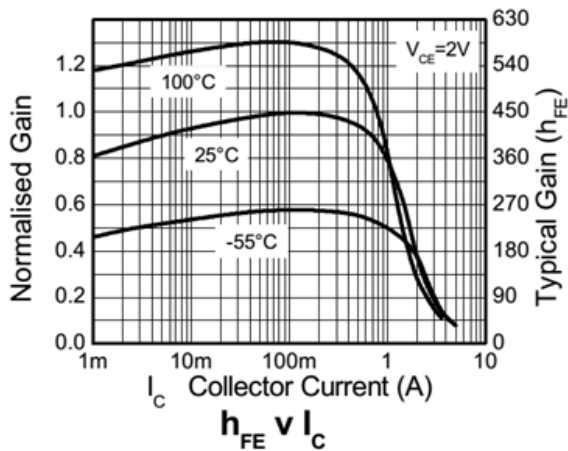
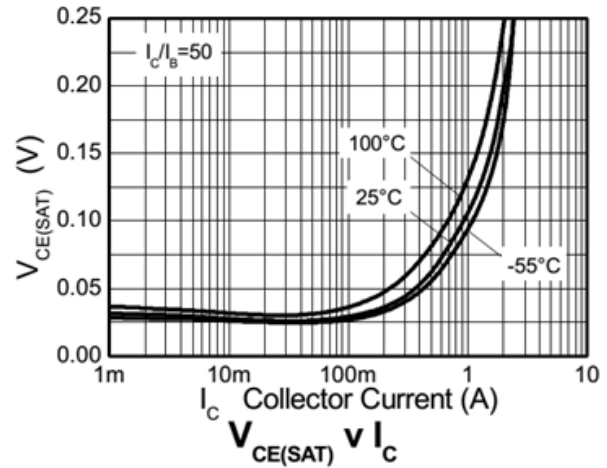
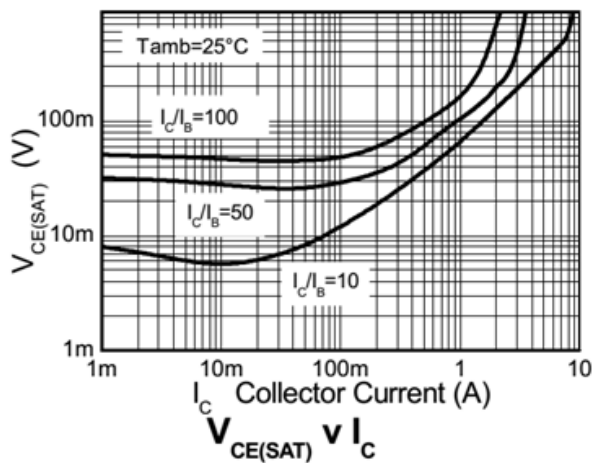
Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	50	170	-	V
Collector-emitter breakdown voltage (Note 4)	$V_{(BR)CEO}$	$I_C = 10\text{mA}, I_B = 0$	50	60	-	V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	7	10	-	V
Collector Cut-Off Current	I_{CBO}	$V_{CB} = 40\text{V}, I_E = 0$	-	-	0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 6\text{V}, I_C = 0$	-	-	0.1	μA
Collector Emitter Cut-off Current	I_{CES}	$V_{CES} = 40\text{V}$	-	-	0.1	μA
DC Current Gain (Note 4)	h_{FE}	$V_{CE} = 2\text{V}, I_C = 10\text{mA}$	200	480	-	
		$V_{CE} = 2\text{V}, I_C = 200\text{mA}$	300	460	-	
		$V_{CE} = 2\text{V}, I_C = 1\text{A}$	200	400	-	
		$V_{CE} = 2\text{V}, I_C = 2\text{A}$	100	225	-	
		$V_{CE} = 2\text{V}, I_C = 6\text{A}$	-	40	-	
Collector-Emitter Saturation Voltage (Note 4)	$V_{CE(sat)}$	$I_C = 0.1\text{A}, I_B = 10\text{mA}$	-	10	20	mV
		$I_C = 1\text{A}, I_B = 10\text{mA}$	-	125	200	
		$I_C = 2\text{A}, I_B = 50\text{mA}$	-	150	220	
Base-emitter saturation Voltage (Note 4)	$V_{BE(sat)}$	$I_C = 2\text{A}, I_B = 50\text{mA}$	-	0.87	1.0	V
Base-emitter turn-on voltage	$V_{BE(on)}$	$I_C = 3\text{A}, V_{CE} = 2\text{V}$	-	0.9	1.0	V
Transition frequency	f_T	$V_{CE} = 10\text{V}, I_C = 50\text{mA}$ $f = 50\text{MHz}$	100	165	-	MHz
Output capacitance	C_{obo}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	-	12	20	pF
Turn-On Time	$t_{(on)}$	$V_{CC} = 10\text{V}, I_C = 1\text{A}$ $I_{B1} = -I_{B2} = 10\text{mA}$	-	170	-	ns
Turn-Off Time	$t_{(off)}$		-	750	-	ns

Notes:

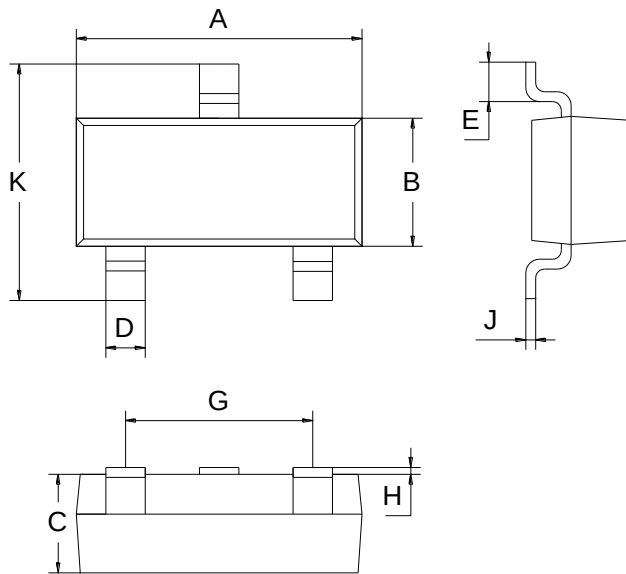
1. For a device surface mounted on 25mm X 25mm FR4 PCB with high coverage of single sided 1 oz copper, in still air conditions; the device is measured when operating in a steady-state condition
2. Same as note 1, except the device is measured at $t \leq 5\text{ sec}$
3. Thermal resistance from junction to solder-point (at the end of the collector lead)
4. Measured under pulsed conditions. Pulse width $\leq 300\mu\text{s}$. Duty cycle $\leq 2\%$

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)



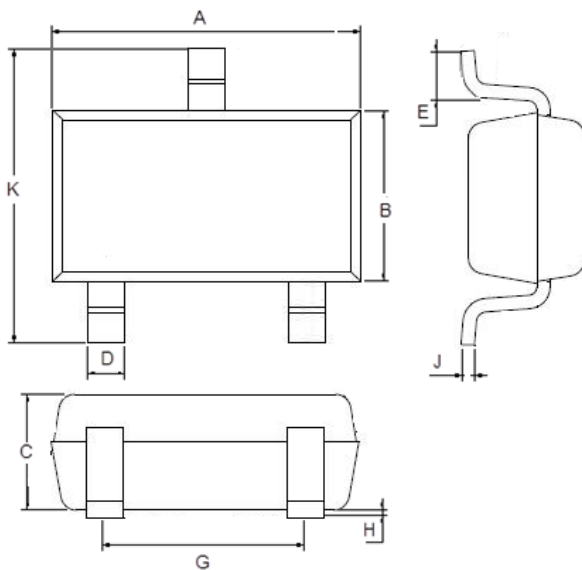
Package Outline Dimensions (unit: mm)

SOT-23



SOT-23		
Dim	Min	Max
A	2.70	3.10
B	1.10	1.50
C	0.9	1.1
D	0.3	0.5
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.05	0.15
K	2.20	2.60

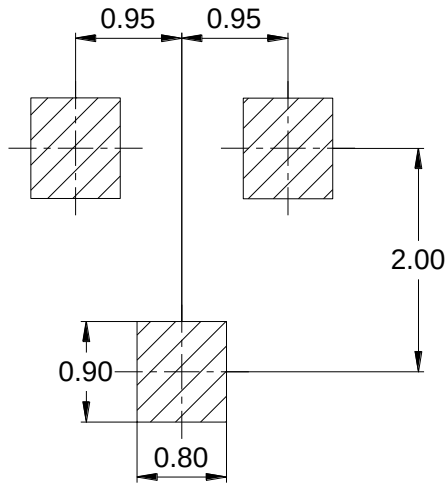
SOT-23-3L



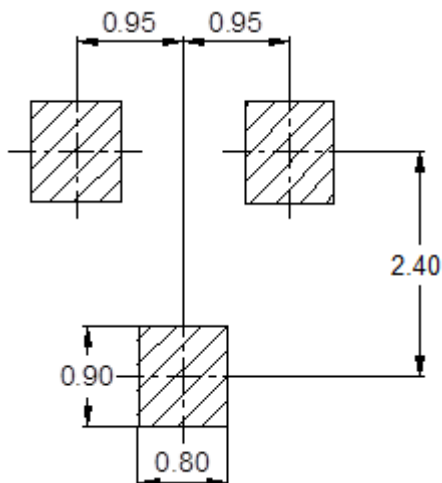
SOT-23-3L		
Dim	Min	Max
A	2.80	3.00
B	1.50	1.70
C	1.00	1.20
D	0.35	0.45
E	0.35	0.55
G	1.80	2.00
H	0.02	0.10
J	0.10	0.20
K	2.60	3.00
All Dimensions in mm		

SOLDERING FOOTPRINT (unit: mm)

SOT-23



SOT-23-3L



IMPORTANT NOTICE

Galaxy Microelectronics (GME) reserves the right to make changes without further notice to any product herein to make corrections, modifications, improvements, or other changes. GME does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others.