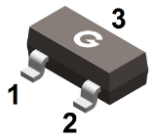
PNP Silicon Epitaxial Planar Transistor

FMMT720 FMMT720-3L

Features

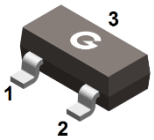
HF

- Low collector-emitter saturation voltage
- High collector current capability
- I_C up to 4A peak pulse current
- Complementary NPN type: FMMT619, FMMT619-3L
- RoHS compliant with Halogen-free



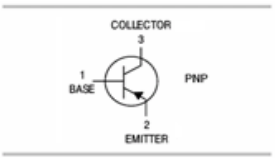
FMMT720

SOT-23



FMMT720-3L

SOT-23-3L



Mechanical Data

- Case: SOT-23, SOT-23-3L
- 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
FMMT720	SOT-23	3000 pcs / Tape & Reel	720
FMMT720-3L	SOT-23-3L	3000 pcs / Tape & Reel	720

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	-40	V
Collector-Emitter Breakdown Voltage	V_{CEO}	-40	V
Emitter-Base Breakdown Voltage	V_{EBO}	-5	V
Collector Current (Continuous)	I_C	-2	A
Collector Current (Peak, $t_p \leq 1$ms)	I_{CM}	-4	A
Base Current	I_B	-0.5	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	0.35	W
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	210	°C/W
Thermal Resistance Junction-to-Case *1	$R_{\theta JC}$	120	°C/W
Thermal Resistance Junction-to-Lead *1	$R_{\theta JL}$	180	°C/W
Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Note 1: The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = -100μA, I_E = 0	-40	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = -10mA, I_B = 0	-40	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = -100μA, I_C = 0	-5	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = -35V, I_E = 0	-	-	-0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = -4V, I_C = 0	-	-	-0.1	μA
DC Current Gain	h_{FE}	V_{CE} = -2V, I_C = -10mA	300	-	-	-
		V_{CE} = -2V, I_C = -100mA	300	-	-	-
		V_{CE} = -2V, I_C = -1A	180	-	-	-
		V_{CE} = -2V, I_C = -1.5A	60			
		V_{CE} = -2V, I_C = -3A	12	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	I_C = -0.1A, I_B = -10mA	-	-	-0.040	V
		I_C = -1A, I_B = -50mA	-	-	-0.220	V
		I_C = -1.5A, I_B = -100mA	-	-	-0.330	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	I_C = -1.5A, I_B = -75mA	-	-	-1.00	V
Base-emitter Voltage	$V_{BE(on)}$	I_C = -1.5A, V_{CE} = -2V	-	-	-1.2	V
Transition Frequency	f_T	V_{CE} = -10V, I_C = -50mA f = 100MHz	150	190	-	MHz
Output Capacitance	C_{ob}	V_{CB} = -10V, f = 1MHz	-	22	25	pF
Turn-On Time	$t_{(on)}$	V_{CC} = -15V, I_C = -0.75A I_{B1} = I_{B2} = -15mA	-	40	-	ns
Turn-Off Time	$t_{(off)}$		-	435	-	

Ratings and Characteristic Curves (@ T_A = 25°C unless otherwise specified)

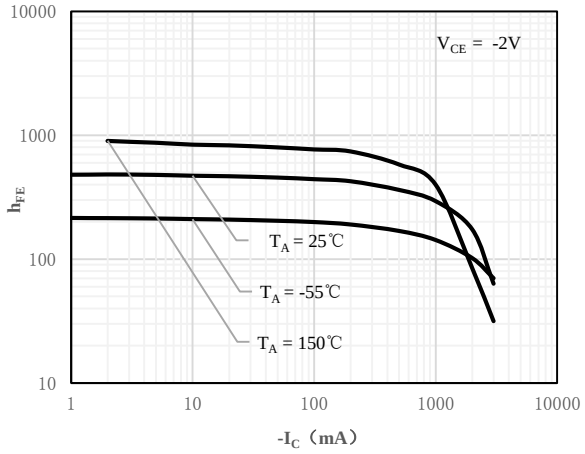


Fig 1 h_{FE} vs. I_C

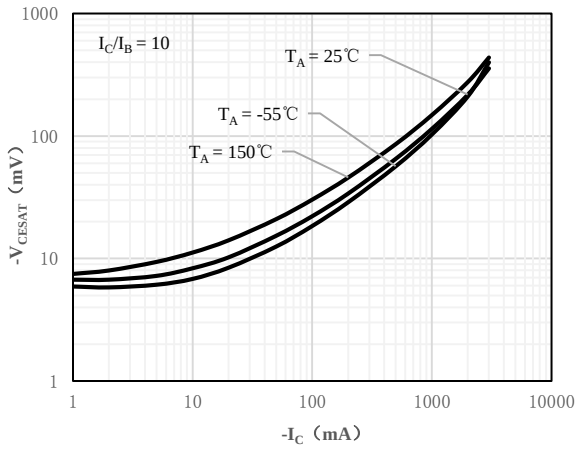


Fig 2 $V_{CE(sat)}$ vs. I_C

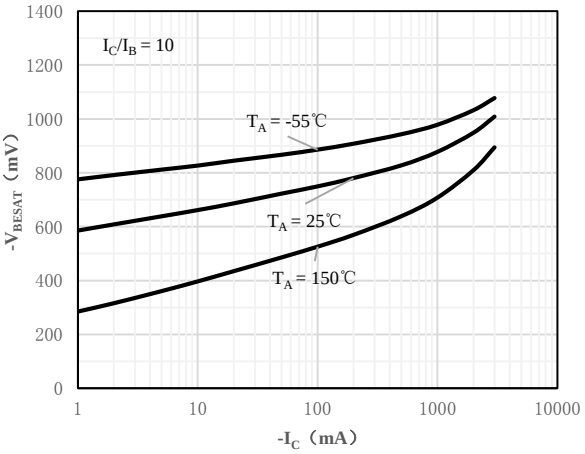


Fig 3 $V_{BE(sat)}$ vs. I_C

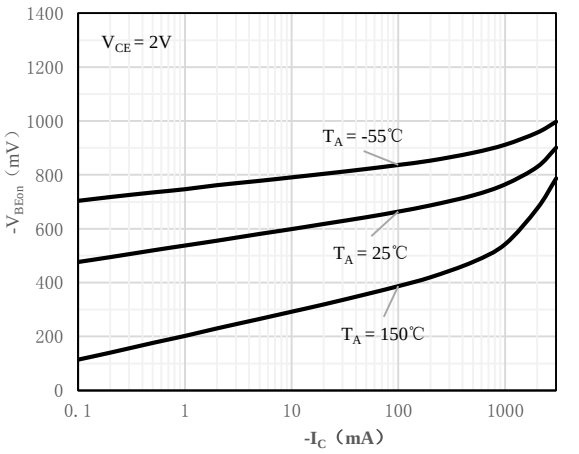


Fig 4 $V_{BE(ON)}$ vs. I_C

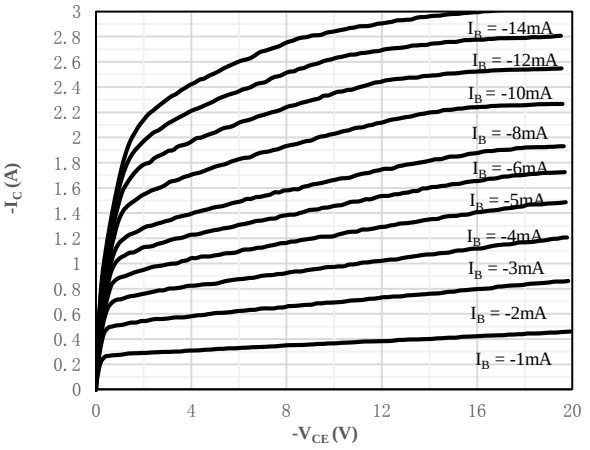


Fig 5 I_C vs. V_{CE}

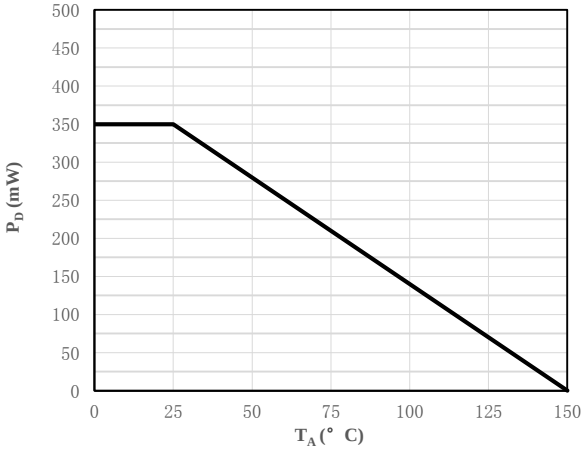


Fig 6 P_D vs. T_A

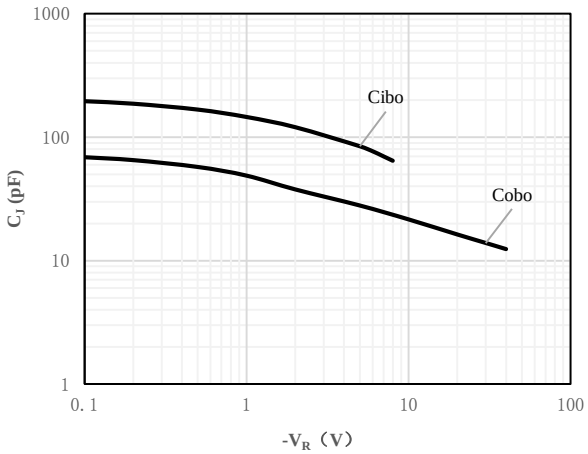
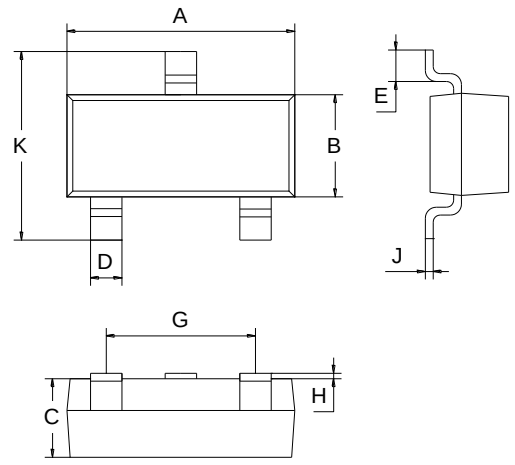
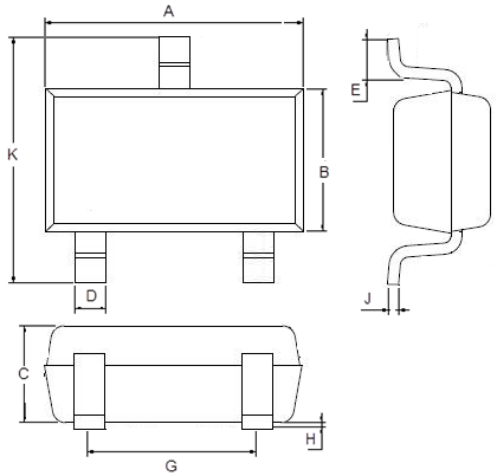


Fig 7 C_J vs. V_R

Package Outline Dimensions (Unit: mm)



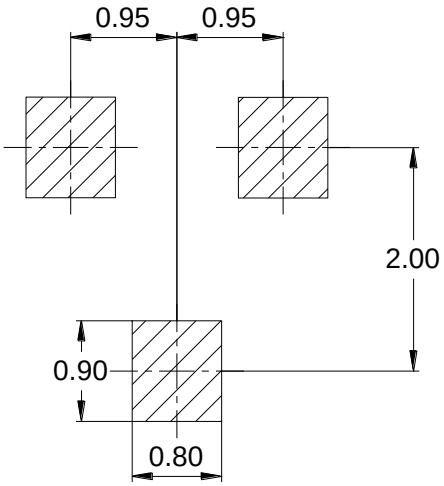
SOT-23		
Dimension	**Min.**	**Max.**
A	2.70	3.10
B	1.10	1.50
C	0.9	1.1
D	0.3	0.5
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.05	0.15
K	2.20	2.60



SOT-23-3L		
Dimension	**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

Mounting Pad Layout (Unit: mm)

SOT-23



SOT-23-3L

