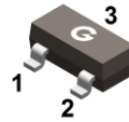


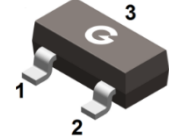
Features

- $BV_{CEO} > 50V$
- $I_C = 2A$ 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

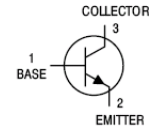
HF



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	$^\circ C$

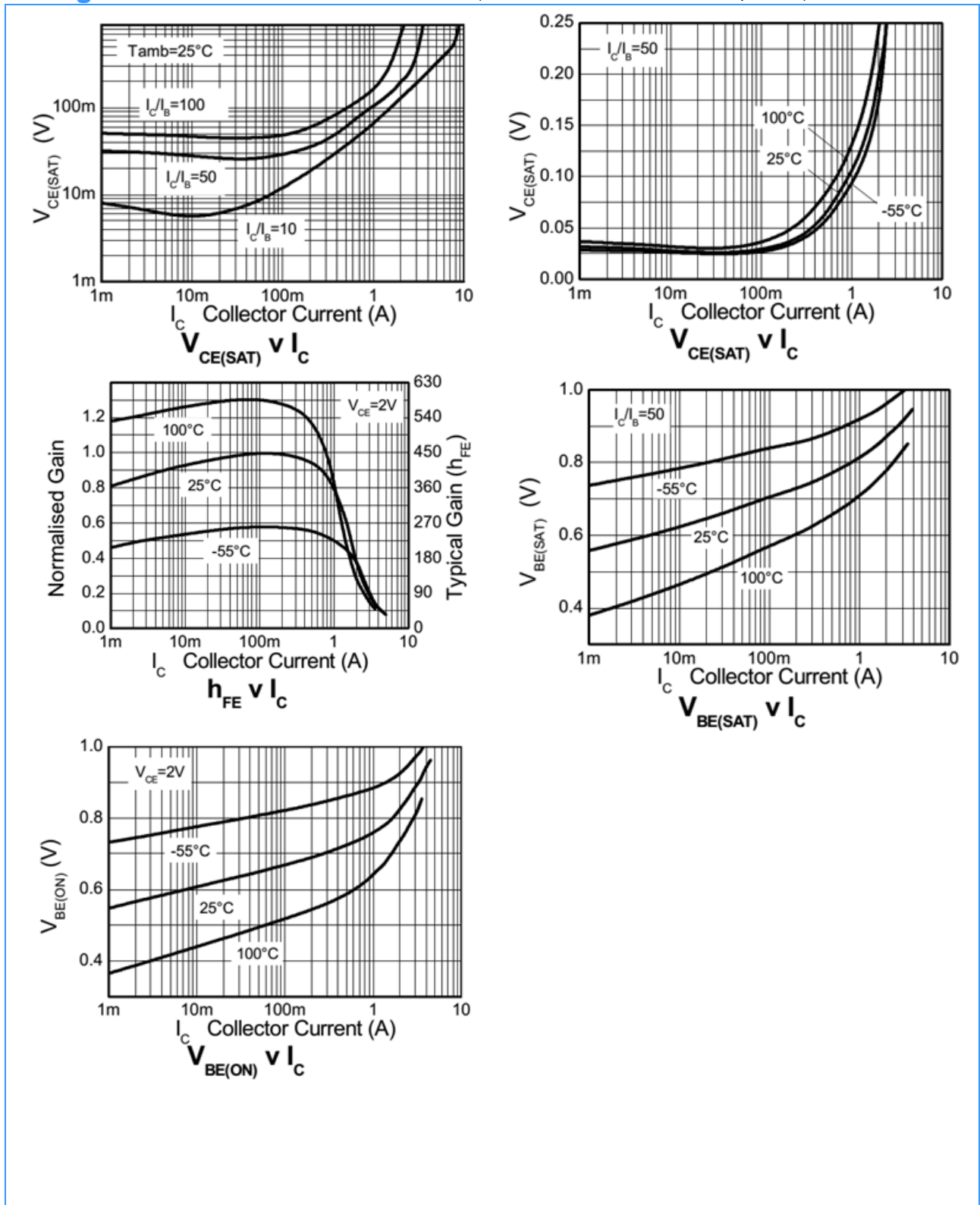
Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

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:

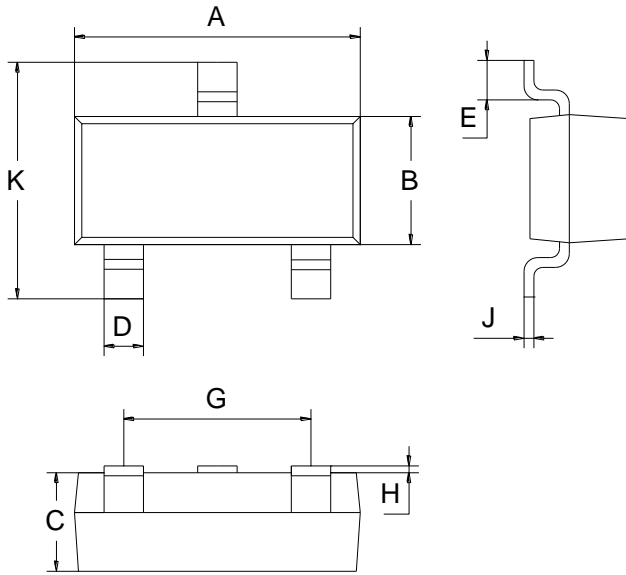
1. For a device surface mounted on 25mm X 25mm FR4 PCB with high coverage of single sided 1 oz copper, in still air conditions; the device is measured when operating in a steady-state condition
2. Same as note 1, except the device is measured at $t \leq 5$ sec
3. Thermal resistance from junction to solder-point (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)



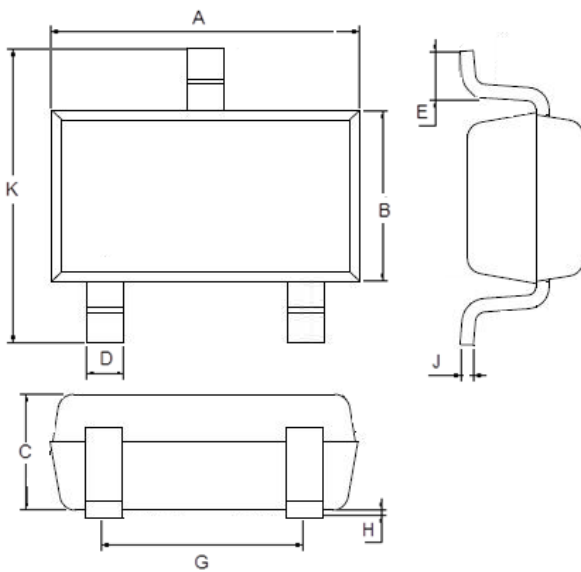
Package Outline Dimensions (unit: mm)

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

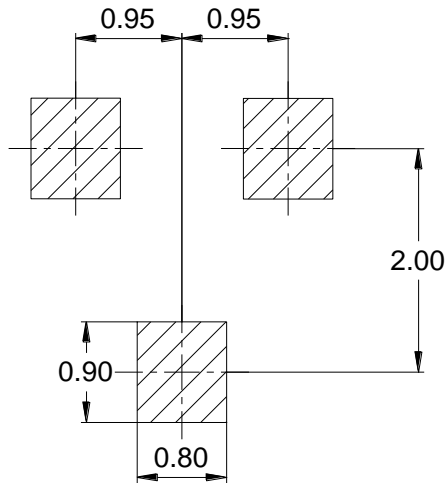
SOT-23-3L



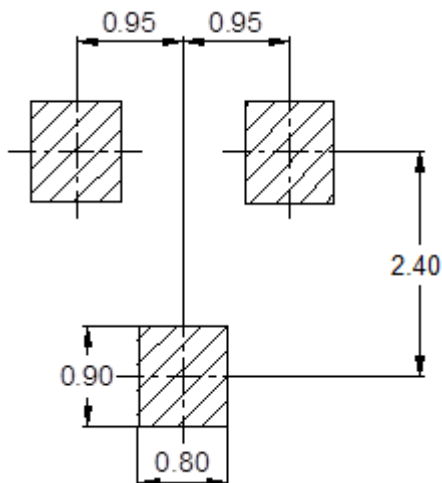
SOT-23-3L		
Dim	Min	Max
A	2.80	3.00
B	1.50	1.70
C	1.00	1.20
D	0.35	0.45
E	0.35	0.55
G	1.80	2.00
H	0.02	0.10
J	0.10	0.20
K	2.60	3.00
All Dimensions in mm		

SOLDERING FOOTPRINT (unit: mm)

SOT-23



SOT-23-3L



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