



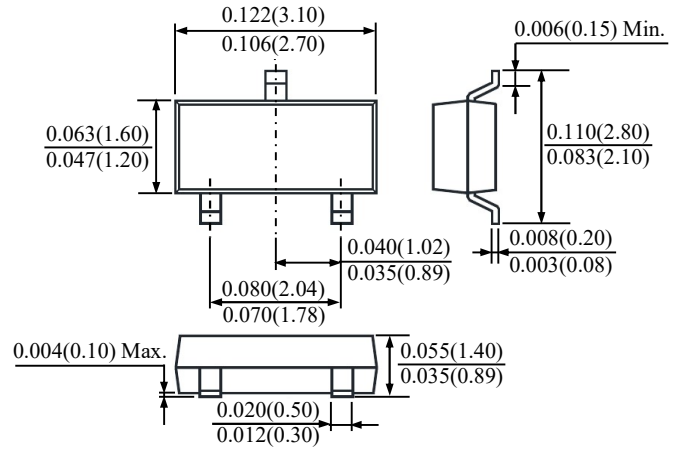
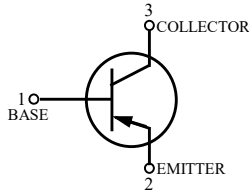
FMMT591AH

PNP TRANSISTOR

FEATURES

· Suffix "H" indicates Halogen-free parts, ex. FMMT591AH

SOT-23



Dimensions in inches and (millimeter)

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	-40	V
Collector Emitter Voltage	V_{CEO}	-40	V
Emitter Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-1	A
Peak Pulse Current	I_{CM}	-2	A
Power Dissipation	P_D	350	mW
Thermal Resistance from Junction to Ambient (Note 1)	$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 65 to + 150	$^\circ\text{C}$

Note :

1. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout



FM591AH

PNP TRANSISTOR

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

Parameter	Conditions	Symbol	Min.	Max.	Unit
DC Current Gain	$V_{CE} = -5\text{V}, I_C = -1\text{mA}$	h_{FE}	300	-	-
	$V_{CE} = -5\text{V}, I_C = -100\text{mA}$		300	800	
	$V_{CE} = -5\text{V}, I_C = -500\text{mA}$		250	-	
	$V_{CE} = -5\text{V}, I_C = -1000\text{mA}$		160	-	
Collector Base Cutoff Current	$V_{CB} = -30\text{V}$	I_{CBO}	-	-100	nA
Collector Emitter Cutoff Current	$V_{CE} = -30\text{V}$	I_{CES}	-	-100	nA
Emitter Base Cutoff Current	$V_{EB} = -5\text{V}$	I_{EBO}	-	-100	nA
Collector Base Breakdown Voltage	$I_C = -50\mu\text{A}$	$V_{(BR)CBO}$	-40	-	V
Collector Emitter Breakdown Voltage	$I_C = -1\text{mA}$	$V_{(BR)CEO}$	-40	-	V
Emitter Base Breakdown Voltage	$I_E = -50\mu\text{A}$	$V_{(BR)EBO}$	-5	-	V
Collector Emitter Saturation Voltage	$I_C = -100\text{mA}, I_B = -1\text{mA}$	$V_{CE(sat)}$	-	-0.20	V
	$I_C = -500\text{mA}, I_B = -20\text{mA}$		-	-0.35	
	$I_C = -1000\text{mA}, I_B = -100\text{mA}$		-	-0.50	
Base Emitter Saturation Voltage	$I_C = -1000\text{mA}, I_B = -50\text{mA}$	$V_{BE(sat)}$	-	-1.1	V
Base Emitter Voltage	$I_C = -1\text{A}, V_{CE} = -5\text{V}$	V_{BE}	-	-1	V
Gain Bandwidth Product	$V_{CE} = -10\text{V}, I_C = -50\text{mA},$ $f = 100\text{ MHz}$	f_T	150	-	MHz
Collector Capacitance	$V_{CB} = -10\text{V}, f = 1\text{MHz}$	C_{ob}	-	12	pF



FM591AH

PNP TRANSISTOR

RATINGS AND CHARACTERISTIC CURVES

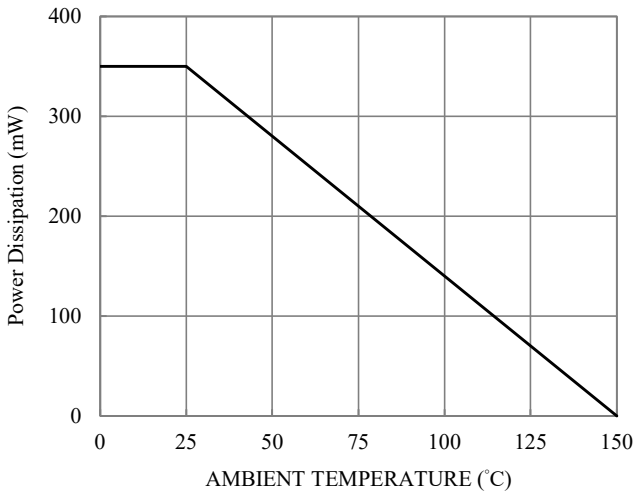


Fig. 1 Power Derating Curves

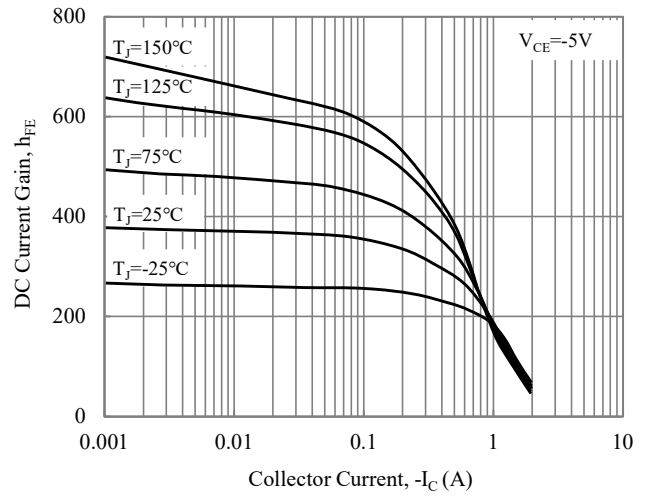


Fig. 2 Current Gain vs. Collector Current

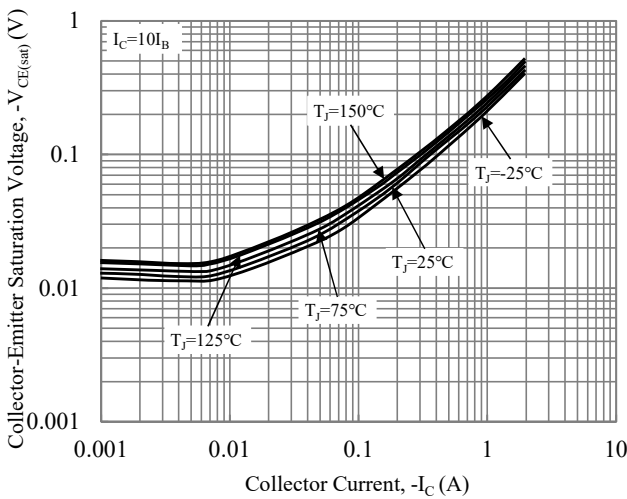


Fig. 3 Collector-Emitter Saturation Voltage vs. Collector Current

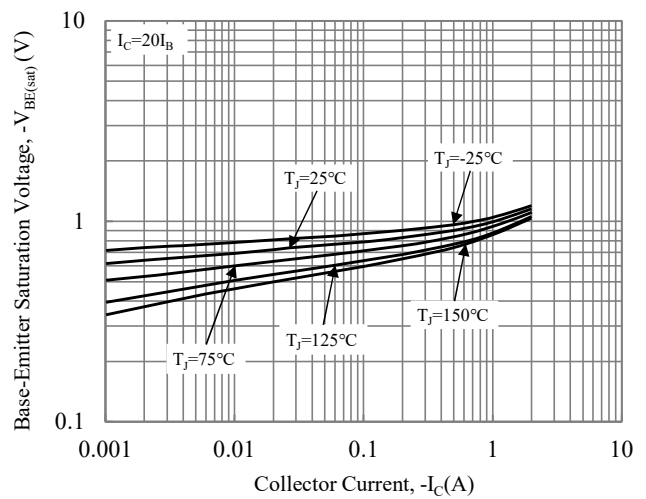


Fig. 4 Base-Emitter Saturation Voltage vs. Collector Current

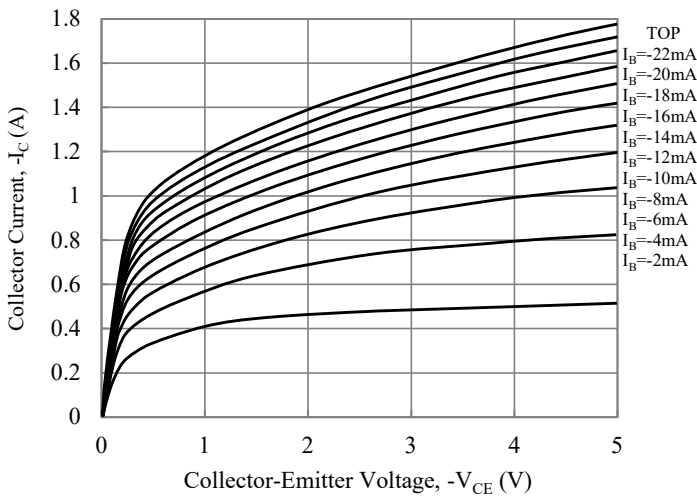


Fig. 5 Output Characteristics

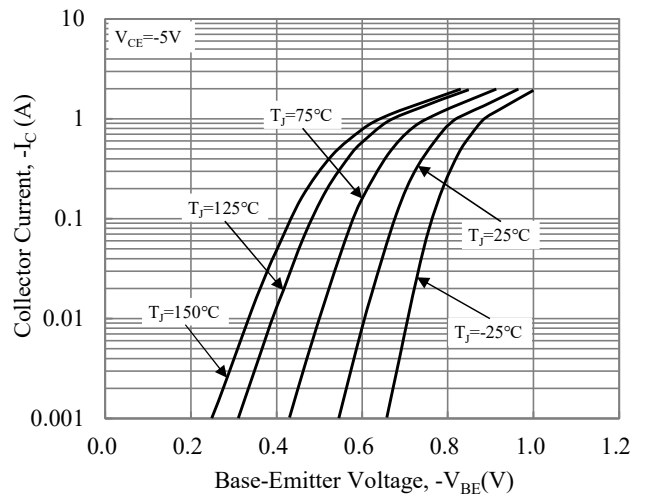


Fig. 6 Base-Emitter Voltage vs. Collector Current



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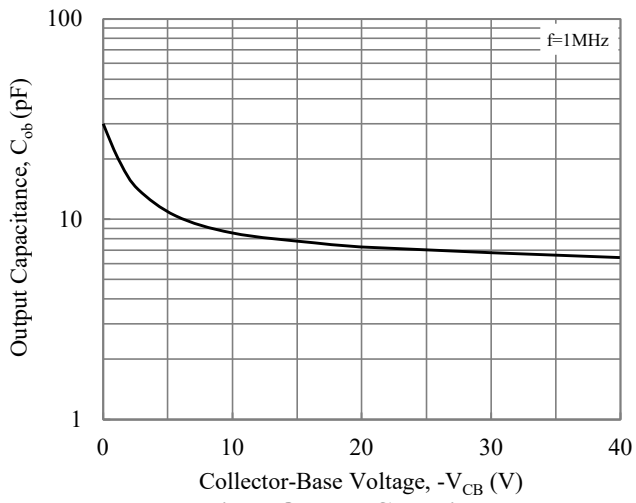


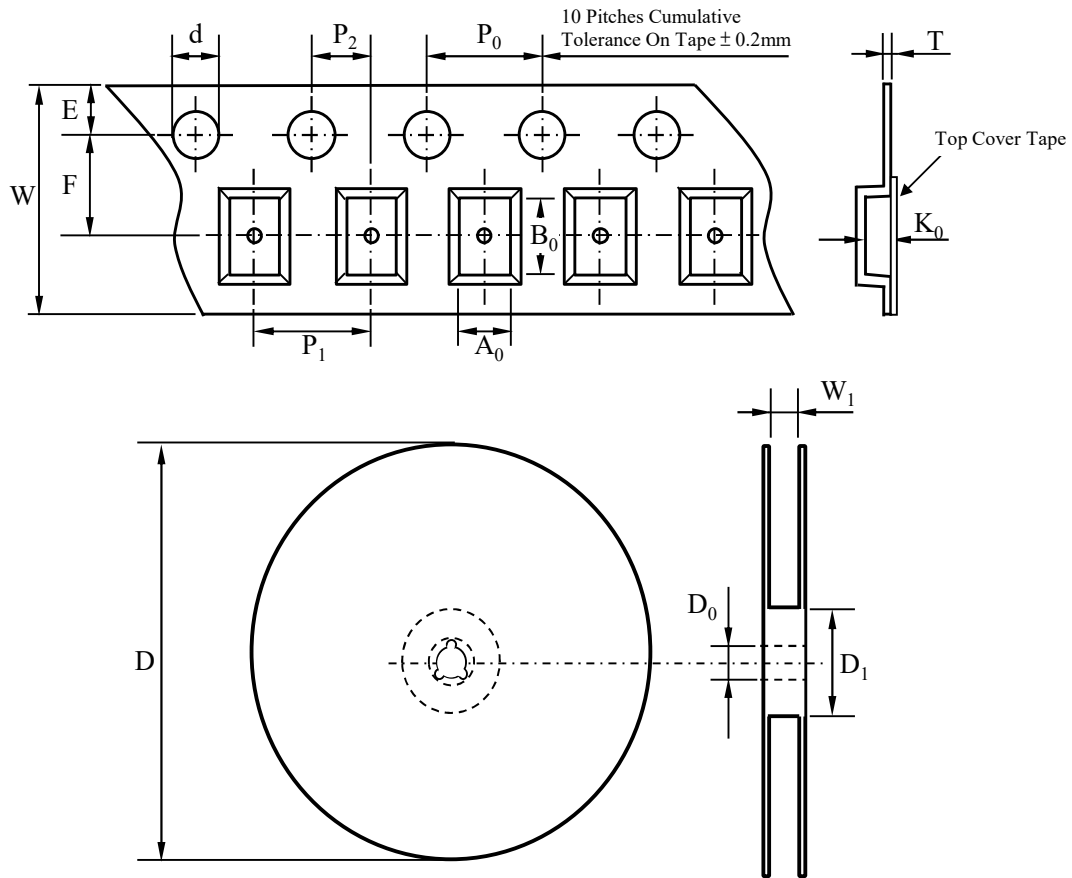
Fig. 7 Output Capacitance



FM591AH

PNP TRANSISTOR

PACKAGE DIMENSION



Item	Symbol	SOT-23
Carrier width	A_0	*
Carrier length	B_0	
Carrier depth	K_0	
Sprocket hole	d	1.50 ± 0.10
Reel outside diameter	D	178.00 ± 2.00
Feed hole width	D_0	13.00 ± 0.50
Reel inner diameter	D_1	MIN. 50.00
Sprocket hole position	E	1.75 ± 0.10
Punch hole position	F	3.50 ± 0.10
Sprocket hole pitch	P_0	4.00 ± 0.10
Punch hole pitch	P_1	4.00 ± 0.10
Embossment center	P_2	2.00 ± 0.10
Overall tape thickness	T	0.20 ± 0.05
Tape width	W	8.00 ± 0.20
Reel width	W_1	MAX. 14.50

Note *: A_0 , B_0 , and K_0 are determined by component size. The clearance between the components and the cavity must be within 0.05 mm min. to 0.5 mm max.

ORDER INFORMATION

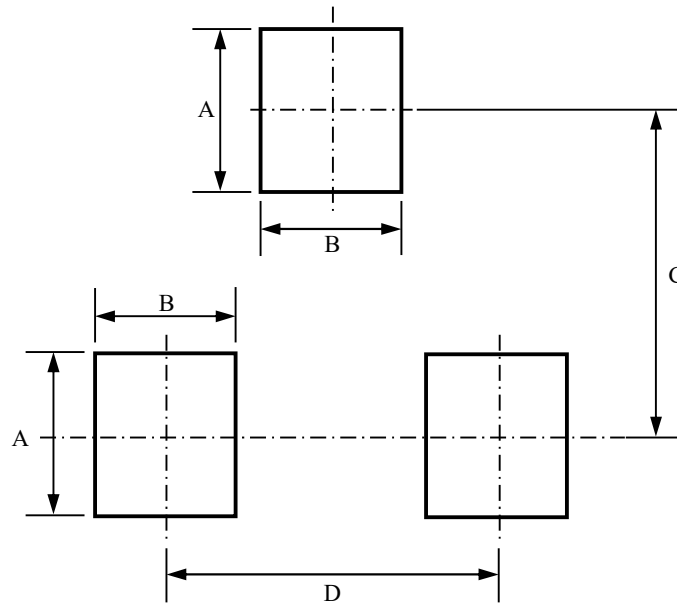
Part Number	Marking Code	Reel Size	Quantity
FM591AH	ZZ	7"	3,000



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SUGGESTED SOLDER PAD LAYOUT



Unit :mm

PACKAGE	A	B	C	D
SOT-23	1.00	0.80	2.00	1.90