



High-h_{FE} AF Amplifier Applications

Applications

- AF amplifier, various drivers.

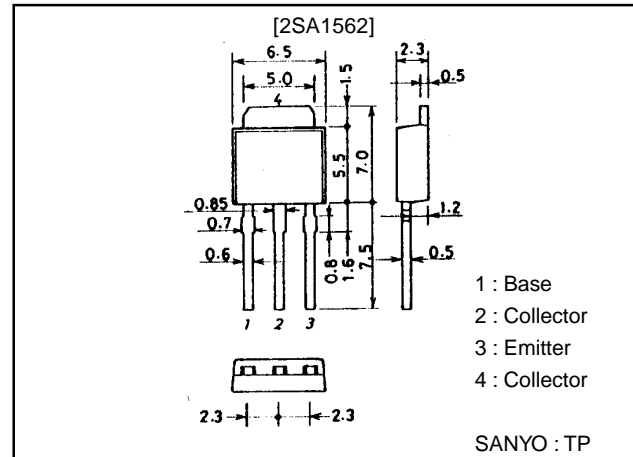
Features

- Adoption of MBIT process.
- High DC current gain.
- Large current capacity.
- Low collector-to-emitter saturation voltage.
- High V_{EBO} .

Package Dimensions

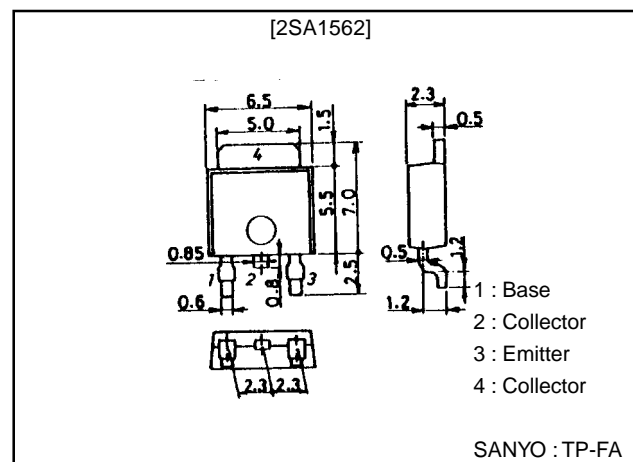
unit:mm

2045B



unit:mm

2044B



Specifications

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

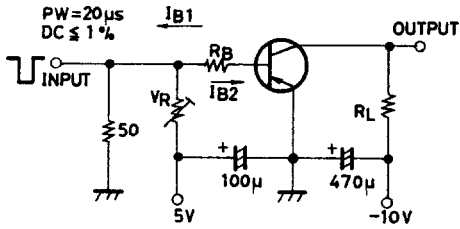
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		-30	V
Collector-to-Emitter Voltage	V_{CE0}		-25	V
Emitter-to-Base Voltage	V_{EBO}		-15	V
Collector Current	I_C		-1.2	A
Collector Current (Pulse)	I_{CP}		-2	A
Collector Dissipation	P_C		1	W
		$T_c=25^\circ\text{C}$	15	W
Junction Temperature	T_J		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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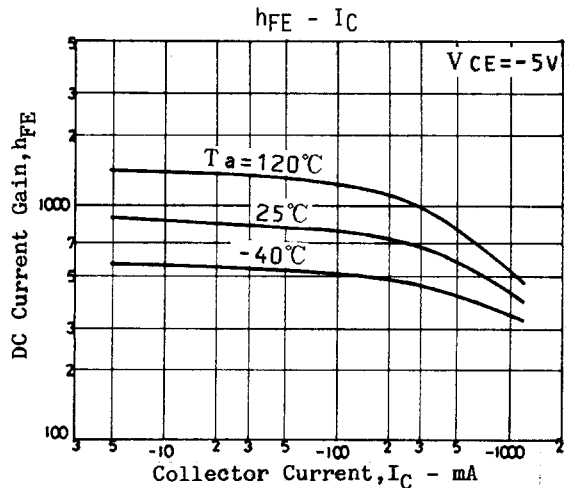
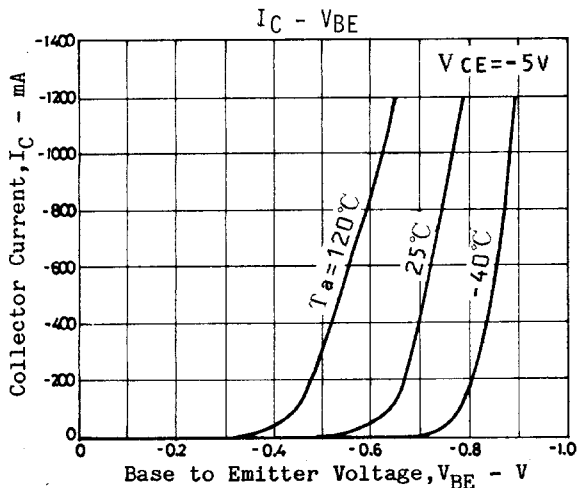
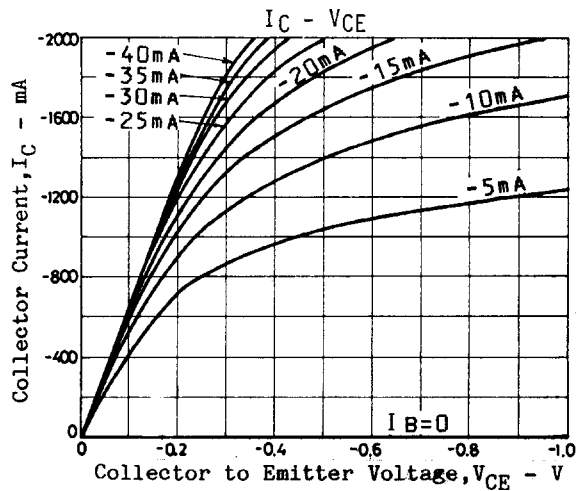
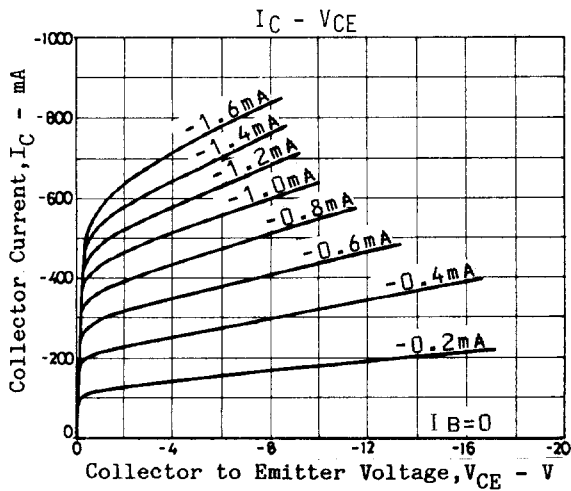
Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = -20\text{V}, I_E = 0$			-1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -10\text{V}, I_C = 0$			-1	μA
DC Current Gain	h_{FE1}	$V_{CE} = -5\text{V}, I_C = -100\text{mA}$	500	800	1200	
	h_{FE2}	$V_{CE} = -5\text{V}, I_C = -10\text{mA}$	350			
Gain-Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = -50\text{mA}$		130		MHz
Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}, f = 1\text{MHz}$		40		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -500\text{mA}, I_B = -10\text{mA}$		-0.1	-0.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -500\text{mA}, I_B = -10\text{mA}$		-0.78	-1.1	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\text{A}, I_E = 0$	-30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, R_{BE} = \infty$	-25			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	-15			V
Turn-ON Time	t_{on}	See specified Test Circuit.		0.31		μs
Storage Time	t_{stg}	See specified Test Circuit.		0.88		μs
Fall Time	t_f	See specified Test Circuit.		0.23		μs

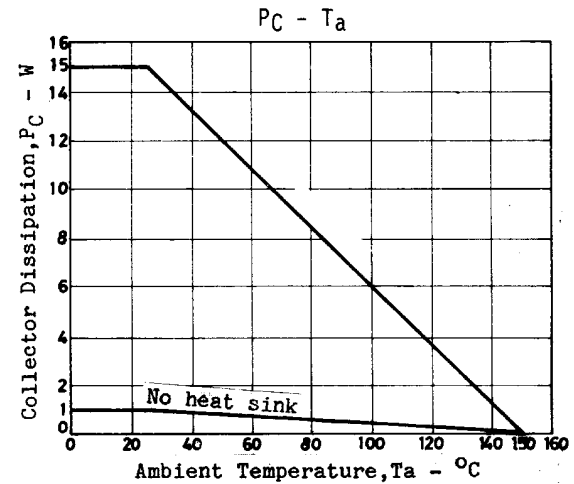
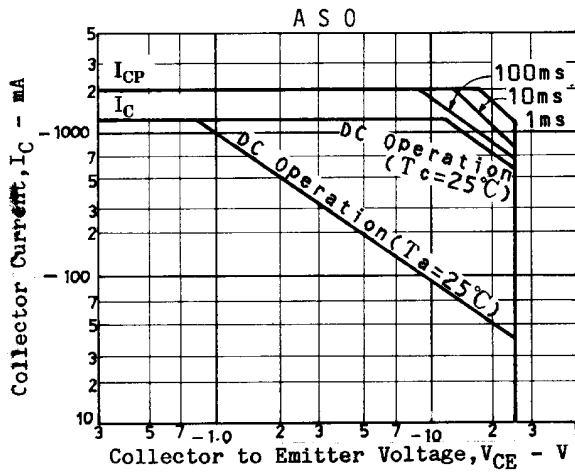
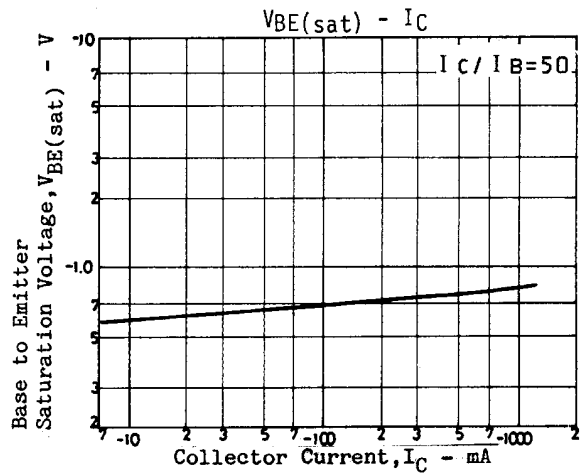
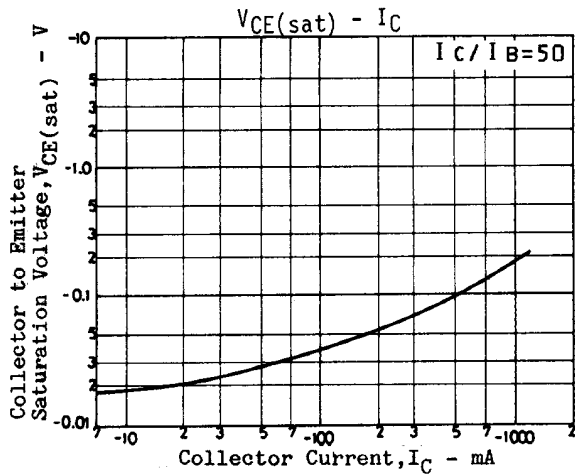
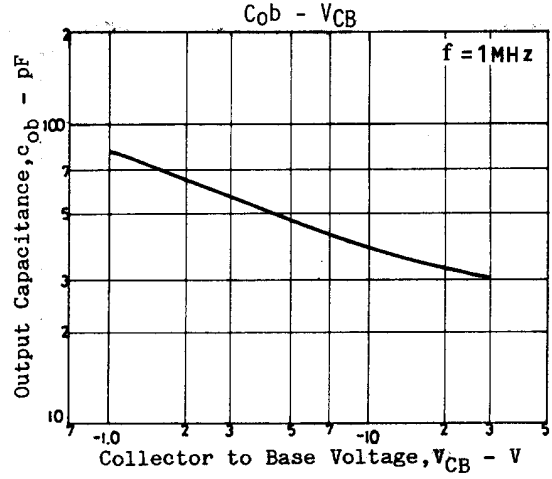
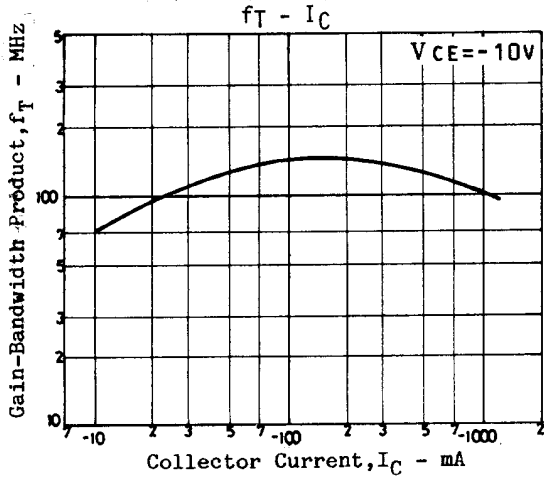
Switching Time Test Circuit



$-100 I_{B1} = 100 I_{B2} = I_C = -700\text{mA}$
Unit (resistance : Ω , capacitance : F)



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