

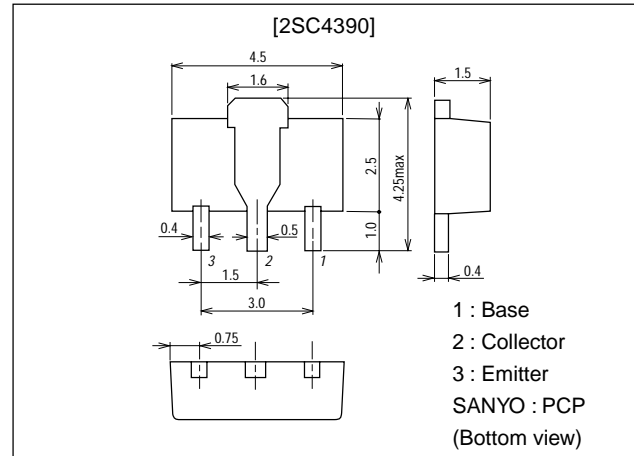
**2SC4390****High-h_{FE}, AF Amplifier Applications****Features**

- Adoption of MBIT process.
- High DC current gain ($h_{FE}=800$ to 3200).
- Large current capacity ($I_C=2A$).
- Low collector-to-emitter saturation voltage ($V_{CE(sat)}\leq 0.3V$).
- High V_{EBO} ($V_{EBO}\geq 15V$).

Package Dimensions

unit:mm

2038A

**Specifications****Absolute Maximum Ratings at Ta = 25°C**

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		20	V
Collector-to-Emitter Voltage	V_{CEO}		10	V
Emitter-to-Base Voltage	V_{EBO}		15	V
Collector Current	I_C		2	A
Collector Current (Pulse)	I_{CP}		4	A
Base Current	I_B		0.4	A
Collector Dissipation	P_C		500	mW
		Mounted on ceramic board (250mm ² ×0.8mm)	1.3	W
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=15V, I_E=0$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=10V, I_C=0$			0.1	μA
DC Current Gain	h_{FE1}	$V_{CE}=2V, I_C=500mA$	800	1500	3200	
	h_{FE2}	$V_{CE}=2V, I_C=2A$	400			
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=50mA$		260		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		28		pF

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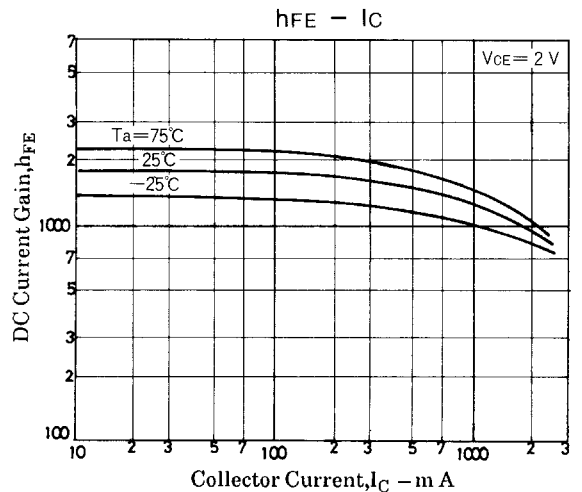
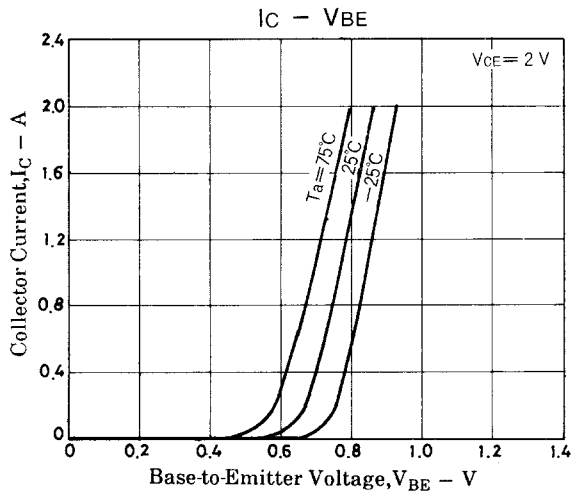
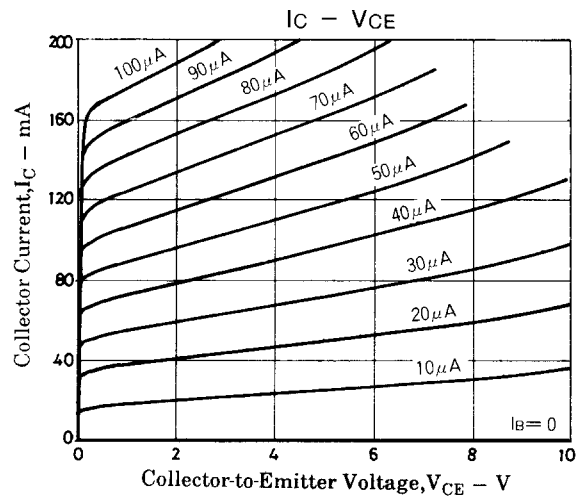
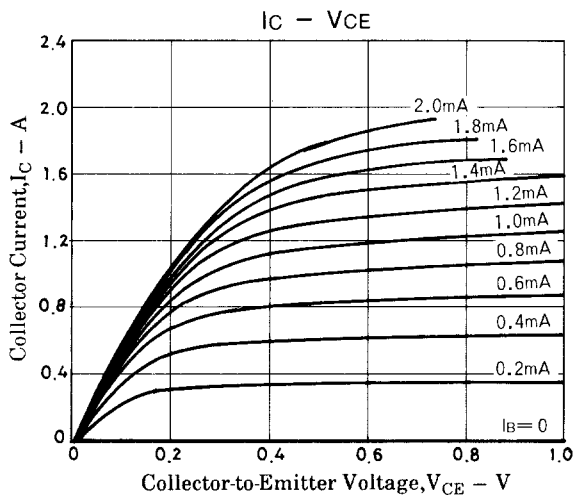
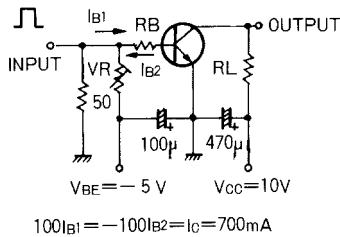
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1A, I_B=20mA$		0.11	0.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1A, I_B=20mA$		0.87	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	20			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	10			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	15			V
Turn-on Time	t_{on}	See specified Test Circuit.		0.13		μs
Storage Time	t_{stg}	See specified Test Circuit.		0.8		μs
Fall Time	t_f	See specified Test Circuit.		0.1		μs

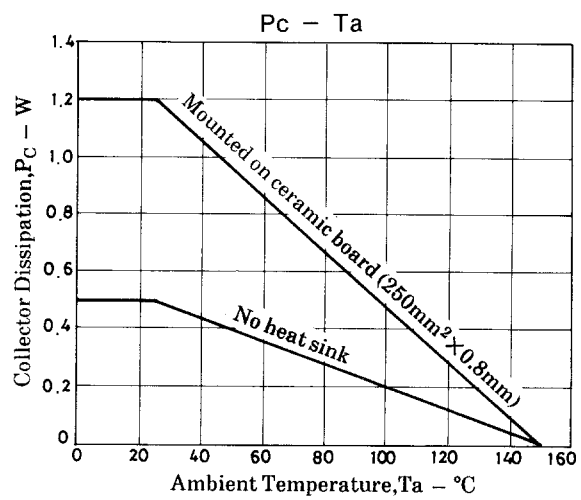
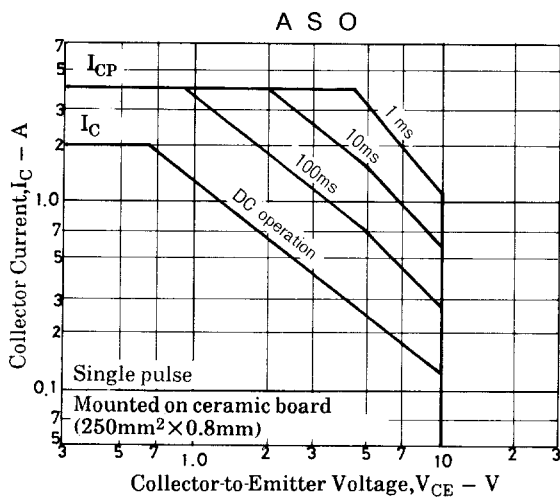
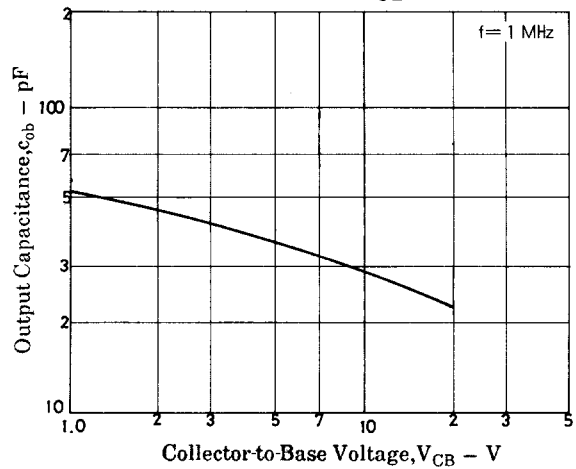
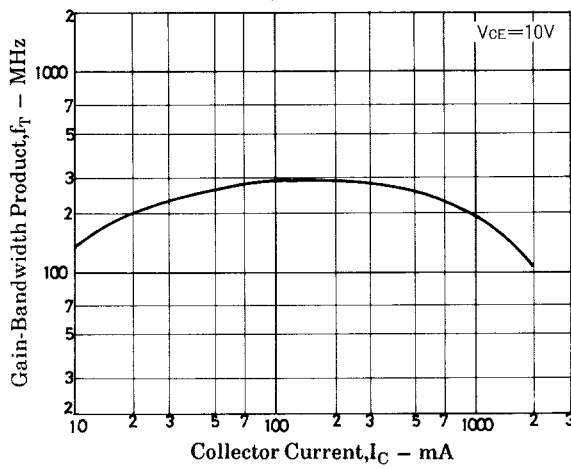
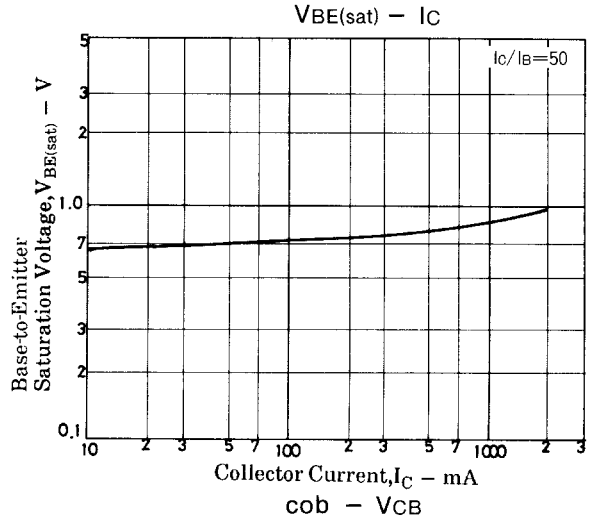
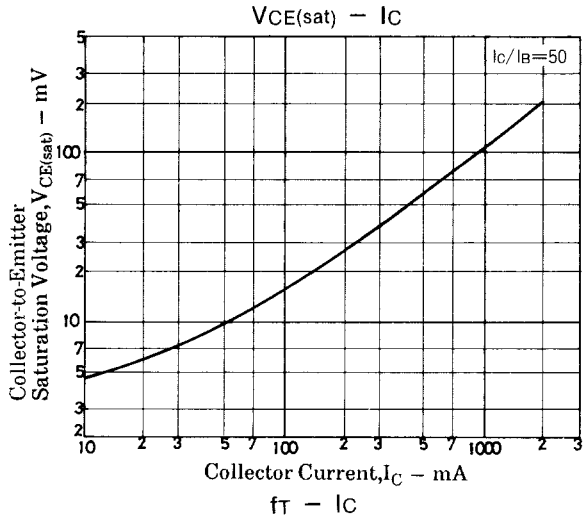
Switching Time Test Circuit

PW = 20 μ s

DC \leq 1%



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