

## 2SC4736

# High h<sub>FE</sub>, Low-Frequency General-Purpose Amplifier Applications

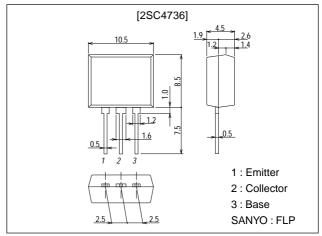
#### **Features**

- · Large current ( $I_C=2A$ ).
- · Adoption of MBIT process.
- · High DC current gain (h<sub>FE</sub>=800 to 3200).
- · Low collector-to-emitter saturation voltage  $(V_{CE(sat)} \le 0.5V)$ .
- · High emitter-to-base voltage (V<sub>EBO</sub>≥15V).
- · Large power type such as P<sub>C</sub>=1.5W when used without heatsink.
- · It is possible to make appliances more compact because its height on board is 9.5mm.
- · Effective in automatic inserting and counting stocked amount because of being provided for radial taping.

### **Package Dimensions**

unit:mm

2084B



## **Specifications**

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CBO</sub>		80	V
Collector-to-Emitter Voltage	VCEO		60	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		15	V
Collector Current	IC		2	Α
Collector Current (Pulse)	I <sub>CP</sub>		4	Α
Base Current	Ι <sub>Β</sub>		400	mA
Collector Dissipation	PC		1.5	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

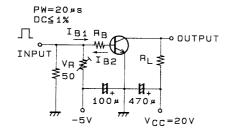
#### Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
	Symbol		min	typ	max	Offic
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =50V, I <sub>E</sub> =0			1	μΑ
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =10V, I <sub>C</sub> =0			1	μA
DC Current Gain	h <sub>FE</sub> 1	V <sub>CE</sub> =5V, I <sub>C</sub> =500mA	800	1500	3200	
	h <sub>FE</sub> 2	V <sub>CE</sub> =5V, I <sub>C</sub> =1A	600			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =50mA		170		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		24		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =1A, I <sub>B</sub> =20mA		0.2	0.5	V
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =1A, I <sub>B</sub> =20mA		0.87	1.2	V

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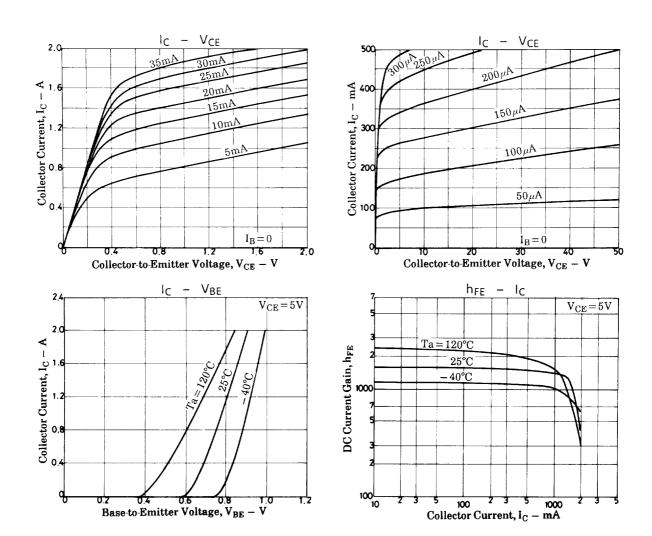
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	V(BR)CBO	I <sub>C</sub> =10μA, I <sub>E</sub> =0	80			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	I <sub>C</sub> =1mA, R <sub>BE</sub> =∞	60			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>C</sub> =10μA, I <sub>C</sub> =0	15			V
Turn-ON Time	ton	See specified Test Circuit.		0.23		μs
Strage Time	t <sub>stg</sub>	See specified Test Circuit.		2.7		μs
Fall Time	t <sub>f</sub>	See specified Test Circuit.		0.75		μs

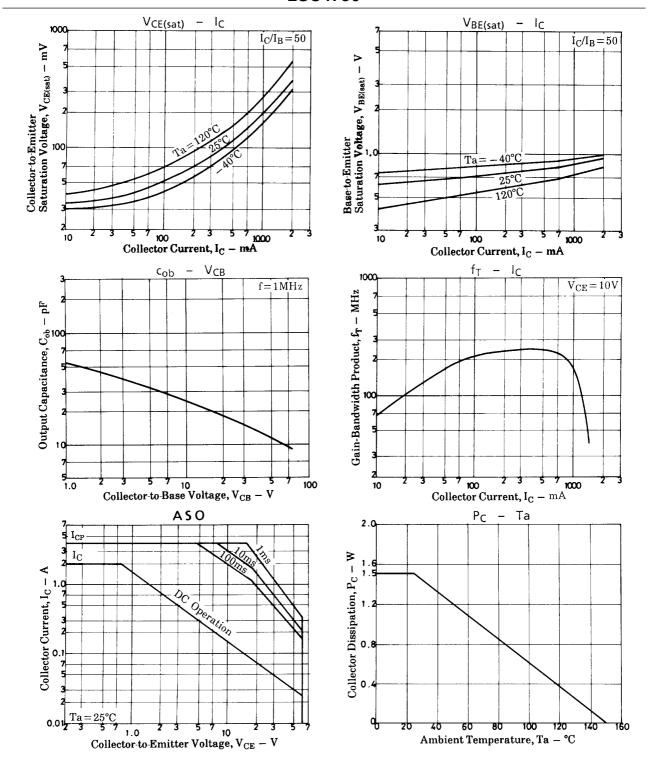
## **Switching Time Test Circuit**



 $100I_B1 = -100I_B2 = I_C = 700mA$ 

Unit (resistance:  $\Omega$ , capacitance: F)





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