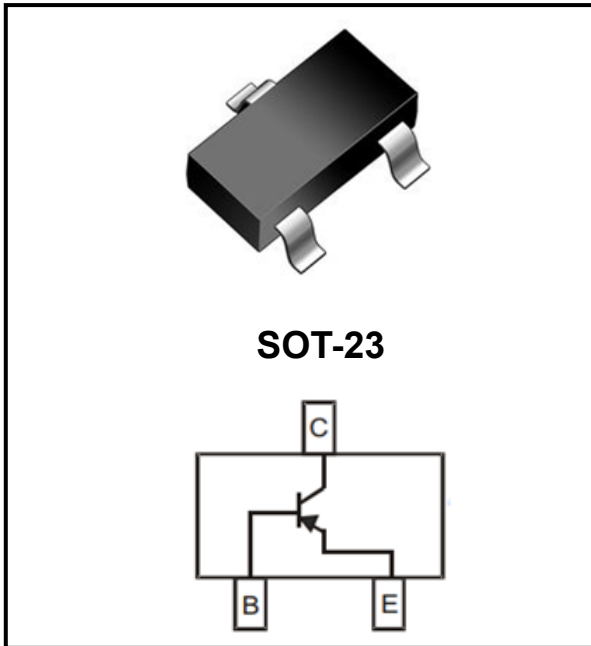


PNP General Purpose Amplifier



Features

- Epoxy meets UL-94 V-0 flammability rating
- Surface mount package ideally suited for automatic insertion
- Moisture Sensitivity Level 1
- Low equivalent on-resistance
- Part no. with suffix "Q" means AEC-Q101 qualified

Mechanical Data

- Package: SOT-23
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Marking: 591

■ Maximum Ratings (Ta=25°C Unless otherwise specified)

Item	Symbol	Unit	Value
Collector-Base Voltage	V_{CBO}	V	-80
Collector-Emitter Voltage	V_{CEO}	V	-60
Emitter-Base Voltage	V_{EBO}	V	-5
Collector Current	I_C	A	-1
Collector Power Dissipation	P_C	mW	300
Thermal Resistance From Junction to Ambient (*)	$R_{\theta JA}$	°C/W	417
Junction Temperature	T_J	°C	150
Storage Temperature	T_{STG}	°C	-55 to +150

(*) Device mounted on FR-4 PCB 1.0 x 1.0 x 0.06 inch



FM591Q

RoHS
COMPLIANT

■ Electrical Characteristics (Ta=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Type	Max
Collector-base breakdown voltage	V_{CBO}	V	$I_C = -100\mu A, I_E = 0$	-80		
Collector-emitter breakdown voltage	V_{CEO}	V	$I_C = -10mA, I_B = 0$	-60		
Emitter-base breakdown voltage	V_{EBO}	V	$I_E = -100\mu A, I_C = 0$	-5		
Collector-Base cut-off current	I_{CBO}	μA	$V_{CB} = -60V, I_E = 0$			-0.1
Emitter-Base cut-off current	I_{EBO}	μA	$V_{EB} = -4V, I_C = 0$			-0.1
DC current gain	h_{FE}		$V_{CE} = -5V, I_C = -1mA$	100		
	h_{FE}		$V_{CE} = -5V, I_C = -500mA$	100		300
	h_{FE}		$V_{CE} = -5V, I_C = -1A$	80		
	h_{FE}		$V_{CE} = -5V, I_C = -2A$	15		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C = -500mA, I_B = -50mA$			-0.3
		V	$I_C = -1A, I_B = -100mA$			-0.6
Base-emitter saturation voltage	$V_{BE(sat)}$	V	$I_C = -1A, I_B = -100mA$			-1.2
Base-emitter voltage	V_{BE}	V	$V_{CE} = -5V, I_C = -1A$			-1
Transition frequency	f_T	MHz	$V_{CE} = -10V, I_C = -50mA, f = 100MHz$	150		
Collector-Base Output Capacitance	C_{ob}	pF	$V_{CB} = -10V, I_E = 0, f = 1MHz$		10	

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
FM591Q	F2	Approximate 0.009	3000	30000	120000	7" reel



■ Electrical Characteristics (Typical)

Fig.1 - Static characteristic

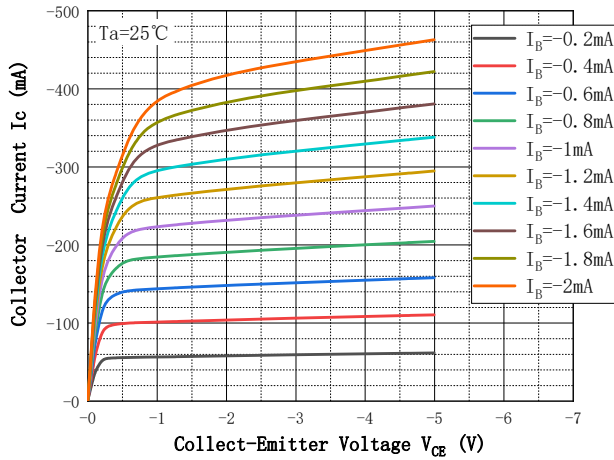


Fig.2 - DC Current Gain

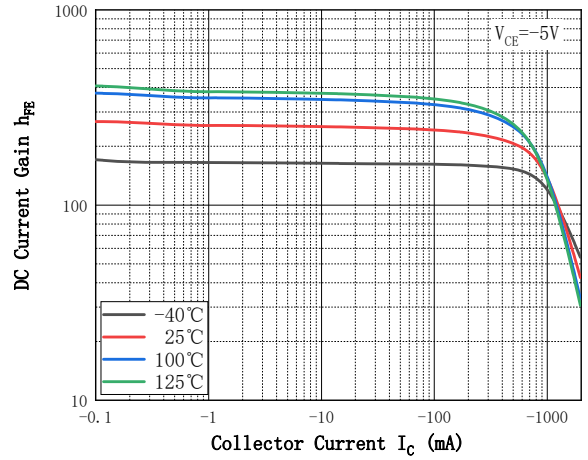


Fig.3 - Collect-Emmitter Saturation Voltage

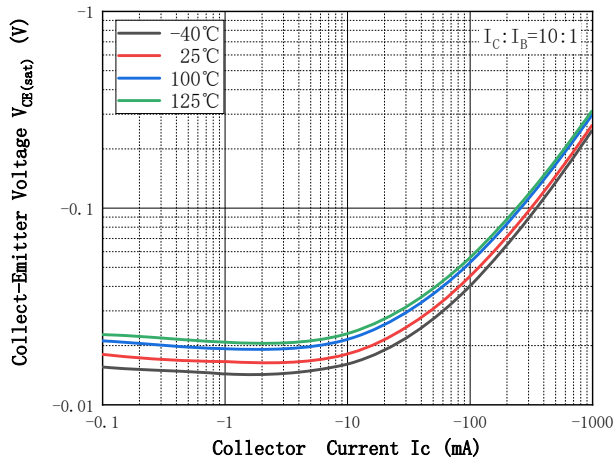


Fig.4 - Base-Emmitter Voltage

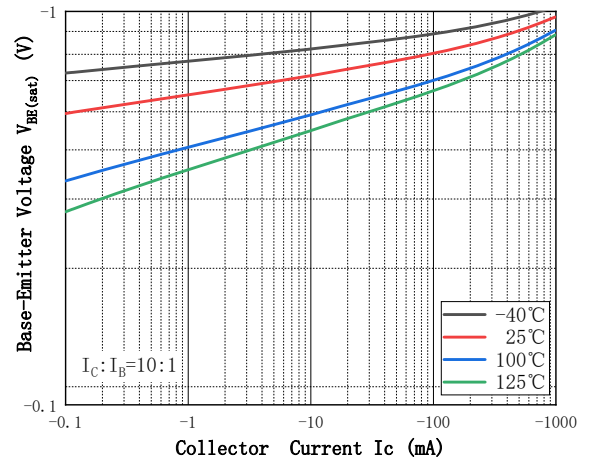


Fig.5 - Base-Emmitter On Voltage

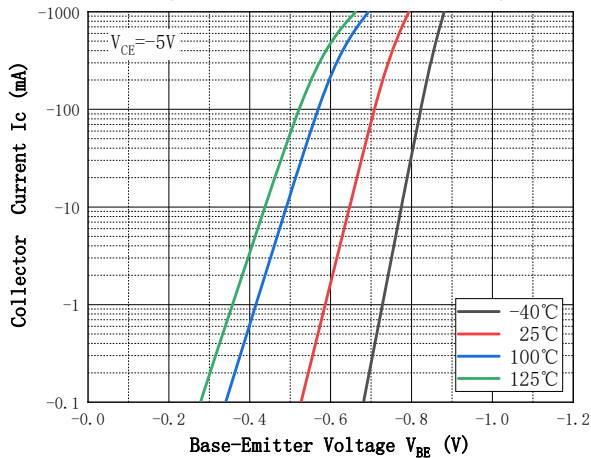
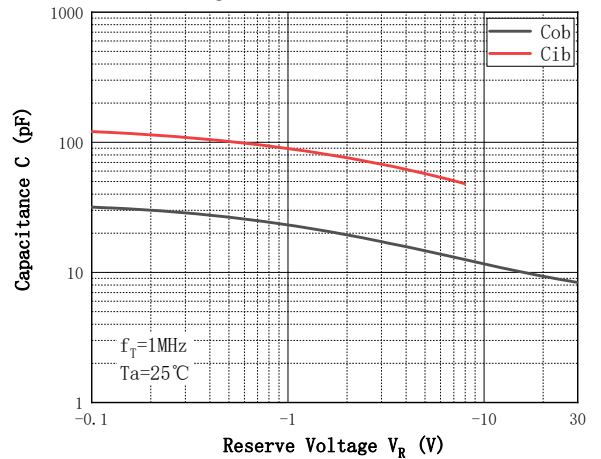
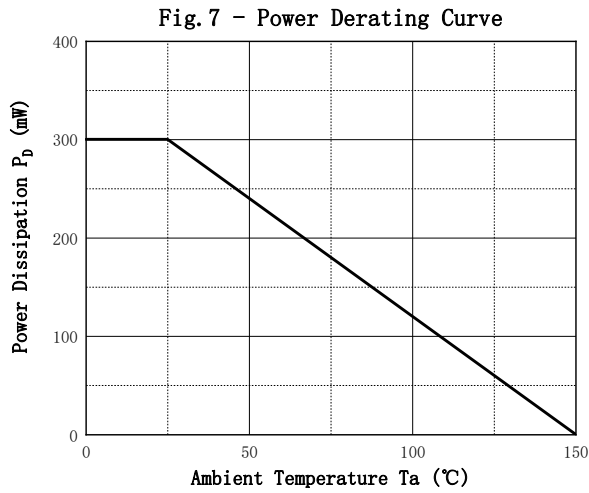
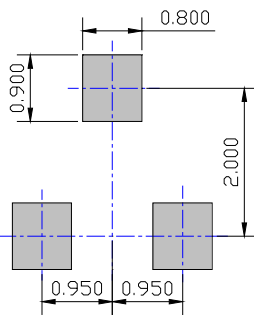
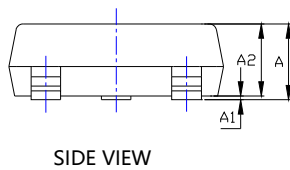
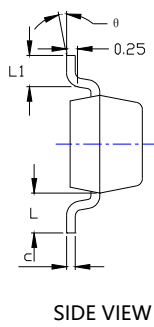
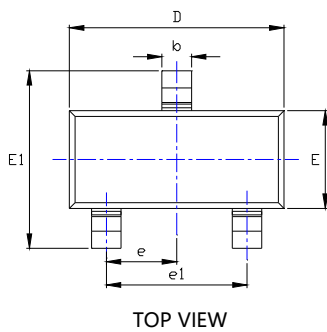


Fig.6 - Cob/Cib—VCE/VEB





■SOT-23 Package Outline Dimensions & Suggested Pad Layout



UNIT: mm

SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.020	0.300	0.500
θ	0°	8°	0°	8°

NOTE:

- 1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
- 2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
- 3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



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