

**2SC3820****High h_{FE} , AF Amplifier Applications****Applications**

- Drivers, muting circuits.

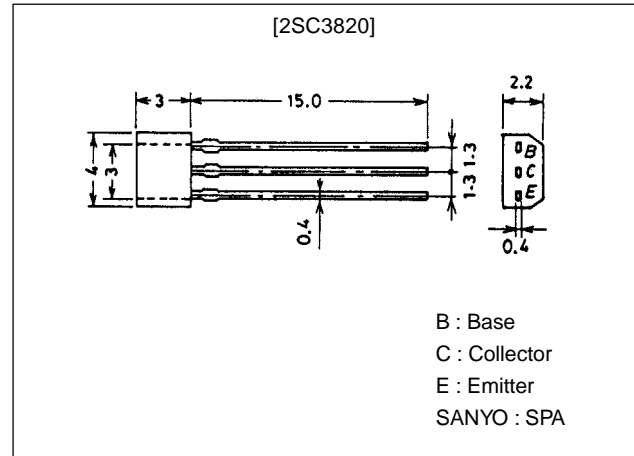
Features

- Adoption of FBET and MBIT processes.
- High DC current gain ($h_{FE}=800$ to 3200).
- Low collector-to-emitter saturation voltage ($V_{CE(sat)} \leq 0.5V$).
- High V_{EBO} ($V_{EBO} \geq 15V$).
- Small C_{ob} ($C_{ob}=2.0pF$ typ).

Package Dimensions

unit:mm

2033

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		60	V
Collector-to-Emitter Voltage	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		15	V
Collector Current	I_C		100	mA
Collector Current (Pulse)	I_{CP}		200	mA
Collector Dissipation	P_C		300	mW
Junction Temperature	T_J		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=40V, I_E=0$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=10V, I_C=0$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=5V, I_C=10mA$	800	1500	3200	
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=10mA$		200		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		2.0		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=50mA, I_B=1mA$		0.1	0.5	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=50mA, I_B=1mA$		0.8	1.1	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	15			V

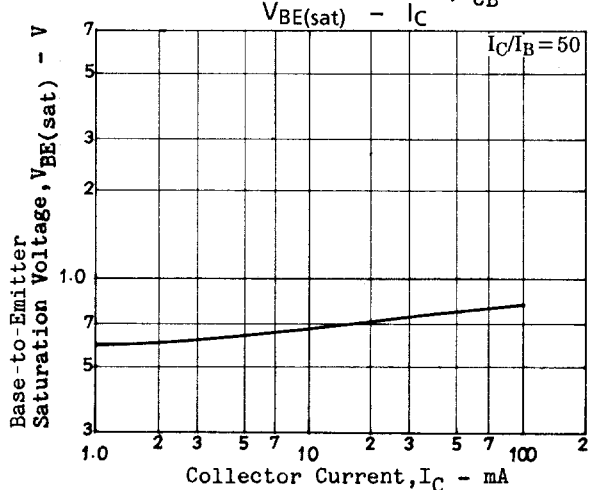
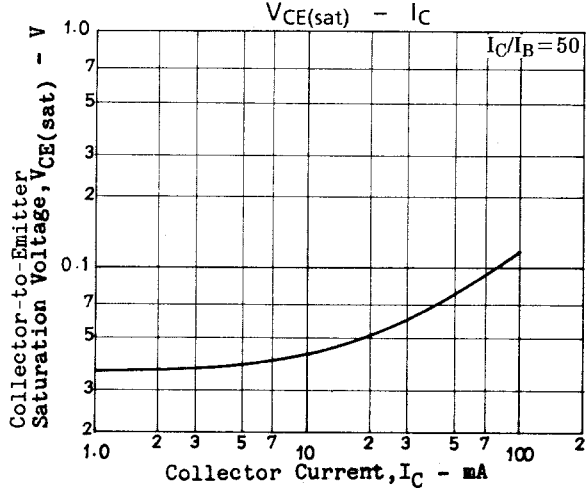
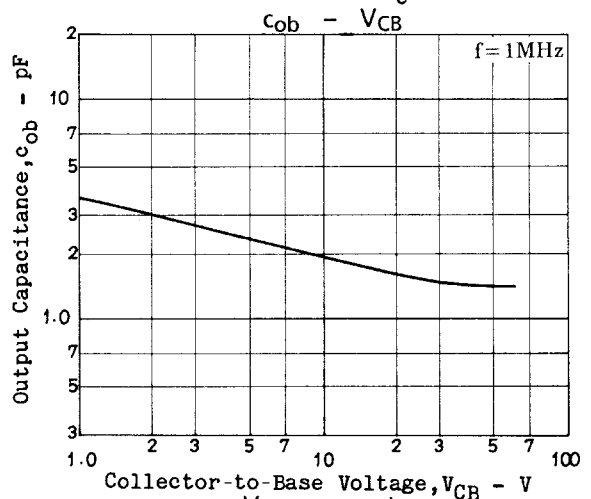
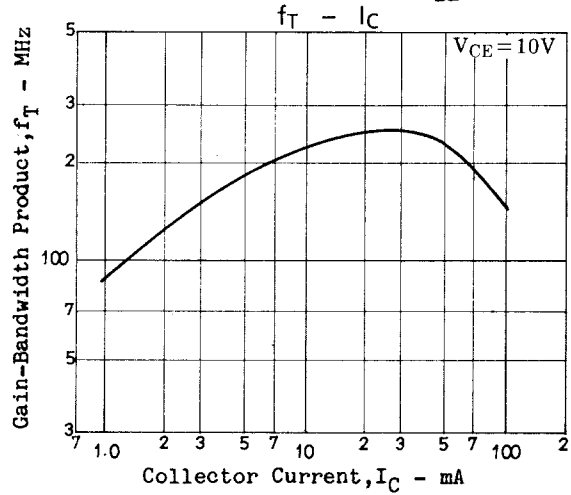
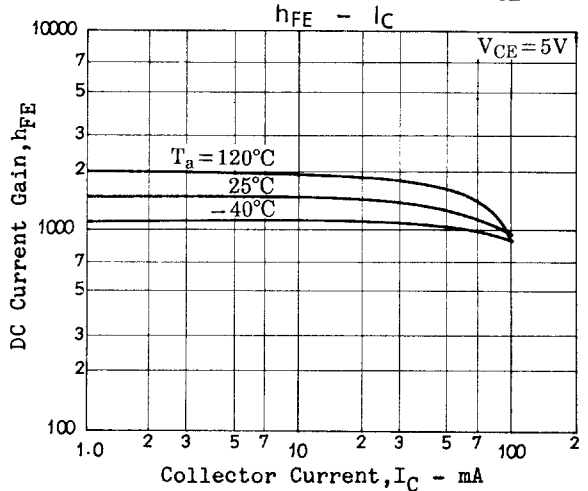
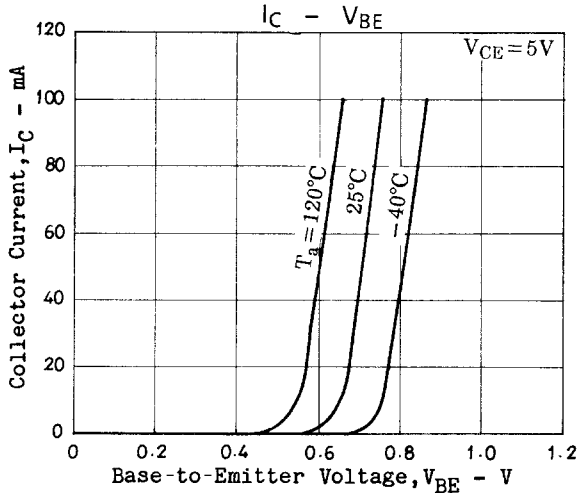
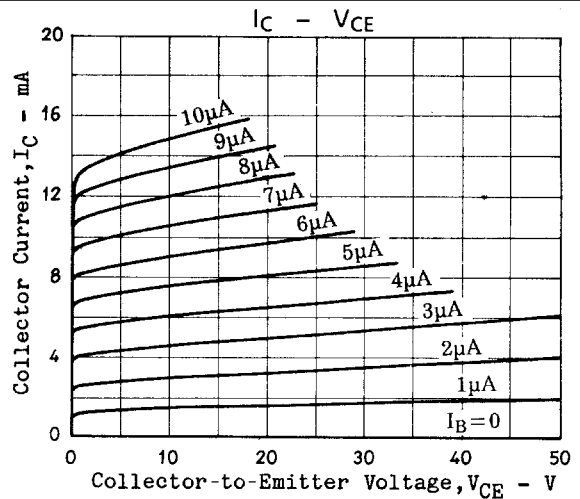
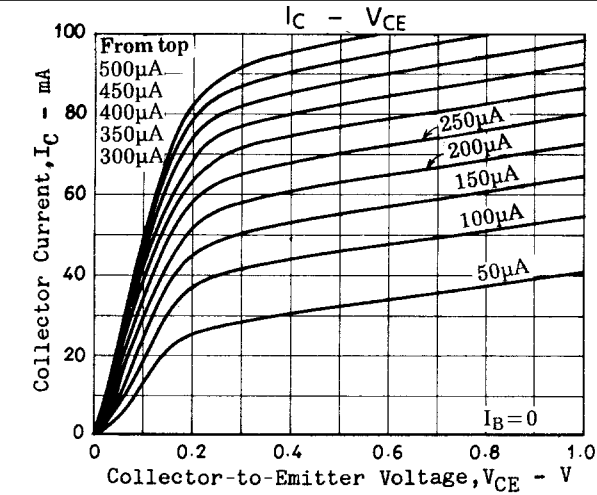
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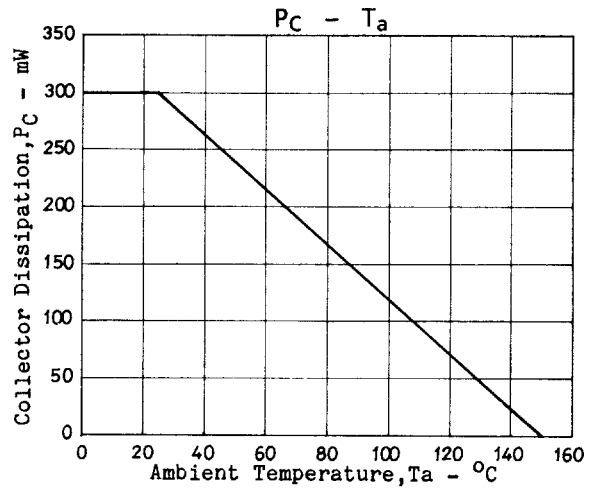
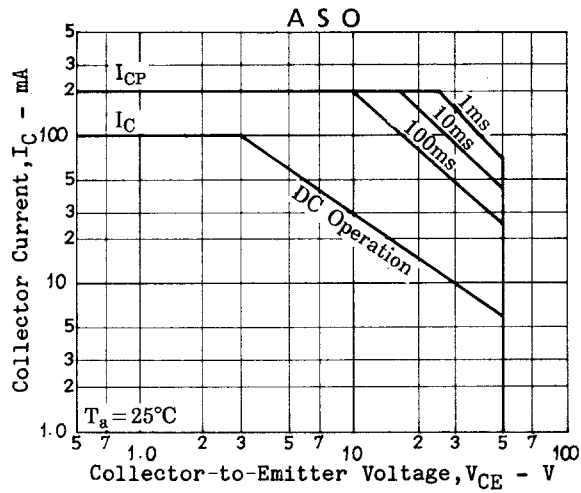
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