

SANYO	No.2046A	2SB1165/2SD1722
		PNP/NPN Epitaxial Planar Silicon Transistors
		50V/5A Switching Applications

Applications

- . Relay drivers, high-speed inverters, converters

Features

- . Low collector-to-emitter saturation voltage
- . High f_T
- . Excellent linearity of h_{FE}
- . Fast switching time

(): 2SB1165

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

			unit
Collector-to-Base Voltage	V_{CB0}	(-)60	V
Collector-to-Emitter Voltage	V_{CEO}	(-)50	V
Emitter-to-Base Voltage	V_{EBO}	(-)6	V
Collector Current	I_C	(-)5	A
Collector Current (Pulse)	I_{CP}	(-)8	A
Collector Dissipation	P_C	1.2	W
		$T_c=25^\circ C$	20
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature	T_{stg}	-55 to +150	$^\circ C$

Electrical Characteristics at $T_a=25^\circ C$

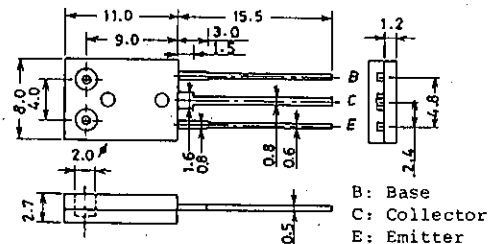
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)40V, I_E=0$	min	typ	max
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4V, I_C=0$			(-)1
DC Current Gain	$h_{FE}(1)$	$V_{CE}=(-)2V, I_C=(-)0.5A$	70		400*
	$h_{FE}(2)$	$V_{CE}=(-)2V, I_C=(-)4A$	35		
Gain-Bandwidth Product	f_T	$V_{CE}=(-)5V, I_C=(-)1A$		180	MHz
				(130)	MHz
Output Capacitance	c_{ob}	$V_{CB}=(-)10V, f=1MHz$		40	pF
				(60)	pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)3A, I_B=(-)0.15A$		220	400
				(-280)	(-550)
					mV

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*: The 2SB1165/2SD1722 are classified by 0.5A h_{FE} as follows:

70	Q	140	100	R	200	140	S	280	200	T	400
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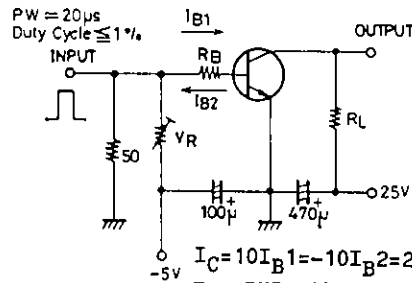
Package Dimensions 2043A
(unit:mm)



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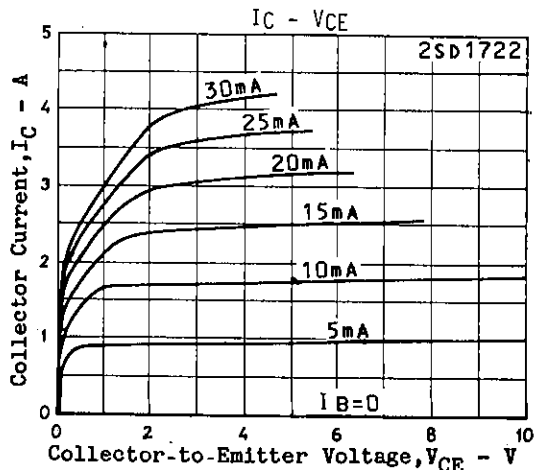
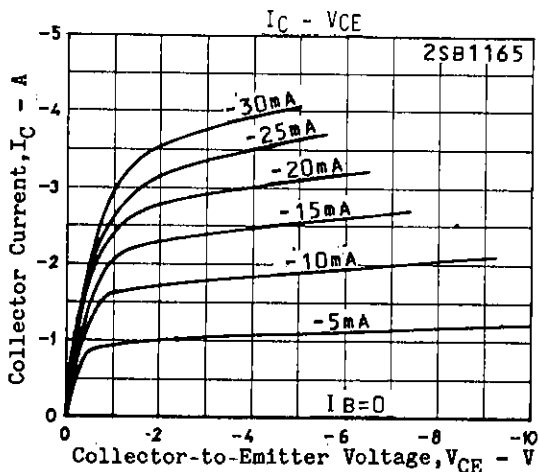
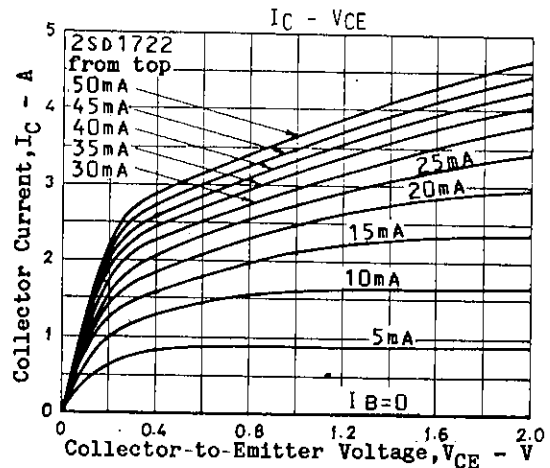
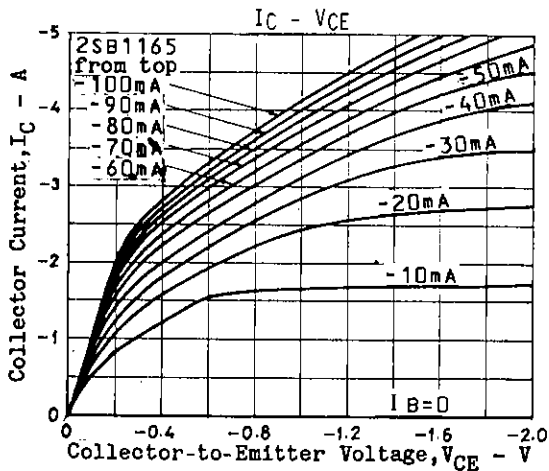
			min	typ	max	unit
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)3A, I_B = (-)0.15A$	(-)0.95	(-)1.3		V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0$	(-)6			V
Turn-on Time	t_{on}	See specified Test Circuit.		50		ns
				(50)		ns
Storage Time	t_{stg}	"		500		ns
				(450)		ns
Fall Time	t_f	"		20		ns
				(20)		ns

Switching Time Test Circuit

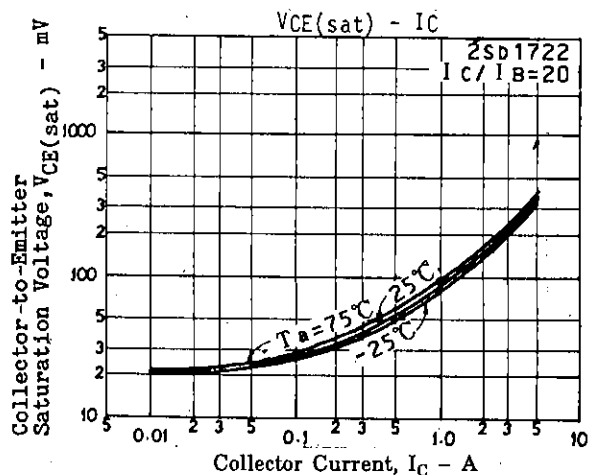
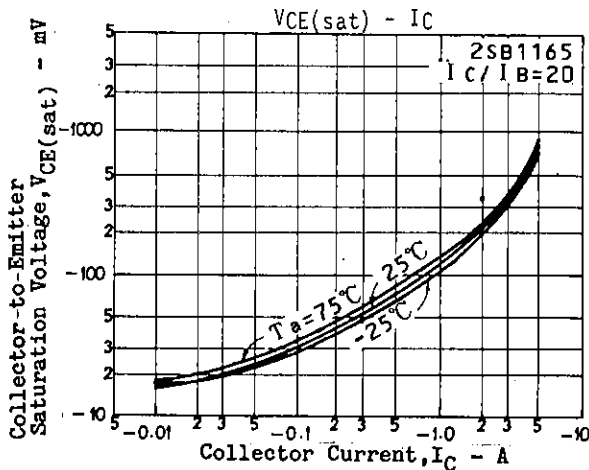
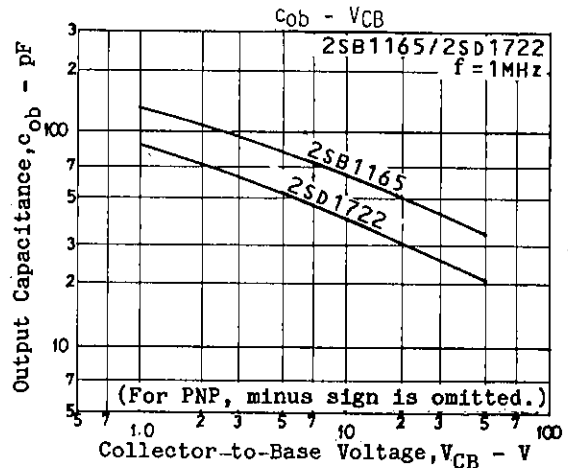
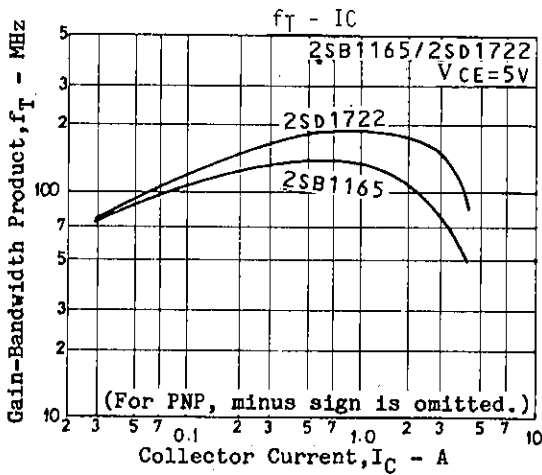
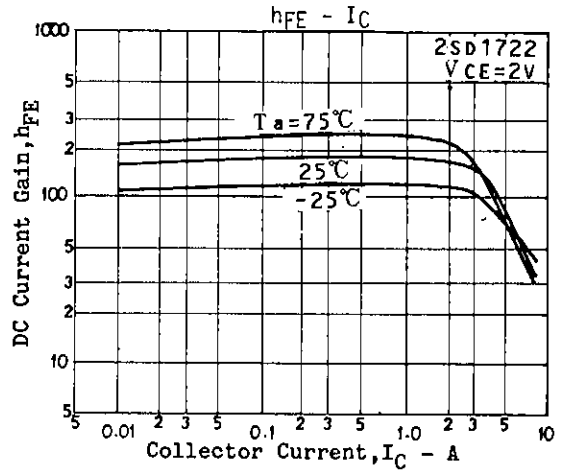
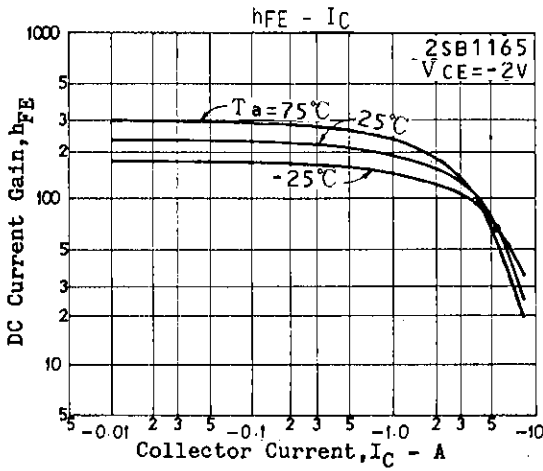
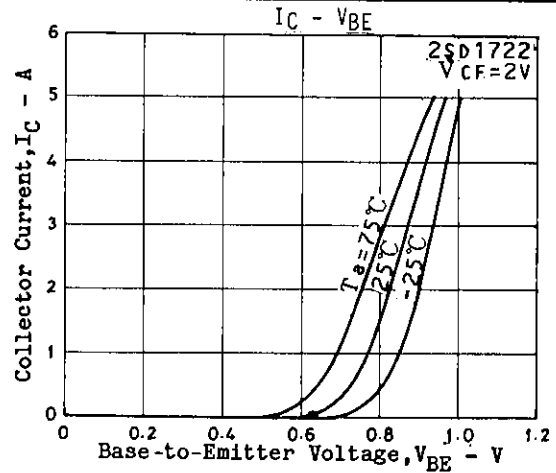
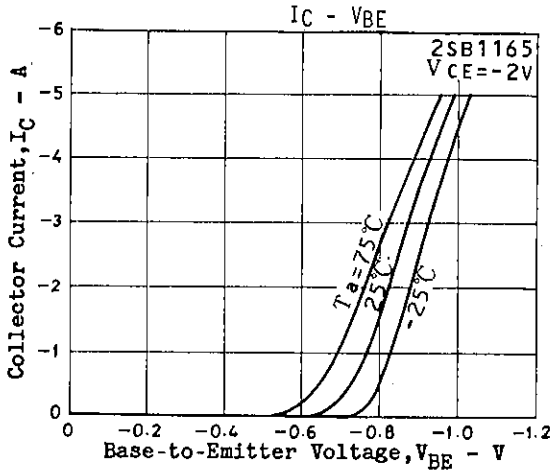


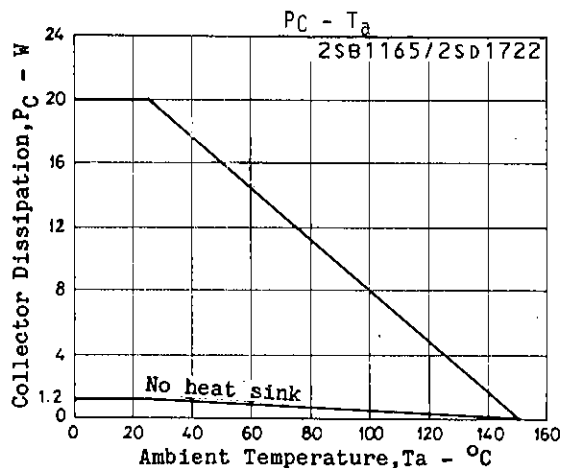
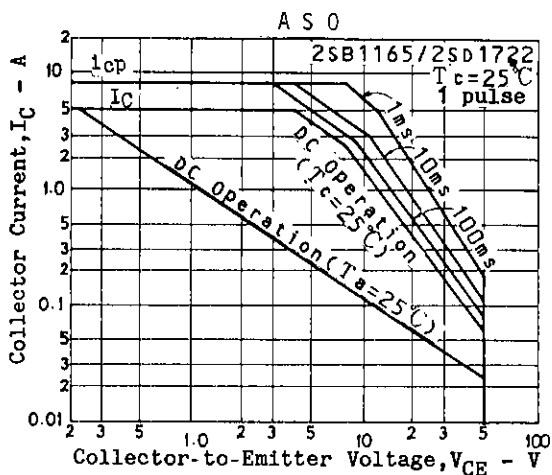
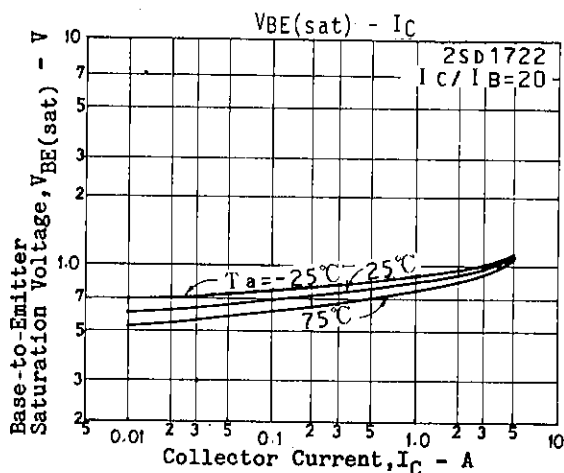
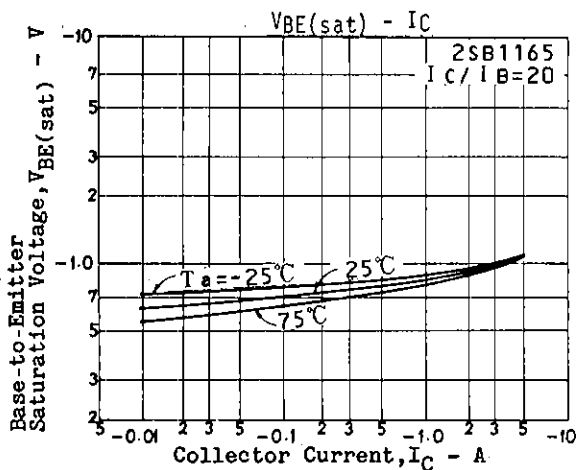
For PNP, the polarity is reversed.

Unit (Resistance : Ω, Capacitance : F)



2SB1165/2SD1722





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