NPN Epitaxial Planar Silicon Transistor

2SC5070



# Low-Frequency General-Purpose Amplifier, Driver Applications

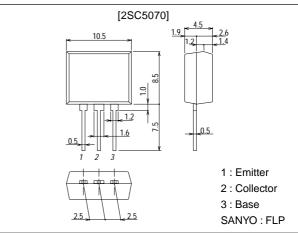
### Features

- · High current capacity.
- $\cdot$  Adoption of MBIT process.
- · High DC current gain.
- $\cdot$  Low collector-to-emitter saturation voltage.
- $\cdot$  High V<sub>EBO</sub>.

## Package Dimensions

unit:mm

#### 2084A



# **Specifications**

### Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CBO</sub>		30	V
Collector-to-Emitter Voltage	VCEO		25	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		15	V
Collector Current	ΙC		2	Α
Collector Current (Pulse)	ICP		4	Α
Base Current	Ι <sub>Β</sub>		0.4	Α
Collector Dissipation	PC		1.5	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

### **Electrical Characteristics at Ta = 25°C**

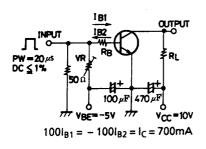
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Onit
Collector Cutoff Current	ICBO	V <sub>CB</sub> =20V, I <sub>E</sub> =0			100	nA
Emitter Cutoff Current	IEBO	V <sub>EB</sub> =10V, I <sub>C</sub> =0			100	nA
DC Current Gain	h <sub>FE</sub> 1	$V_{CE}=5V, I_{C}=500$ mA	800	1500	3200	
	h <sub>FE</sub> 2	V <sub>CE</sub> =5V, I <sub>C</sub> =1A	600			
Gain-Bandwidth Product	fT	V <sub>CE</sub> =10V, I <sub>C</sub> =50mA		260		MHz
Output Capacitance	Cob	V <sub>CB</sub> =10V, f=1MHz		27		pF

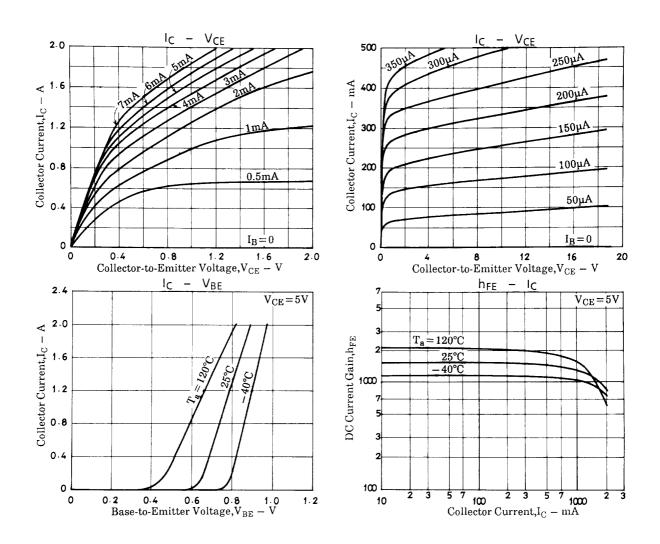
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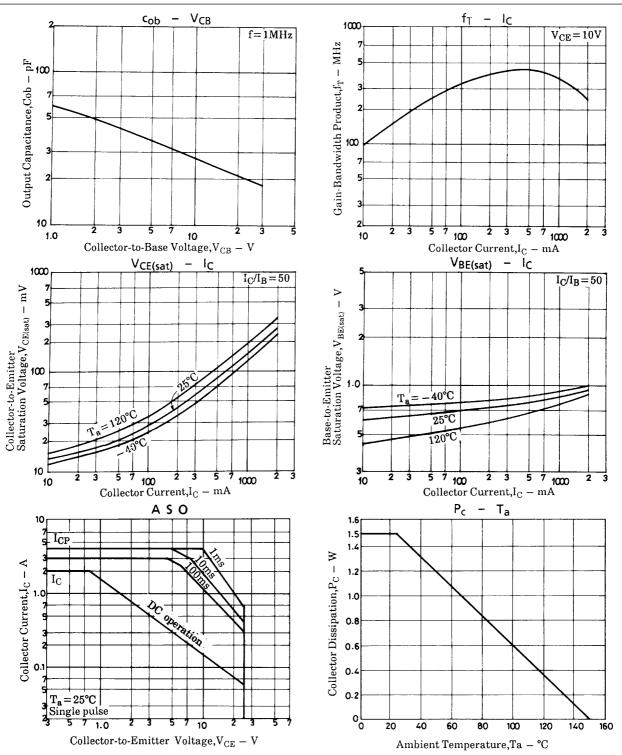
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	VCE(sat)	I <sub>C</sub> =1A, I <sub>B</sub> =20mA		0.15	0.5	V
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =1A, I <sub>B</sub> =20mA		0.85	1.2	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	I <sub>C</sub> =10μA, I <sub>E</sub> =0	30			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	I <sub>C</sub> =1mA, R <sub>BE</sub> =∞	25			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	I <sub>E</sub> =10μA, I <sub>C</sub> =0	15			V
Turn-ON Time	ton	See specified Test Circuit		0.14		μs
Strage Time	<sup>t</sup> stg	See specified Test Circuit		1.35		μs
Fall Time	t <sub>f</sub>	See specified Test Circuit		0.1		μs

### **Switching Time Test Circuit**







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