2SB1188

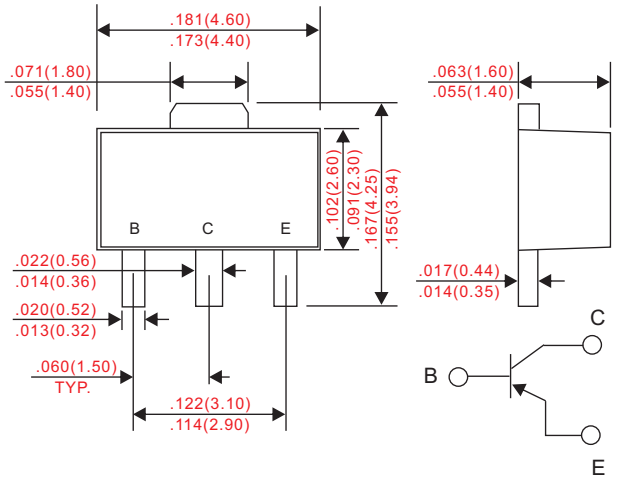
2A General Purpose PNP Epitaxial Planar Transistor

■ Features

- Low $V_{CE(sat)}$
  $V_{CE(sat)}$ = -0.5V(Typ.) (I_C/I_B=-2A/-0.2A).
- Complements 2SD1766.
- Suffix "G" indicates Halogen-free part, ex.2SB1188G.
- Lead-free parts for green partner, exceeds environmental standards of MIL-STD-19500 /228

■ Outline

SOT-89



Dimensions in inches and (millimeters)

■ Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-89
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any
- Weight : Approximated 0.045 gram

■ Maximum ratings

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

PARAMETER	CONDITIONS	Symbol	2SB1188	UNIT
Collector-Base voltage		V_{CBO}	-40	V
Collector-Emitter voltage		V_{CEO}	-32	V
Emitter-Base voltage		V_{EBO}	-5	V
Collector current		I_C	-2	A
	Single pulse P_W = 100ms	I_{CP}	-3	
Collector power dissipation		P_C	500	mW
Storage temperature		T_J	-55 ~ +150	°C
Operating temperature		T_{STG}	-55 ~ +150	

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■ Electrical characteristics

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Collector-Base breakdown voltage	I_C = -50uA	$V_{(BR)CBO}$	-40			V
Collector-Emitter breakdown voltage	I_C = -1mA	$V_{(BR)CEO}$	-32			V
Emitter-Base breakdown voltage	I_E = -50uA	$V_{(BR)EBO}$	-5			V
Collector cutoff current	V_{CB} = -20V	I_{CBO}			-1	uA
Emitter cutoff current	V_{EB} = -4V	I_{EBO}			-1	
Collector-Emitter saturation voltage	I_C = -2A, I_B = -0.2A	$V_{CE(sat)}$			-0.8	V
Transition frequency	V_{CE} = -5V, I_E = 0.5A, f = 30MHz	f_T		100		MHz
Output capacitancen	V_{CB} = -10V, I_E = 0A, f = 1MHz	C_{ob}			65	pF

PARAMETER	CONDITIONS	Symbol	Marking	Rank	MIN.	MAX.	UNIT
DC current gain	I_C = -0.5A, V_{CE} = -3V	H_{FE}	BCP	P	82	180	-
			BCQ	Q	120	270	
			BCR	R	180	390	

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■ Rating and characteristic curves

FIG.1-GROUNDED EMITTER PROPAGATION CHARACTERISTICS

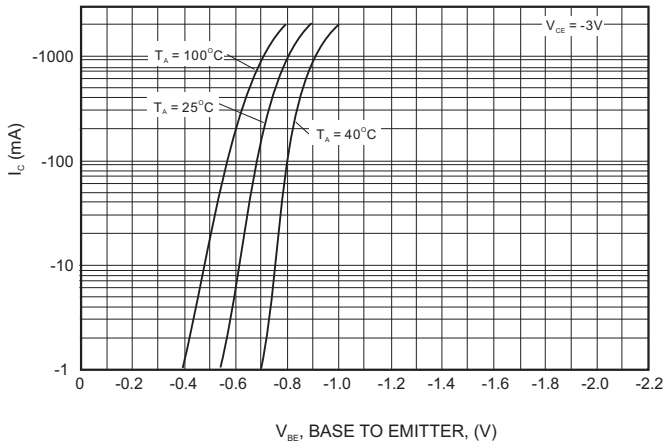


FIG.2-GROUNDED EMITTER OUTPUT CHARACTERISTICS

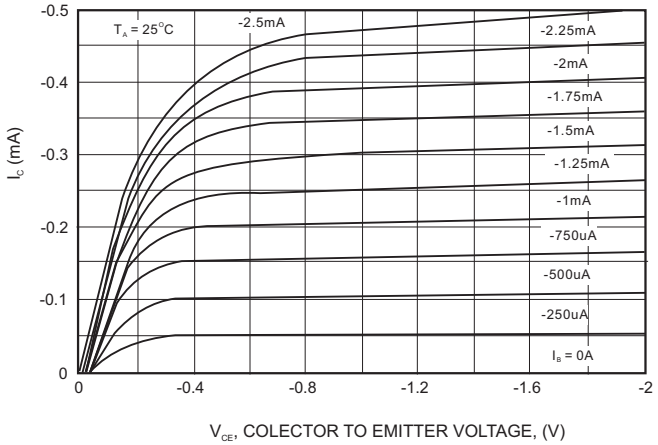


FIG.3-DC CURRENT GAIN vs COLLECTOR CURRENT

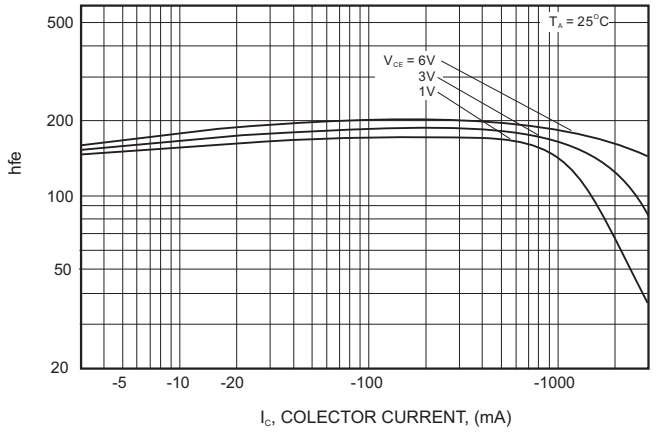


FIG.4-DC CURRENT GAIN vs COLLECTOR CURRENT

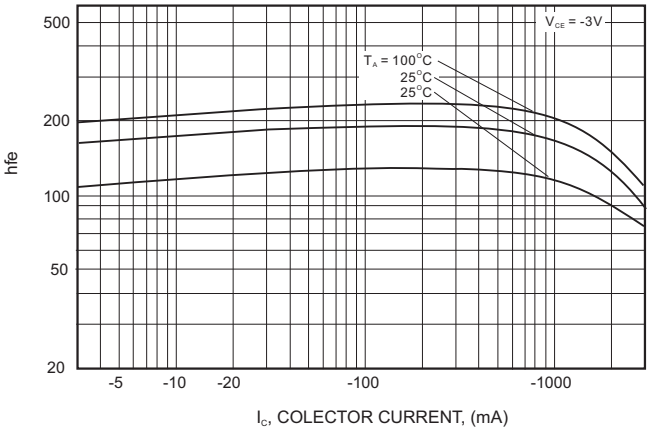


FIG.5-COLLECTOR-EMITTER SATURATION VOLTAGE vs COLLECTOR CURRENT

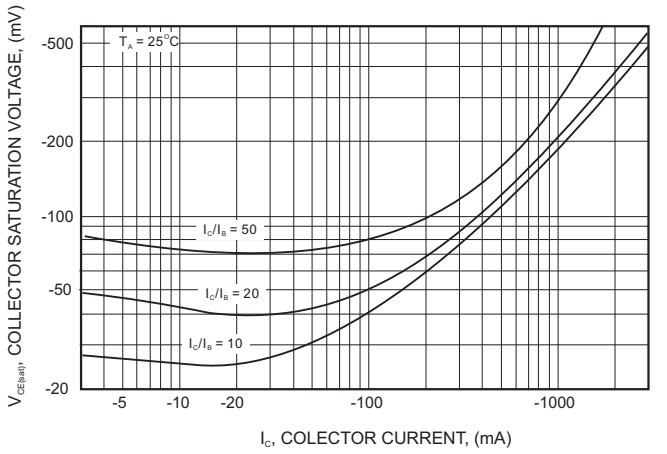
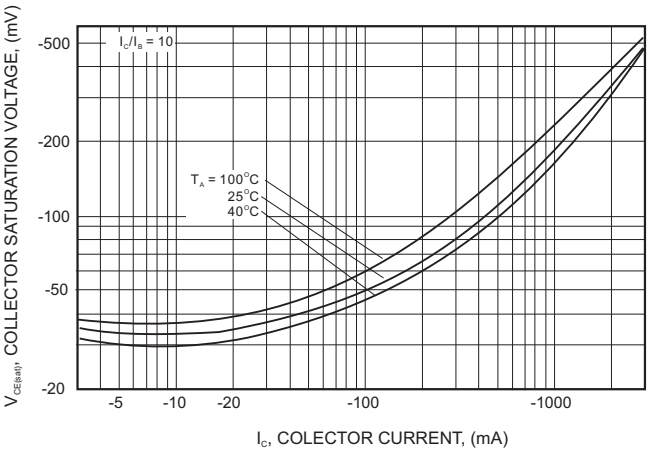


FIG.6-COLLECTOR-EMITTER SATURATION VOLTAGE vs COLLECTOR CURRENT



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■ Rating and characteristic curves

FIG.7-BASE-EMITTER SATURATION VOLTAGE vs COLLECTOR CURRENT

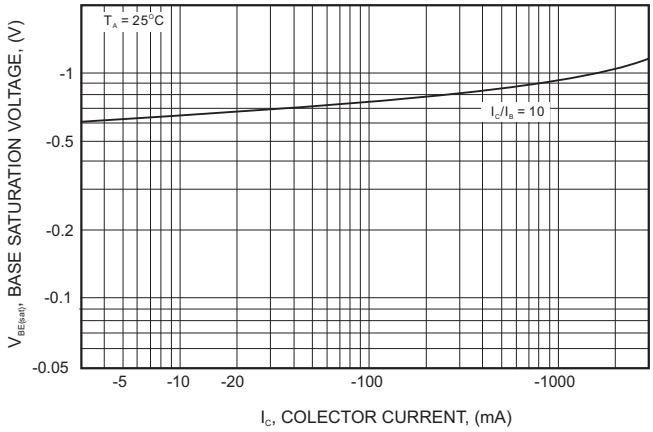


FIG.8-GAIN BANDWIDTH PRODUCT vs EMITTER CURRENT

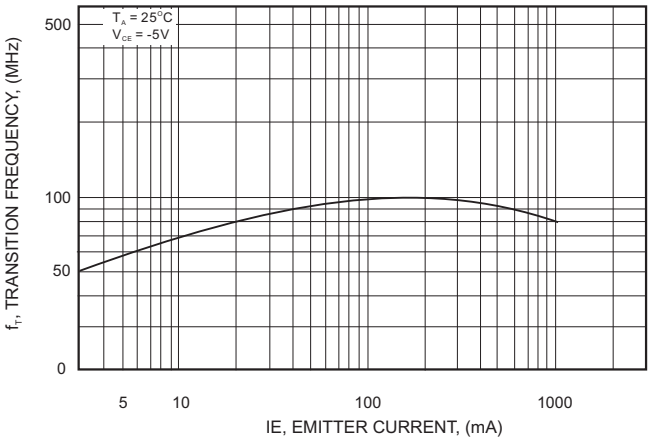


FIG.9-COLLECTOR OUTPUT CAPACITANCES vs COLLECTOR-BASE VOLTAGE
EMITTER INPUT CAPACITANCE vs EMITTER-BASE VOLTAGE

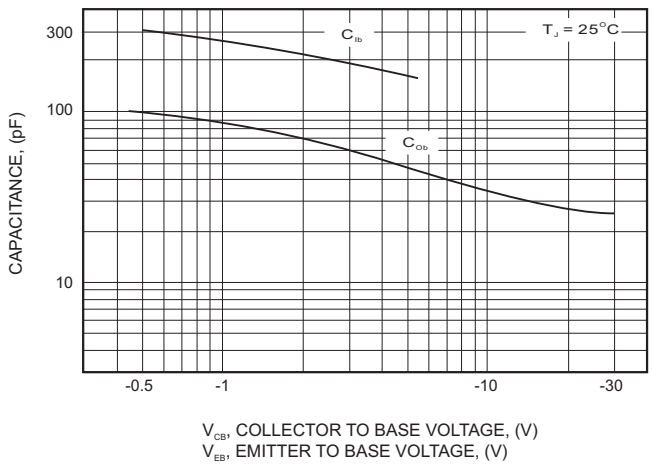
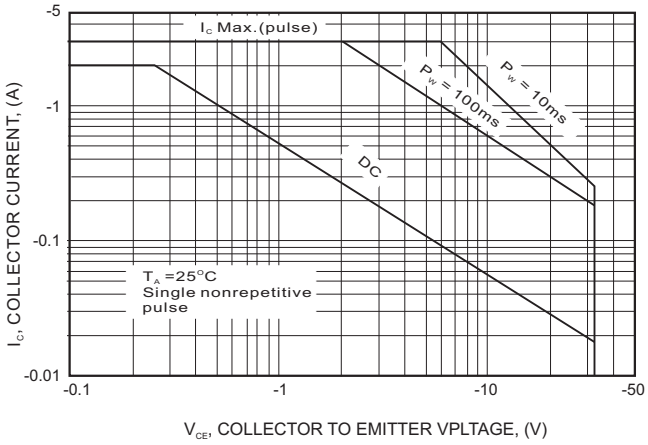


FIG.10-SAFE OPERATION AREA



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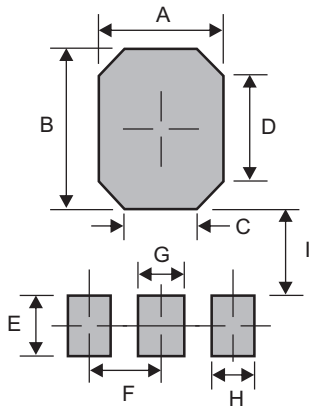
■ SOT-223 foot print



A	B	C	D	E	F	G	H	I
0.102 (2.60)	0.173 (4.40)	0.055 (1.40)	0.126 (3.20)	0.055 (1.40)	0.059 (1.50)	0.035 (0.90)	0.031 (0.80)	0.075 (1.90)

Dimensions in inches and (millimeters)

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