

NPN Epitaxial Planar Silicon Transistor



2SC5070

Low-Frequency General-Purpose Amplifier, Driver Applications

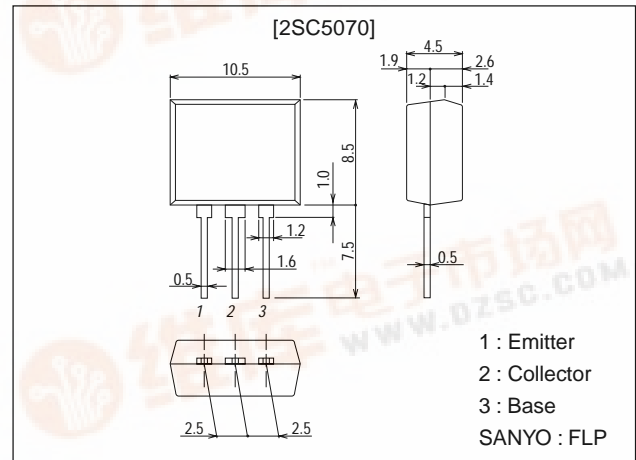
Features

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

Package Dimensions

unit:mm

2084A



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_{CEO}		25	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		1.5	W
Junction Temperature	T_J		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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

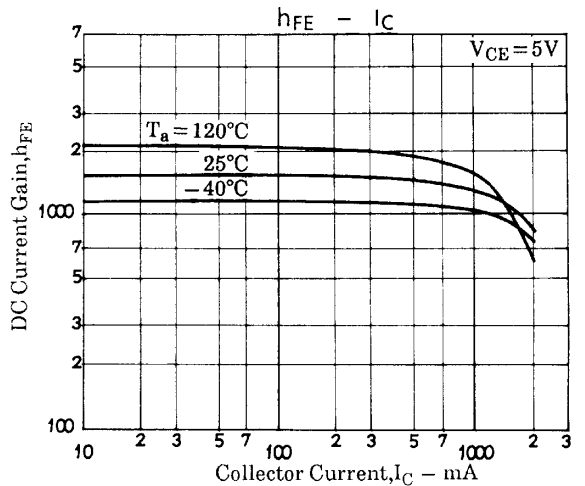
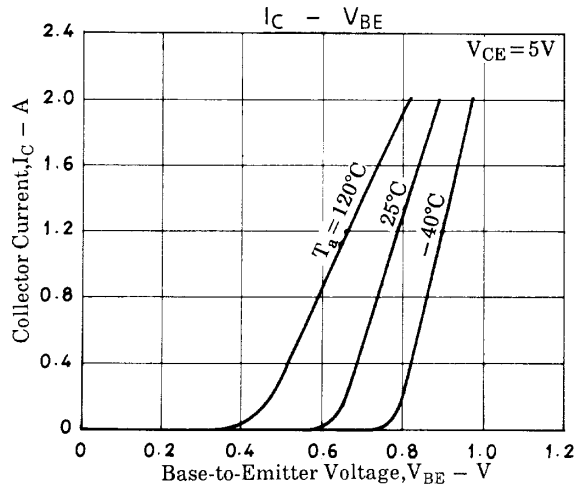
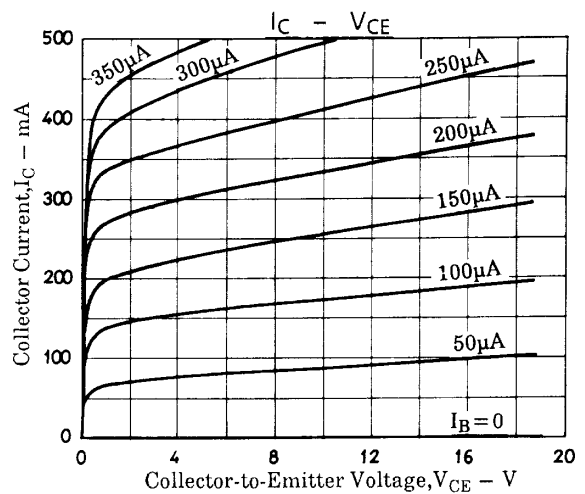
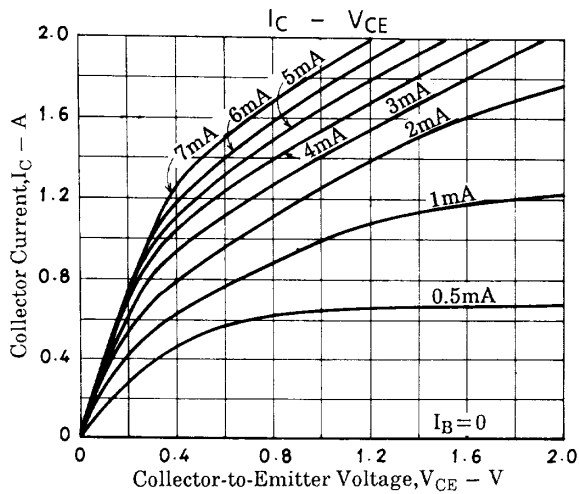
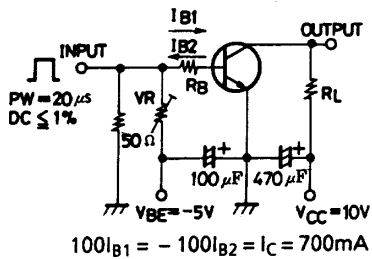
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=20\text{V}, I_E=0$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=10\text{V}, I_C=0$			100	nA
DC Current Gain	h_{FE1}	$V_{CE}=5\text{V}, I_C=500\text{mA}$	800	1500	3200	
	h_{FE2}	$V_{CE}=5\text{V}, I_C=1\text{A}$	600			
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}$		260		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		27		pF

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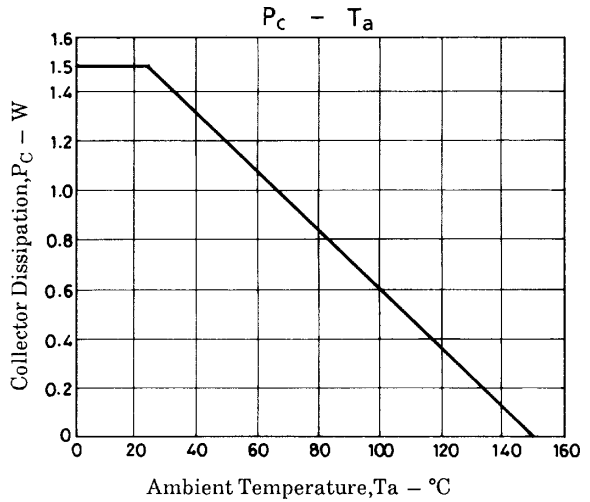
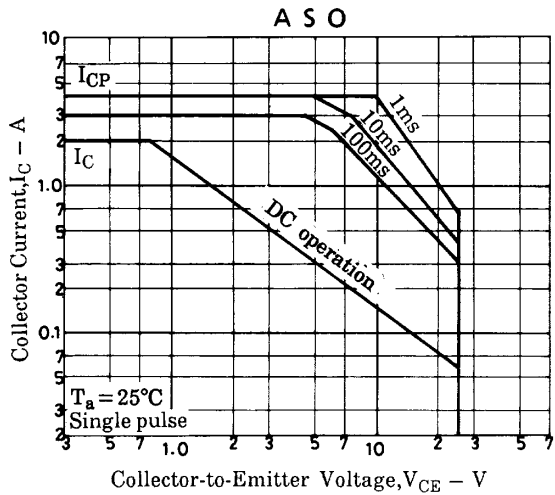
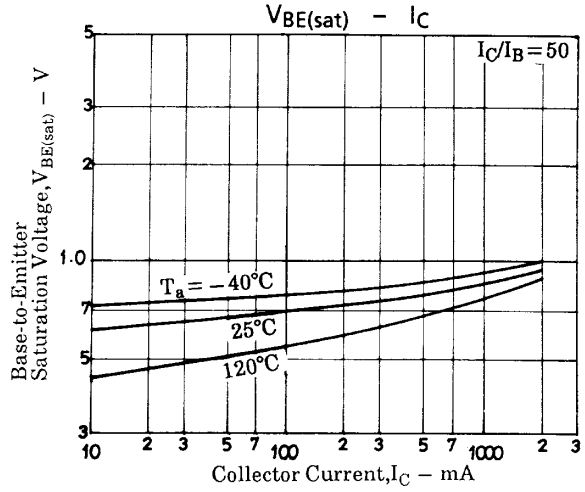
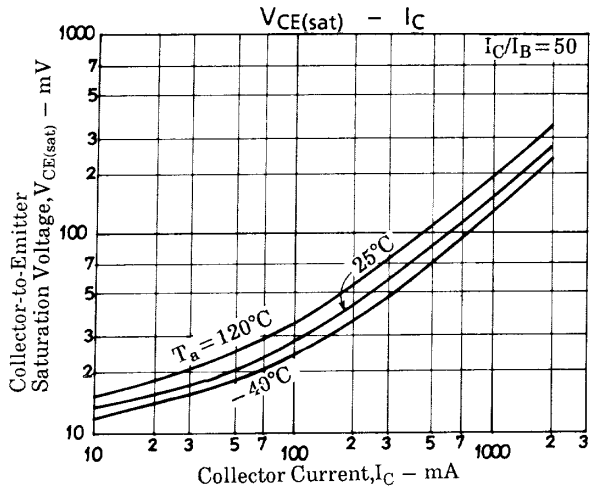
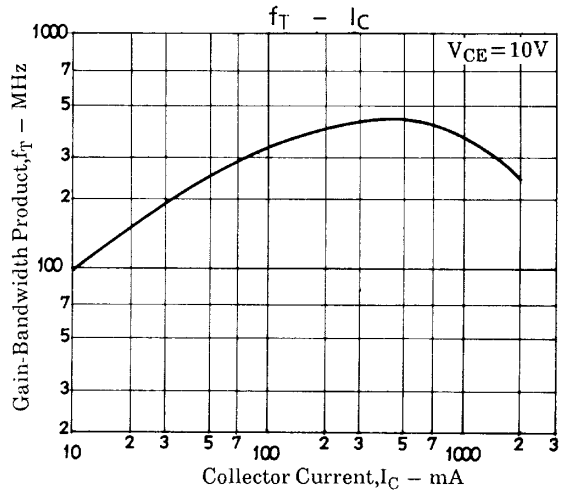
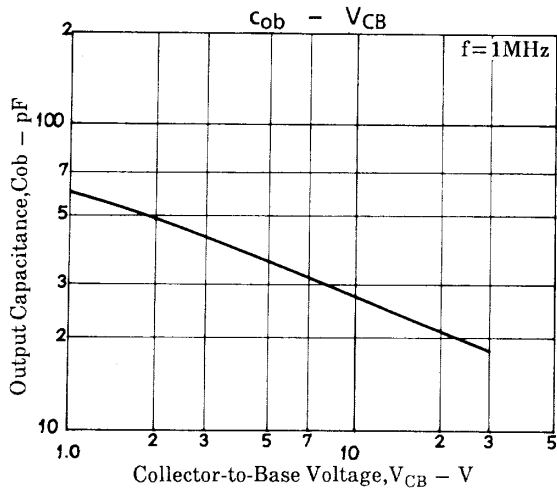
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1A, I_B=20mA$		0.15	0.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1A, I_B=20mA$		0.85	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	25			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		0.14		μs
Storage Time	t_{stg}	See specified Test Circuit		1.35		μs
Fall Time	t_f	See specified Test Circuit		0.1		μs

Switching Time Test Circuit



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