



2SC3183

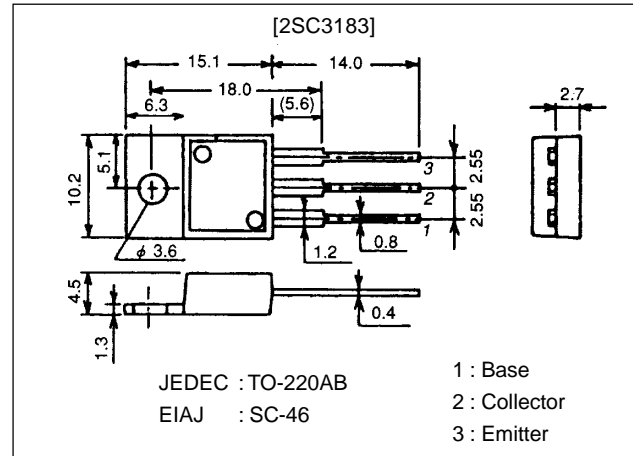
800V/0.2A Switching Regulator Applications

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	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5V$, $I_C = 0$			10	μA
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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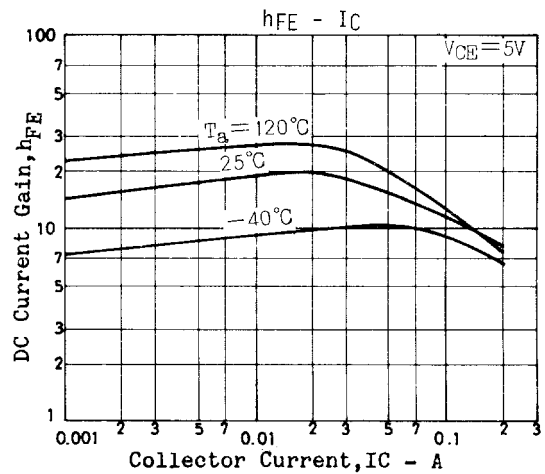
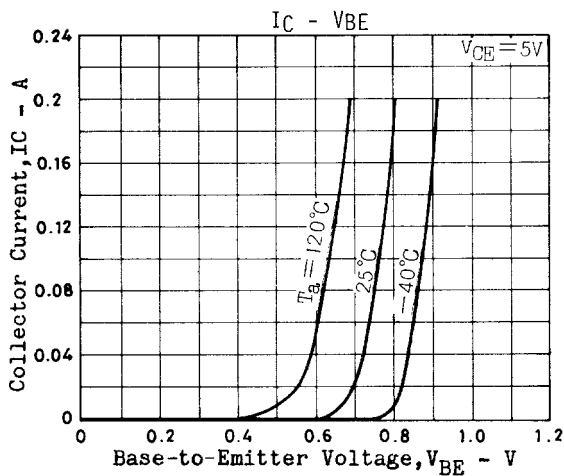
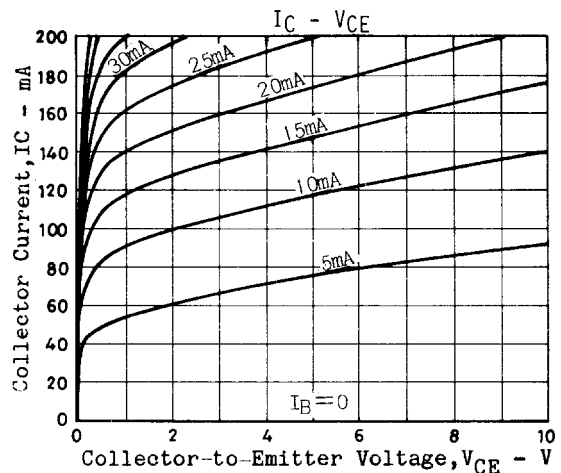
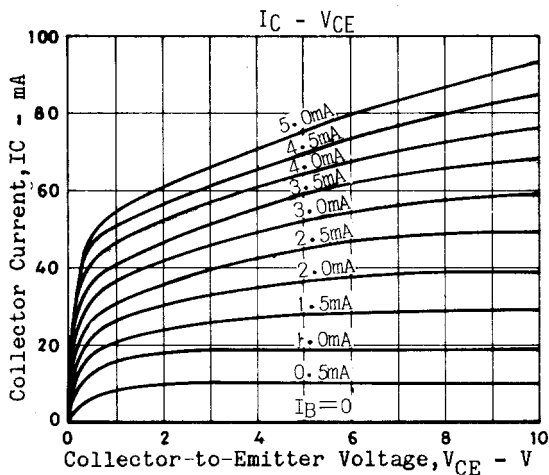
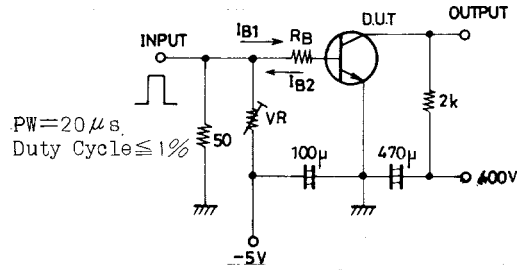
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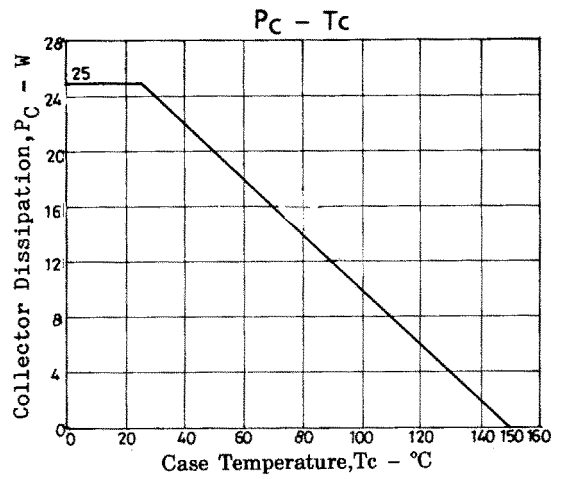
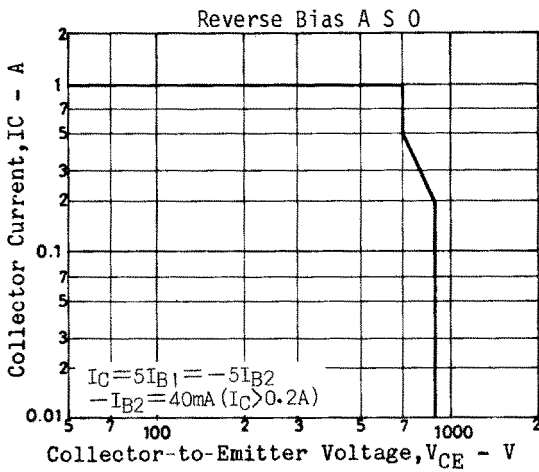
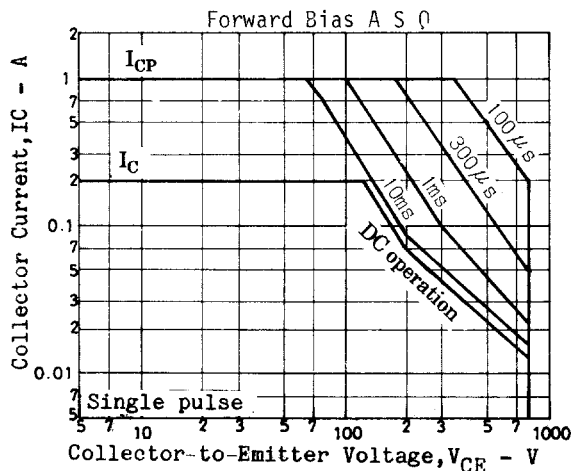
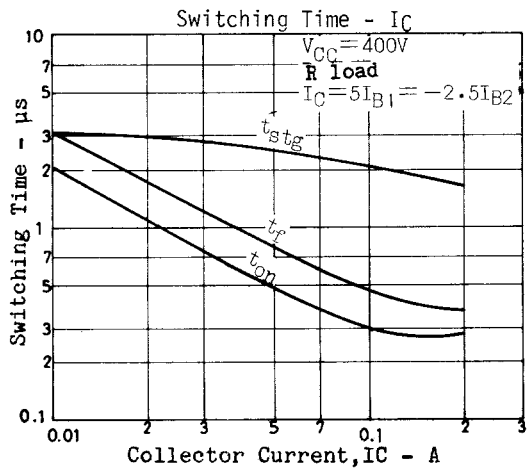
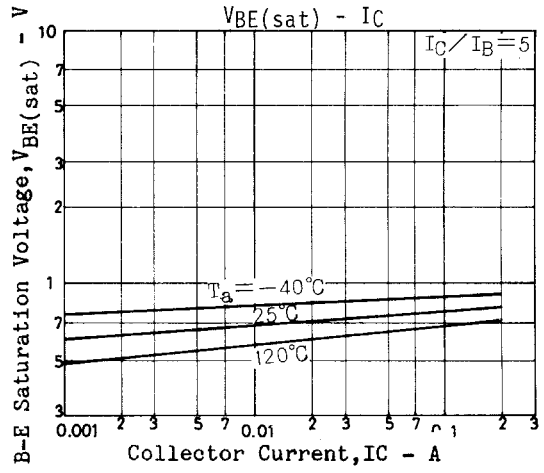
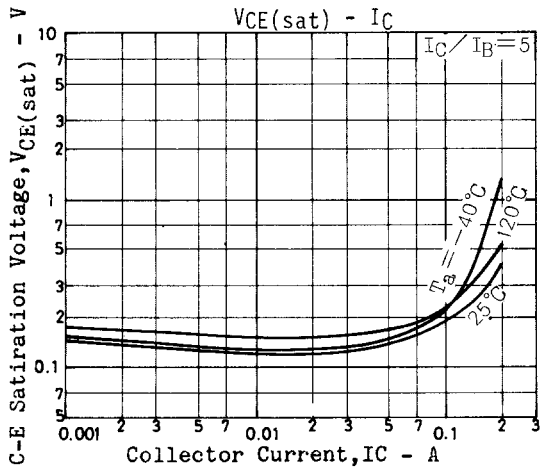
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	900			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	800			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$	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	μs
Storage Time	t_{stg}	$I_C=200mA, I_{B1}=40mA, I_{B2}=-80mA$			3.0	μs
Fall Time	t_f	$I_C=200mA, I_{B1}=40mA, I_{B2}=-80mA$			1.0	μs

Switching Time Test Circuit



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