

SANYO

No.3174B

2SB1394/2SD2099

PNP/NPN Epitaxial Planar Silicon Transistors

Compact Motor Driver Applications

Features

- Contains input resistance(R_1), base to emitter resistance(R_{BE}).
- Contains diode between collector and emitter.
- Low saturation voltage.
- Large current capacity.
- Small-sized package making it easy to provide high-density, small-sized hybrid ICs.

(): 2SB1394

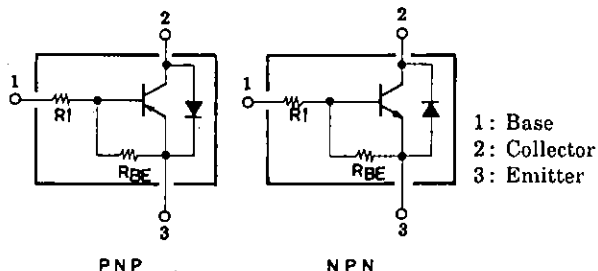
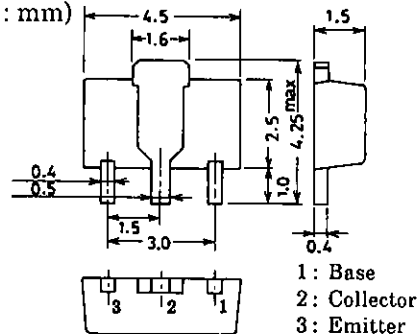
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

			unit
Collector to Base Voltage	V_{CBO}	(-)40	V
Collector to Emitter Voltage	V_{CEO}	(-)30	V
Emitter to Base Voltage	V_{EBO}	(-)6	V
Collector Current	I_C	(-)3	A
Collector Current(Pulse)	I_{CP}	(-)5	A
Collector Dissipation	P_C	Mounted on ceramic board ($250\text{mm}^2 \times 0.8\text{mm}$)	1.5 W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a = 25^\circ\text{C}$

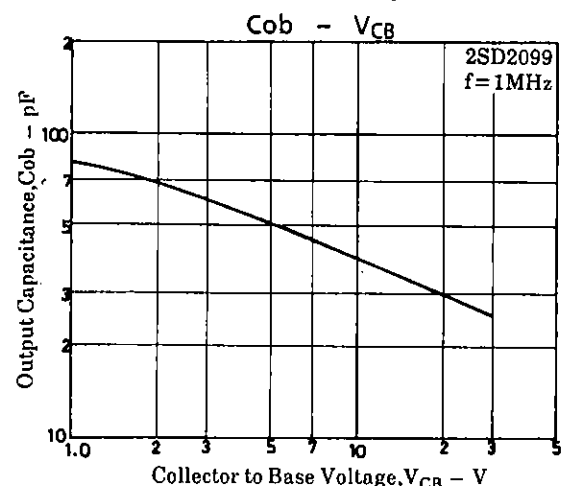
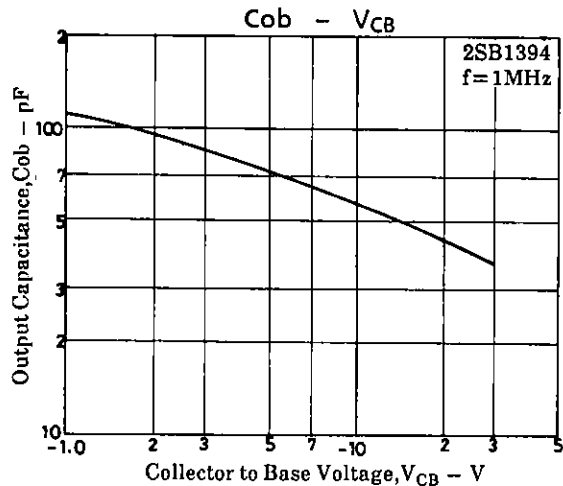
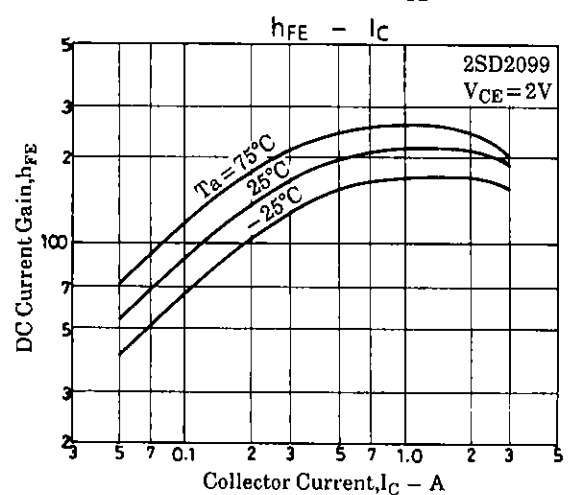
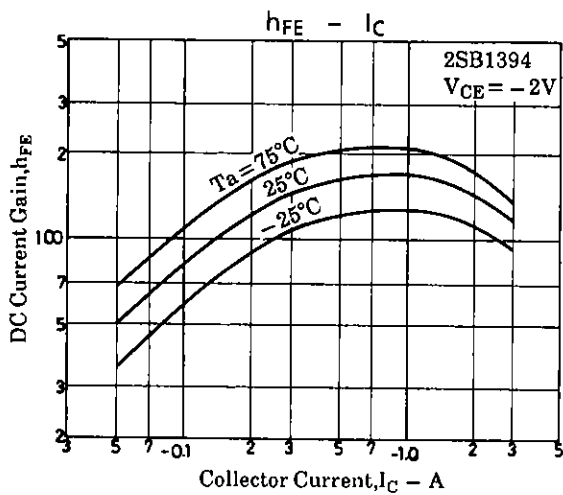
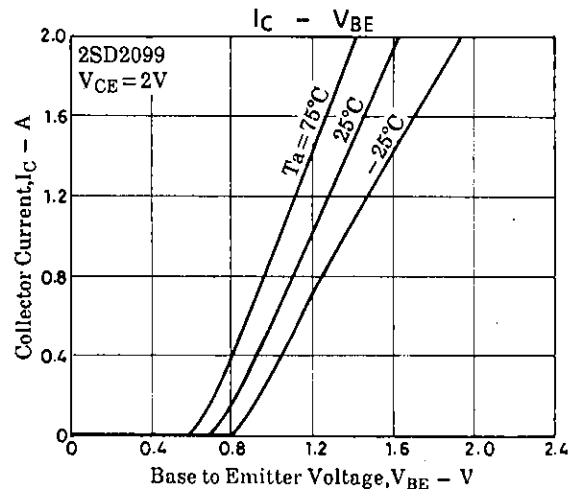
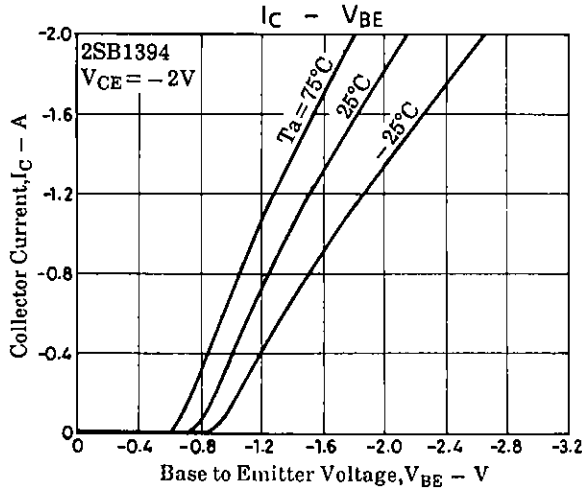
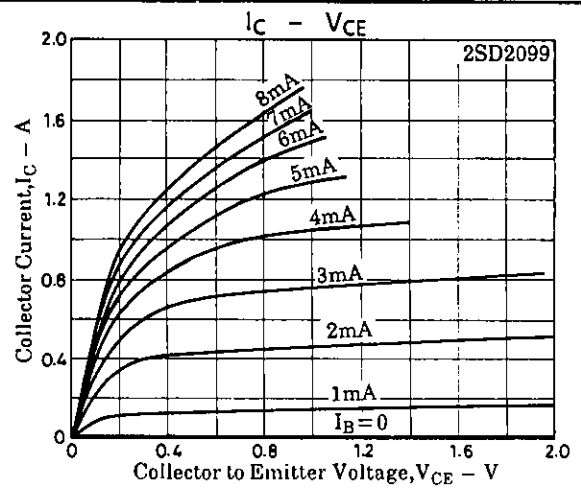
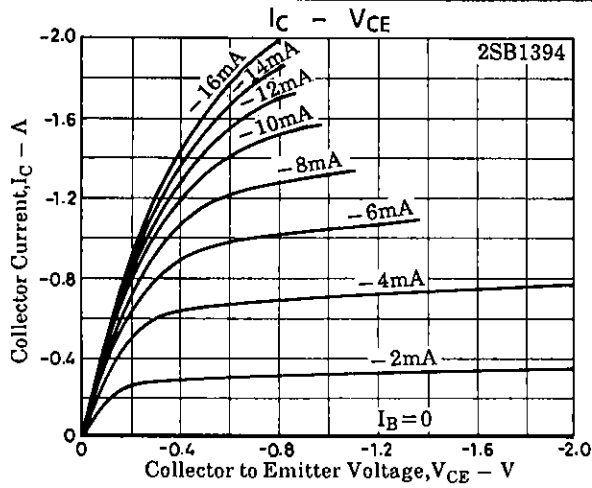
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)30\text{V}, I_E = 0$		(-)1.0		μA
DC Current Gain	$h_{FE}(1)$	$V_{CE} = (-)2\text{V}, I_C = (-)0.5\text{A}$	(-)70			
	$h_{FE}(2)$	$V_{CE} = (-)2\text{V}, I_C = (-)2\text{A}$	(-)50			
Gain-Bandwidth Product	f_T	$V_{CE} = (-)2\text{V}, I_C = (-)0.5\text{A}$		100		MHz
Output Capacitance	C_{ob}	$V_{CB} = (-)10\text{V}, f = 1\text{MHz}$		(55)40		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)1\text{A}, I_B = (-)50\text{mA}$		0.12	0.3	V
				(-0.18)(-0.4)		
B-E ON-State Voltage	$V_{BE(ON)}$	$V_{CE} = (-)2\text{V}, I_C = (-)1\text{A}$	(-)0.7	(-)1.5	(-)4.0	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu\text{A}, I_E = 0$	(-)40			V
C-E Breakdown Voltage	$V_{(BR)CEO(1)}$	$I_C = (-)10\mu\text{A}, R_{BE} = \infty$	(-)40			V
	$V_{(BR)CEO(2)}$	$I_C = (-)10\text{mA}, R_{BE} = \infty$	(-)30			V
Diode Forward Voltage	V_F	$I_F = 0.5\text{A}$			(-)1.5	V
Base to Emitter Resistance	R_{BE}			0.8		k Ω
Base Resistance	R_1		60	90	120	Ω

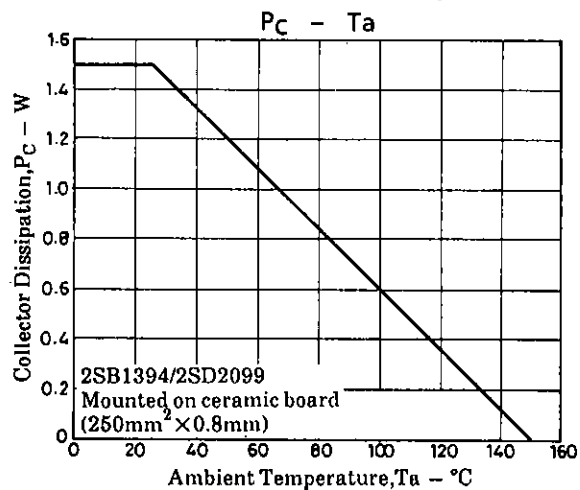
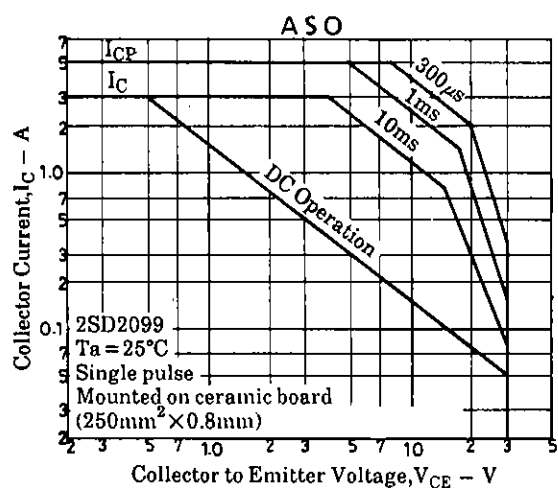
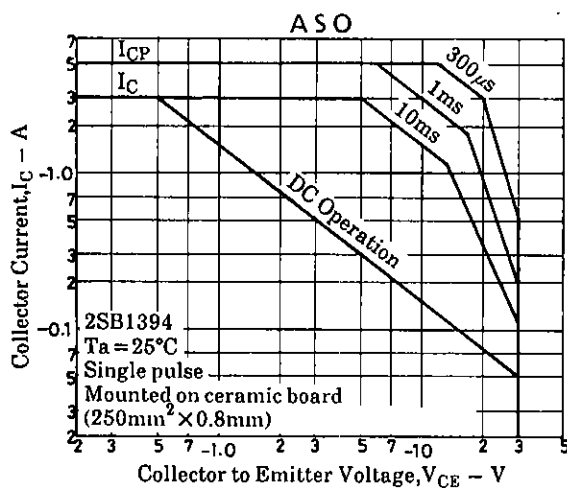
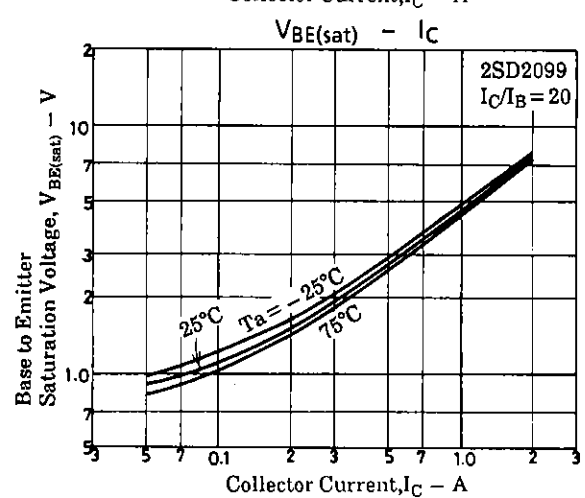
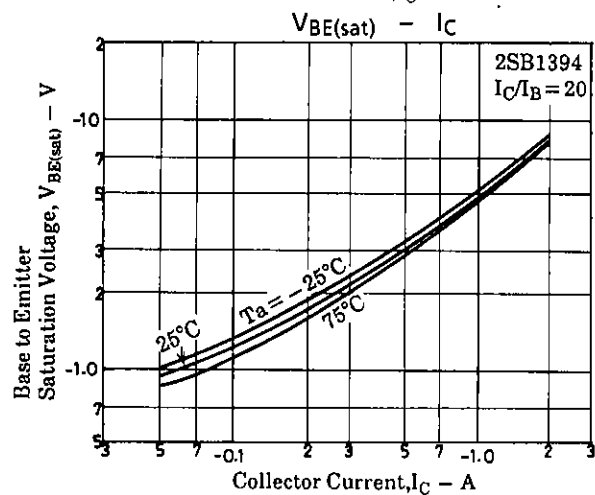
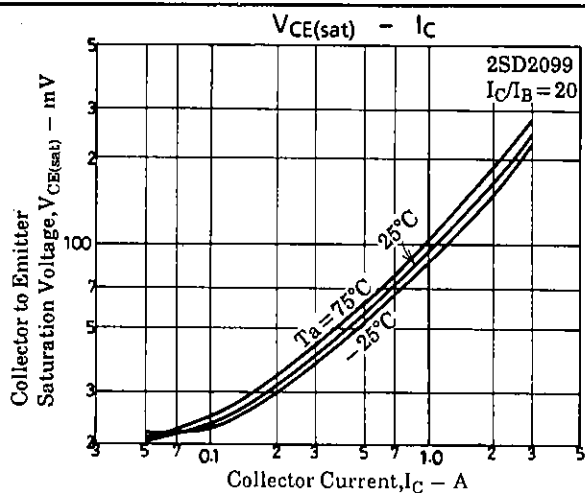
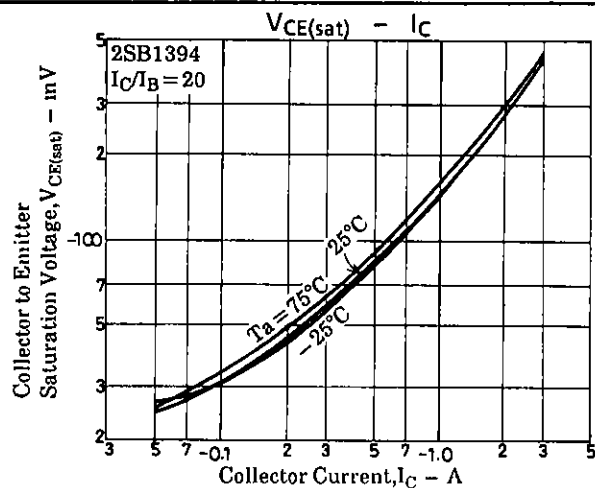
Marking 2SB1394: BN
2SD2099: DL

Electrical Connection**Package Dimensions 2038A**
(unit: mm)

SANYO: PCP
(Bottom View)

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