2SC5951



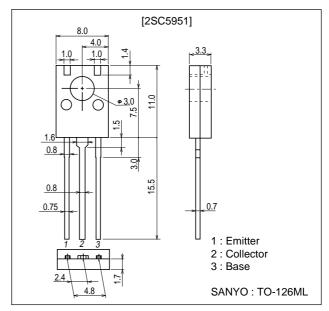
# **Switching Regulator Applications**

### **Features**

- · High breakdown voltage.
- · High-speed switching.
- · Wide ASO.
- · Adoption of MBIT process.

### **Package Dimensions**

unit : mm 2042B



# **Specifications**

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		700	V
Collector-to-Emitter Voltage	VCEO		400	V
Emitter-to-Base Voltage	VEBO		8	V
Collector Current	IC		1.5	Α
Collector Current (Pulse)	ICP	PW≤300μs, duty cycle≤10%	3	Α
Base Current	ΙΒ		0.7	Α
Collector Dissipation	De		1.5	W
	PC	Tc=25°C	10	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	O III
Collector Cutoff Current	ICBO	V <sub>CB</sub> =400V, I <sub>E</sub> =0			10	μΑ
Emitter Cutoff Current	IEBO	V <sub>EB</sub> =5V, I <sub>C</sub> =0			10	μΑ

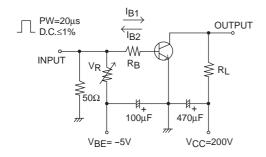
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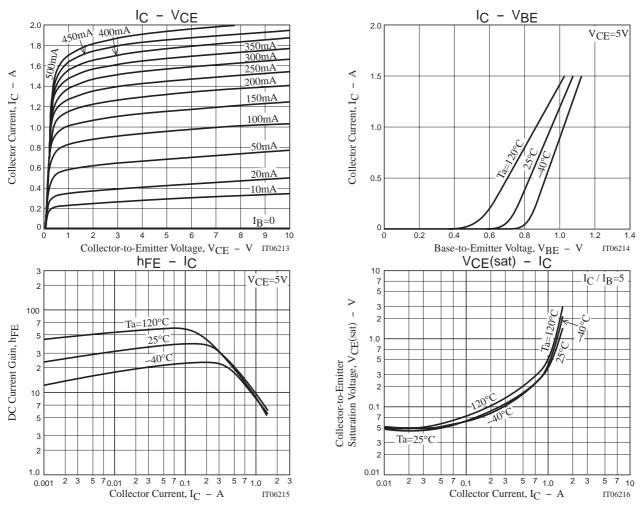
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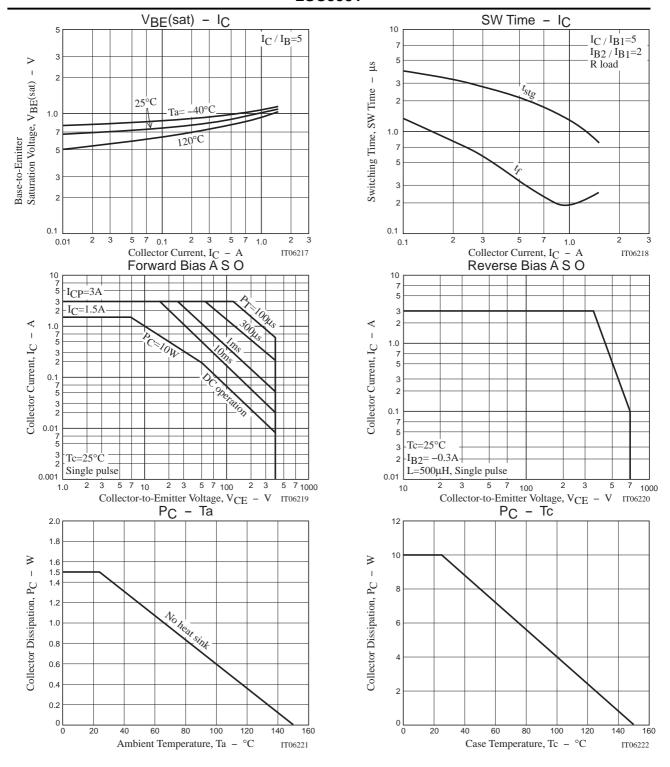
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Uniii
DC Current Gain	hFE1	V <sub>CE</sub> =5V, I <sub>C</sub> =0.1A	20		50	
	hFE2	V <sub>CE</sub> =5V, I <sub>C</sub> =0.7A	10			
	hFE3	VCE=5V, IC=1mA	10			
Gain-Bandwidth Product	fT	V <sub>CE</sub> =10V, I <sub>C</sub> =0.1A		20		MHz
Output Capacitance	Cob	V <sub>CB</sub> =10V, f=1MHz		10		pF
Collector-to-Emitter Saturation Voltage	VCE(sat)	IC=0.7A, IB=0.14A			0.8	V
Base-to-Emitter Saturation Voltage	V <sub>BE</sub> (sat)	I <sub>C</sub> =0.7A, I <sub>B</sub> =0.14A			1.5	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	I <sub>C</sub> =1mA, I <sub>E</sub> =0	700			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	IC=5mA, RBE=∞	400			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	IE=1mA, IC=0	8			V
Turn-On Time	ton	I <sub>C</sub> =1A, I <sub>B1</sub> =0.2A, I <sub>B2</sub> =-0.4A,R <sub>L</sub> =200Ω, V <sub>CC</sub> =200V			0.5	μs
Storage Time	tstg	I <sub>C</sub> =1A, I <sub>B1</sub> =0.2A, I <sub>B2</sub> =-0.4A,R <sub>L</sub> =200Ω, V <sub>CC</sub> =200V			2.5	μs
Fall Time	tf	I <sub>C</sub> =1A, I <sub>B1</sub> =0.2A, I <sub>B2</sub> =-0.4A,R <sub>L</sub> =200Ω, V <sub>CC</sub> =200V			0.25	μs

## **Switching Time Test Circuit**







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