



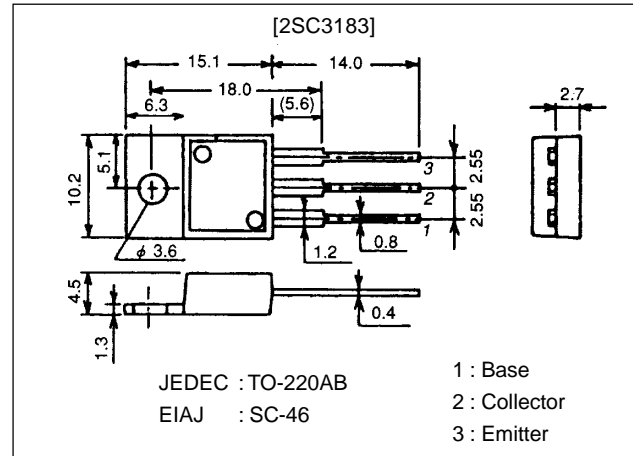
**800V/0.2A Switching Regulator Applications**

**Features**

- High breakdown voltage ( $V_{CBO} \geq 900V$ ).
- Fast switching speed.
- Wide ASO.

**Package Dimensions**

unit:mm  
2010C



**Specifications**

**Absolute Maximum Ratings at  $T_a = 25^\circ C$**

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		900	V
Collector-to-Emitter Voltage	$V_{CEO}$		800	V
Emitter-to-Base Voltage	$V_{EBO}$		7	V
Collector Current	$I_C$		0.2	A
Collector Current (Pulse)	$I_{CP}$	$PW \leq 300\mu s$ , Duty Cycle $\leq 10\%$	1	A
Collector Dissipation	$P_C$	$T_c = 25^\circ C$	25	W
Junction Temperature	$T_J$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

**Electrical Characteristics at  $T_a = 25^\circ C$**

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 800V$ , $I_E = 0$			10	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 5V$ , $I_C = 0$			10	$\mu A$
DC Current Gain	$h_{FE1}$	$V_{CE} = 5V$ , $I_C = 20mA$	10*		40*	
	$h_{FE2}$	$V_{CE} = 5V$ , $I_C = 100mA$	8			
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 100mA$ , $I_B = 20mA$			2.0	V
Gain-Bandwidth Product	$f_T$	$V_{CE} = 10V$ , $I_C = 20mA$		15		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = 10V$ , $f = 1MHz$		10		pF

\* : The  $h_{FE1}$  of the 2SC3183 is classified as follows. When specifying the  $h_{FE1}$  rank, specify two ranks or more in principle.

10	K	20	15	L	30	20	M	40
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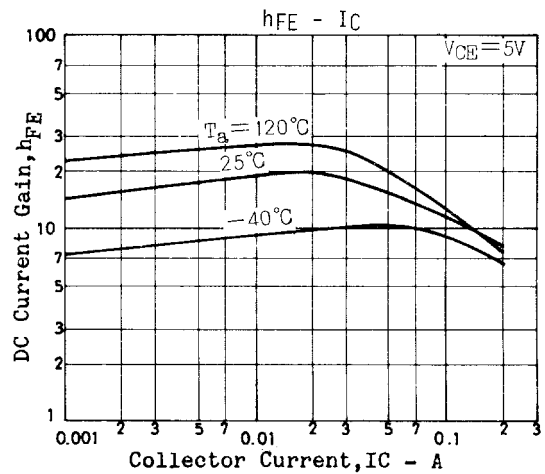
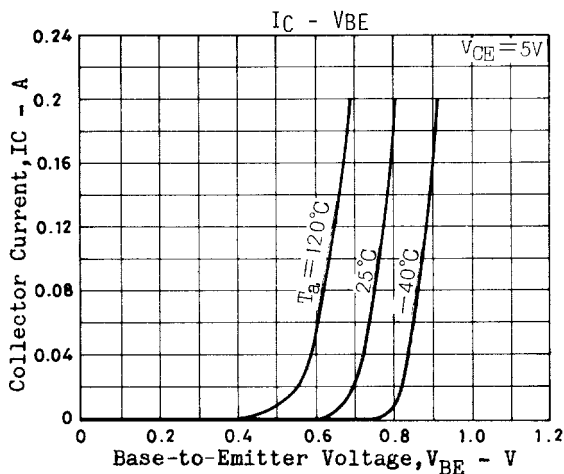
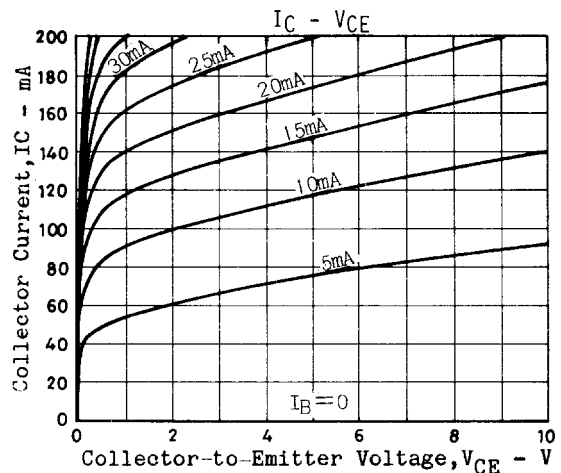
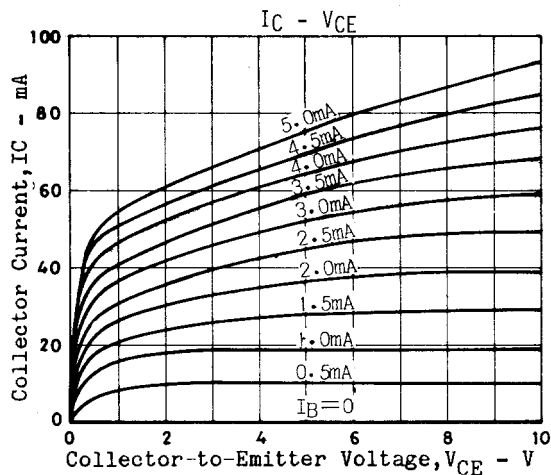
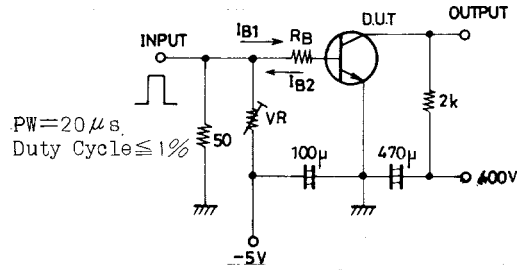
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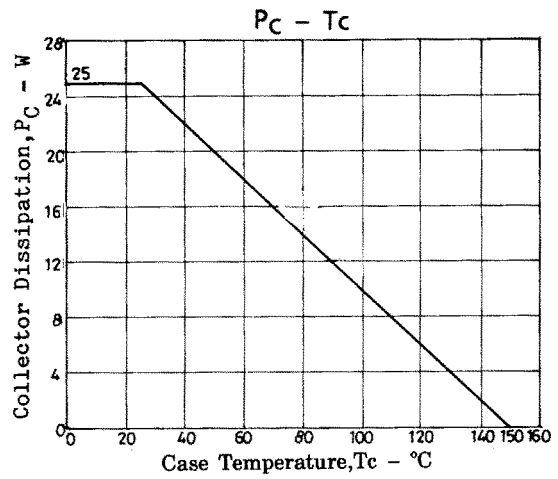
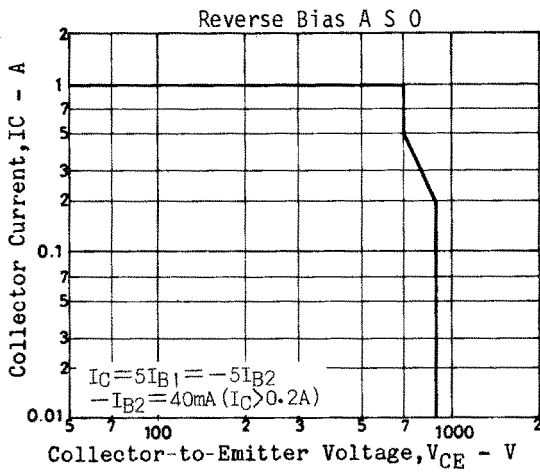
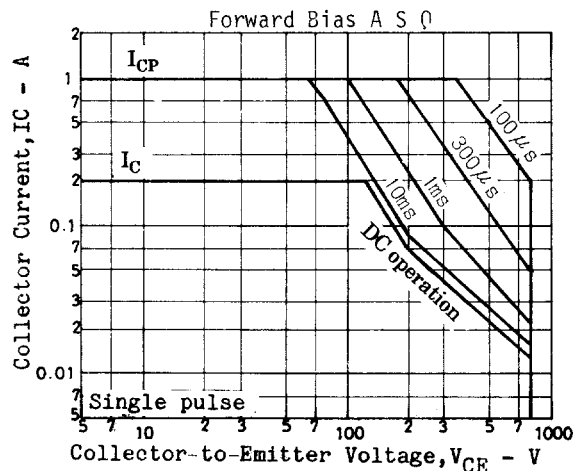
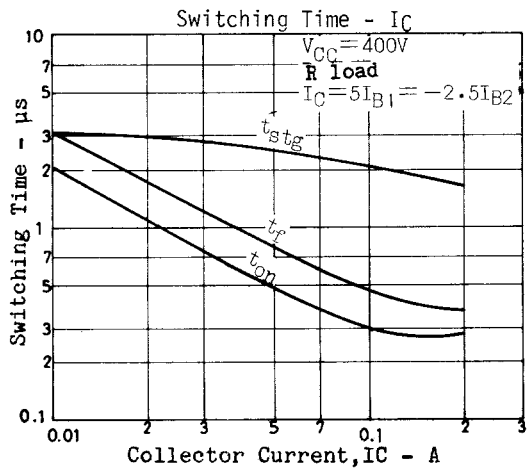
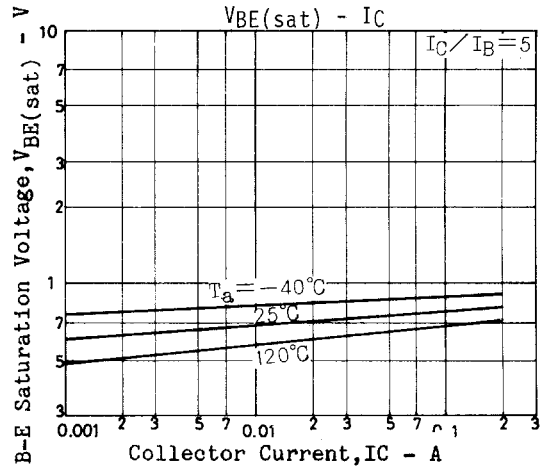
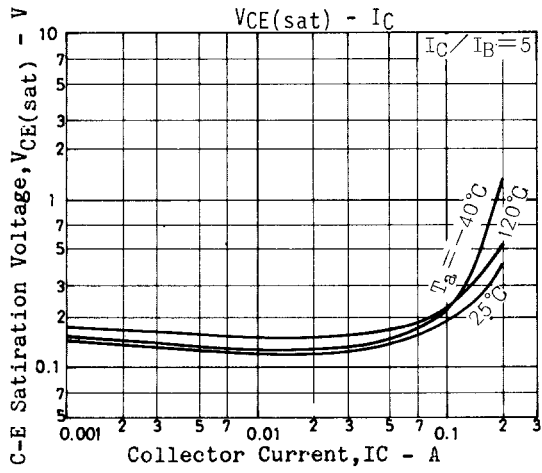
# 2SC3183

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	900			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	800			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$	7			V
Collector-to-Emitter Sustain Voltage	$V_{CEO(sus)}$	$I_C=0.2A, I_B=0.04A, L=10mH$	800			V
Collector-to-Emitter Sustain Voltage	$V_{CEX(sus)}$	$I_C=0.2A, I_{B1}=0.04A, I_{B2}=-0.04A, L=10mH, \text{clamped}$	900			V
Turn-ON Time	$t_{on}$	$I_C=200mA, I_{B1}=40mA, I_{B2}=-80mA$			1.0	$\mu s$
Storage Time	$t_{stg}$	$I_C=200mA, I_{B1}=40mA, I_{B2}=-80mA$			3.0	$\mu s$
Fall Time	$t_f$	$I_C=200mA, I_{B1}=40mA, I_{B2}=-80mA$			1.0	$\mu s$

## Switching Time Test Circuit



# 2SC3183



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