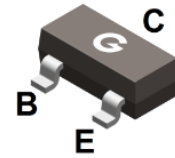
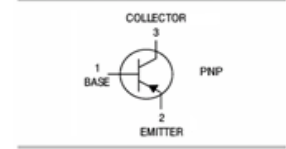


Features

- High saturation voltage
- Complementary to FMMT491
- Excellent h_{FE} linearity
- h_{FE} characterised up to -2A for high current gain hold up

HF



SOT-23

Mechanical Data

- Case: SOT-23
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
FMMT591	SOT-23	3000 pcs / Tape & Reel	591

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-80	V
Collector-Emitter Voltage	V_{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current (Continuous)	I_C	-1	A
Collector Current (Pulse)	I_{CM}	-2	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ($T_A = 25^\circ\text{C}$) *1	P_D	500	mW
Thermal Resistance Junction-to-Air *2	$R_{\theta JA}$	191	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case *2	$R_{\theta JC}$	74	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Lead *2	$R_{\theta JL}$	45	$^\circ\text{C/W}$
Operating Junction Temperature	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -100\mu\text{A}, I_E = 0$	-80	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	-60	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -100\mu\text{A}, I_C = 0$	-5	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = -60\text{V}, I_E = 0$	-	-	-100	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -4\text{V}, I_C = 0$	-	-	-100	nA
DC Current Gain	h_{FE}	$V_{CE} = -5\text{V}, I_C = -1\text{mA}$	100	-	-	-
		$V_{CE} = -5\text{V}, I_C = -500\text{mA}$	100	-	300	-
		$V_{CE} = -5\text{V}, I_C = -1\text{A}$	80	-	-	-
		$V_{CE} = -5\text{V}, I_C = -2\text{A}$	15	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$	-	-	-0.3	V
		$I_C = -1\text{A}, I_B = -100\text{mA}$	-	-	-0.6	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -1\text{A}, I_B = -100\text{mA}$	-	-	-1.2	V
Base-emitter Voltage	$V_{BE(on)}$	$V_{CE} = -5\text{V}, I_C = -1\text{A}$	-	-	-1	V
Transition Frequency	f_T	$V_{CE} = -10\text{V}, I_C = -50\text{mA}$ $f = 100\text{MHz}$	150	-	-	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$	-	-	10	pF

Notes:

- For a device mounted with the collector lead on 15mm × 15mm 1oz copper that is on a single-sided FR-4 PCB; device is measured under still air conditions whilst operating in a steady-state
- The data tested by surface mounted on a 15mm * 15mm * 1mm FR4-epoxy P.C.B

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

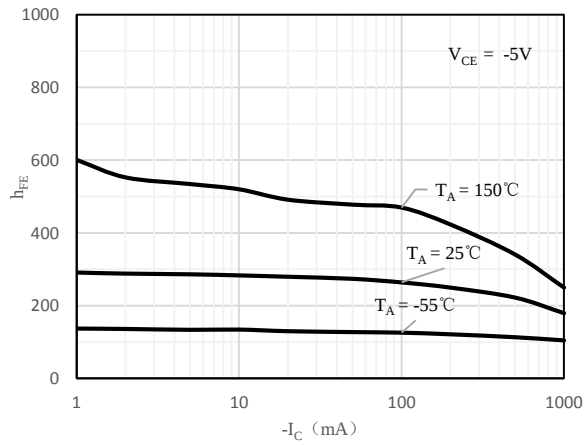


Fig 1 h_{FE} vs. I_C

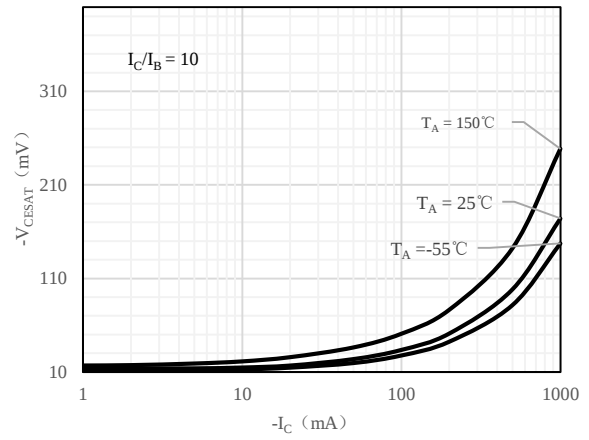


Fig 2 $V_{CE(sat)}$ vs. I_C

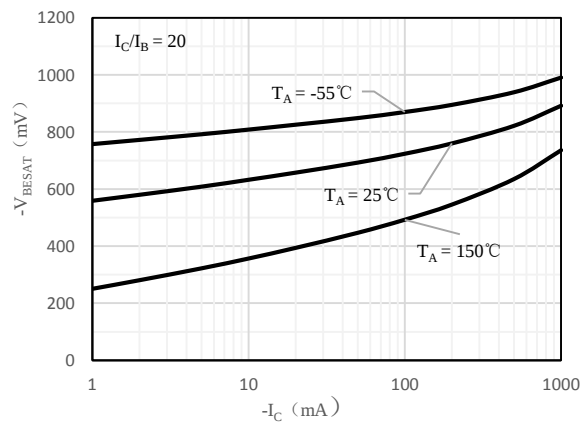


Fig 3 $V_{BE(sat)}$ vs. I_C

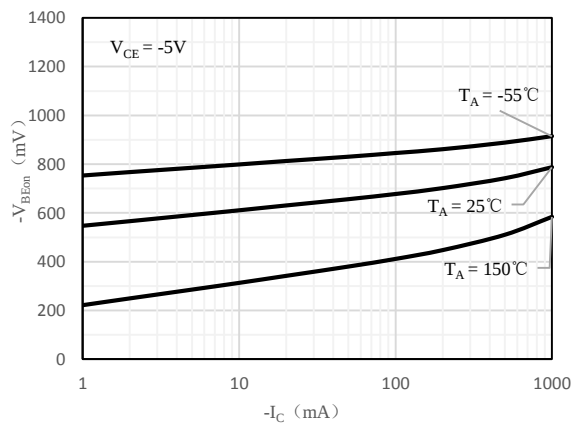
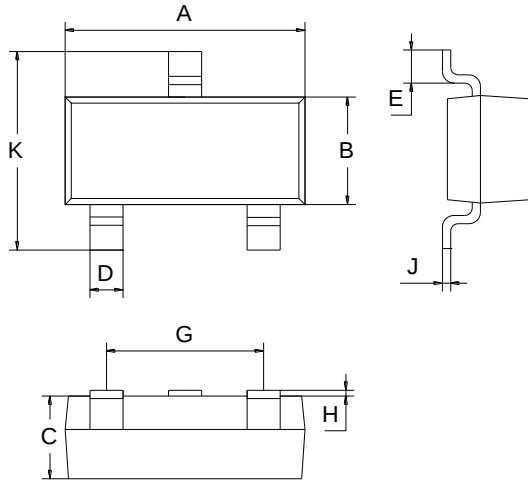


Fig 4 $V_{BE(on)}$ vs. I_C

Package Outline Dimensions (Unit: mm)

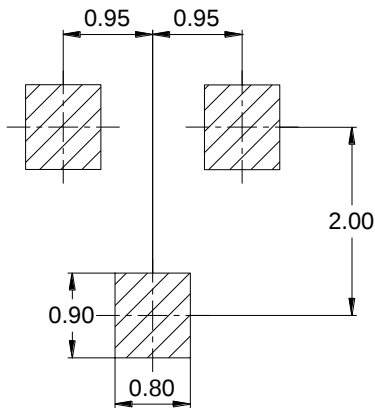
SOT-23



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

Mounting Pad Layout (Unit: mm)

SOT-23



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