



# 2SC5951

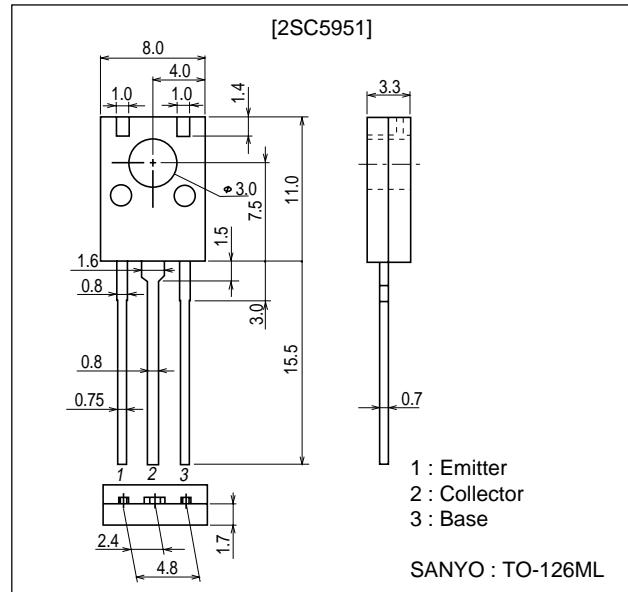
## Switching Regulator Applications

### 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	V <sub>CB0</sub>		700	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		400	V
Emitter-to-Base Voltage	V <sub>EB0</sub>		8	V
Collector Current	I <sub>C</sub>		1.5	A
Collector Current (Pulse)	I <sub>CP</sub>	PW≤300μs, duty cycle≤10%	3	A
Base Current	I <sub>B</sub>		0.7	A
Collector Dissipation	P <sub>C</sub>		1.5	W
		T <sub>C</sub> =25°C	10	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =400V, I <sub>E</sub> =0			10	μA
Emitter Cutoff Current	I <sub>EB0</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0			10	μA

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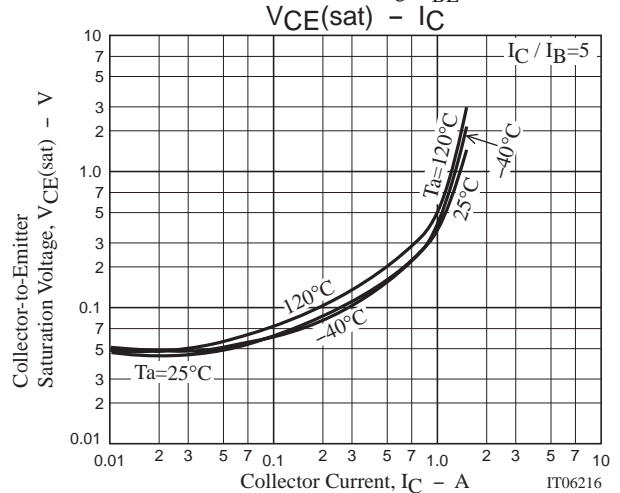
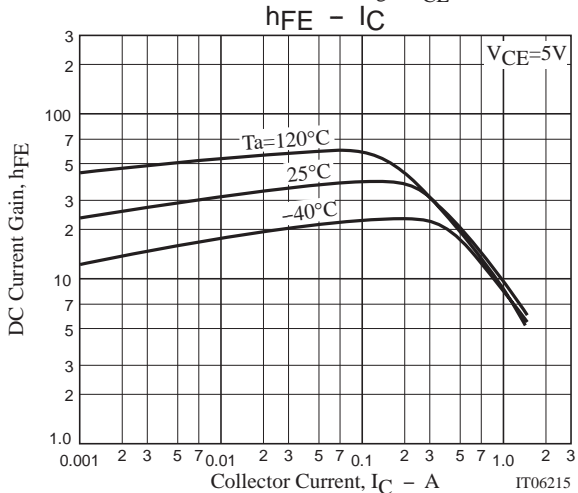
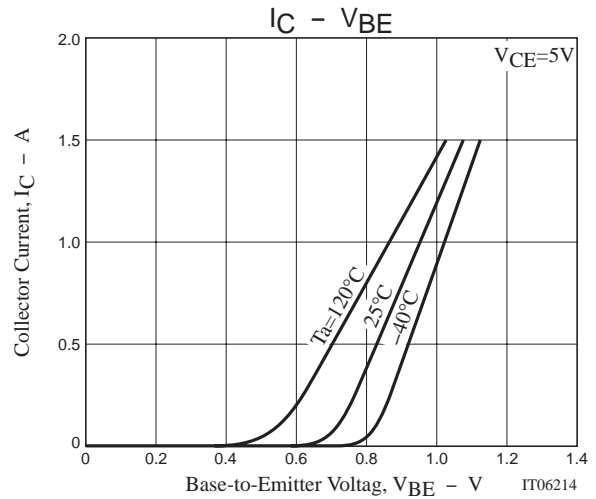
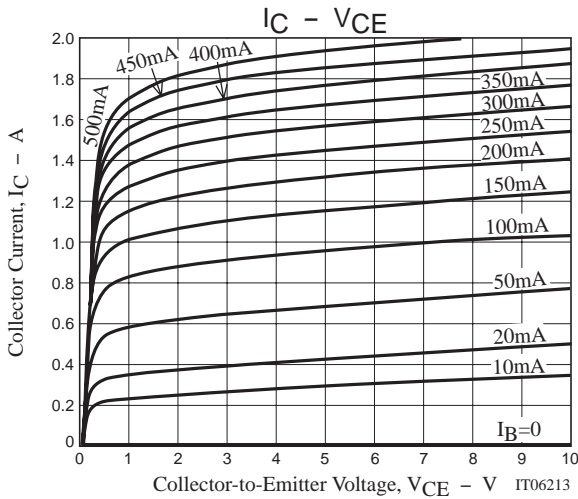
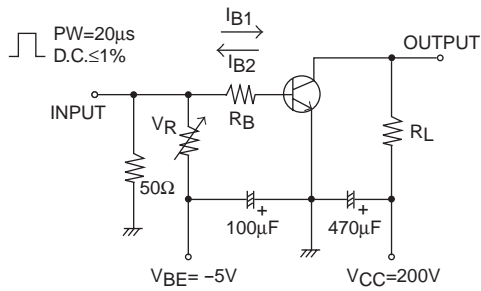
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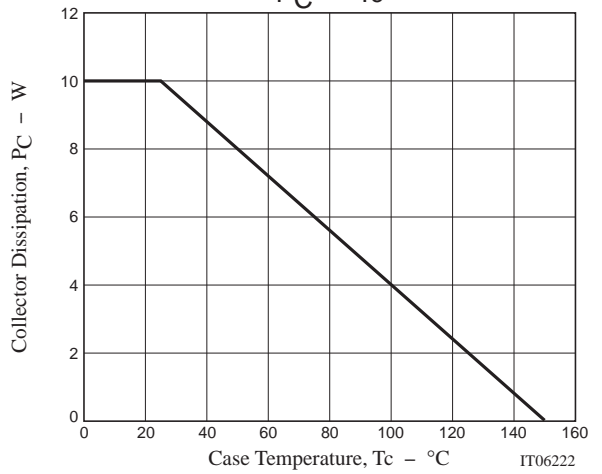
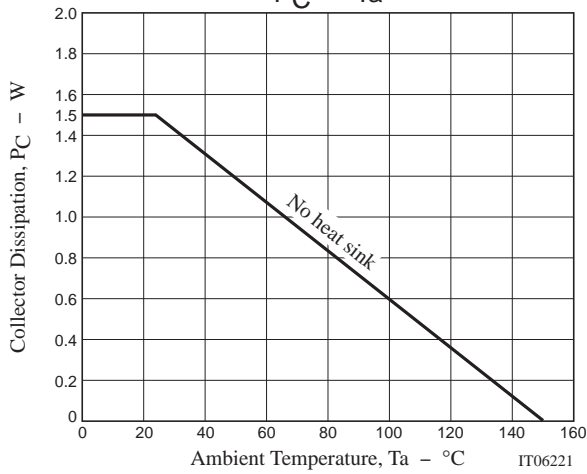
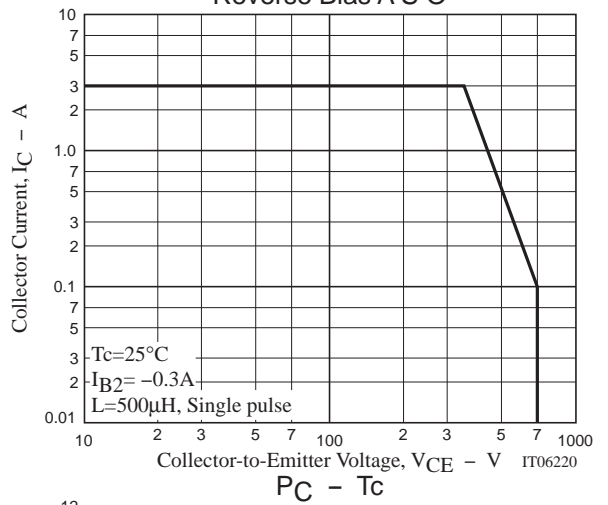
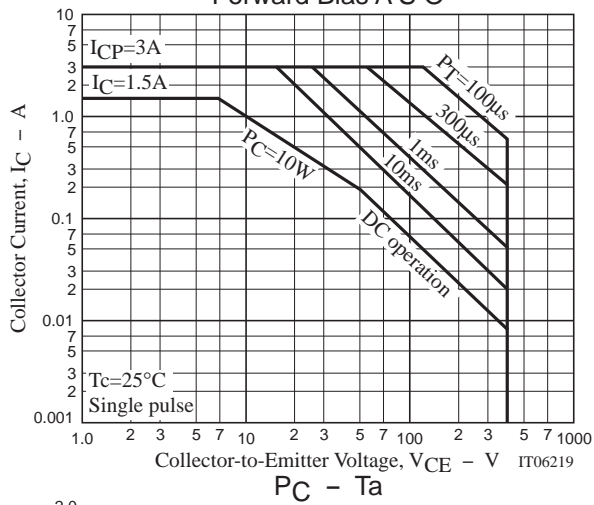
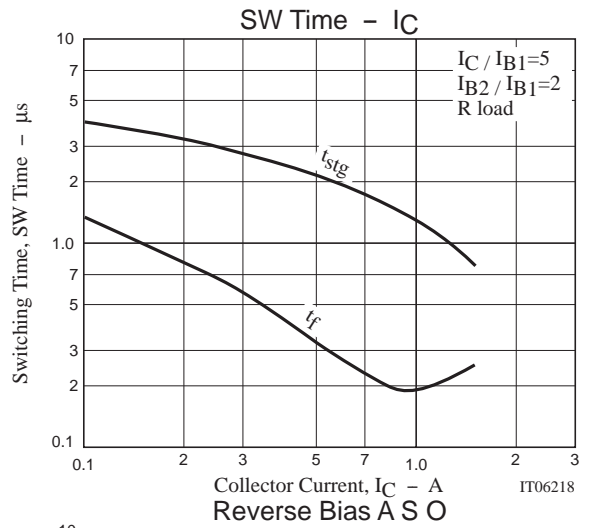
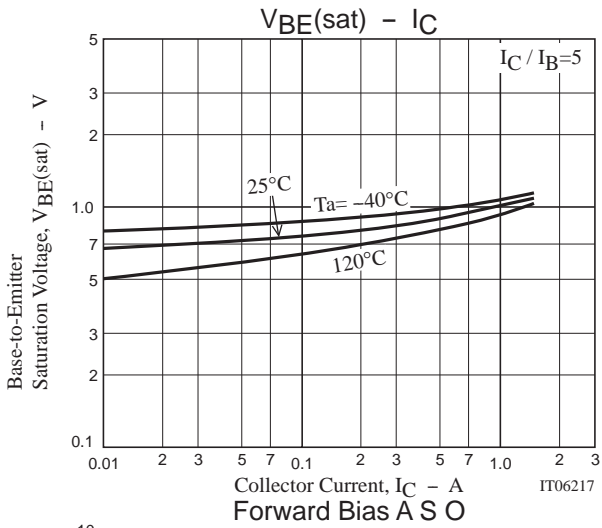
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	$h_{FE1}$	$V_{CE}=5V, I_C=0.1A$	20		50	
	$h_{FE2}$	$V_{CE}=5V, I_C=0.7A$	10			
	$h_{FE3}$	$V_{CE}=5V, I_C=1mA$	10			
Gain-Bandwidth Product	$f_T$	$V_{CE}=10V, I_C=0.1A$		20		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10V, f=1MHz$		10		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.7A, I_B=0.14A$			0.8	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=0.7A, I_B=0.14A$			1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	700			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=5mA, R_{BE}=\infty$	400			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$	8			V
Turn-On Time	$t_{on}$	$I_C=1A, I_{B1}=0.2A, I_{B2}=-0.4A, R_L=200\Omega, V_{CC}=200V$			0.5	$\mu s$
Storage Time	$t_{stg}$	$I_C=1A, I_{B1}=0.2A, I_{B2}=-0.4A, R_L=200\Omega, V_{CC}=200V$			2.5	$\mu s$
Fall Time	$t_f$	$I_C=1A, I_{B1}=0.2A, I_{B2}=-0.4A, R_L=200\Omega, V_{CC}=200V$			0.25	$\mu s$

Switching Time Test Circuit



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