



No.1576C

2SC3450

NPN Triple Diffused Planar Silicon Transistor

Switching Regulator Applications

Features

- High breakdown voltage and high reliability
- Fast switching speed (t_f : 0.1 μ s typ.)
- Wide ASO
- Adoption of MBIT process

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Condition	Value	Unit
Collector-to-Base Voltage	V_{CBO}		800	V
Collector-to-Emitter Voltage	V_{CEO}		500	V
Emitter-to-Base Voltage	V_{EBO}		7	V
Collector Current	I_C		10	A
Peak Collector Current	i_{cp}	$PW \leq 300\mu\text{s}, \text{Duty cycle} \leq 10\%$	20	A
Base Current	I_B		3	A
Collector Dissipation	P_C	$T_c=25^\circ\text{C}$	90	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a=25^\circ\text{C}$

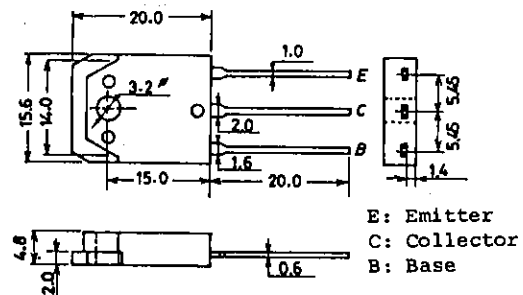
Parameter	Symbol	Condition	min	typ	max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=500\text{V}, I_E=0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			10	μA
DC Current Gain	$h_{FE}(1)$	$V_{CE}=5\text{V}, I_C=0.8\text{A}$	15*		50*	
	$h_{FE}(2)$	$V_{CE}=5\text{V}, I_C=4\text{A}$	8			
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=0.8\text{A}$		18		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		120		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=4\text{A}, I_B=0.8\text{A}$			1.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=4\text{A}, I_B=0.8\text{A}$			1.5	V
C-B Breakdown Voltage	$V(BR)_{CBO}$	$I_C=1\text{mA}, I_E=0$	800			V
C-E Breakdown Voltage	$V(BR)_{CEO}$	$I_C=5\text{mA}, R_{BE}=\infty$	500			V
E-B Breakdown Voltage	$V(BR)_{EBO}$	$I_E=1\text{mA}, I_C=0$	7			V

*: The $h_{FE}(1)$ of the 2SC3450 is classified as follows. When specifying the $h_{FE}(1)$ rank, specify two ranks or more in principle

15	L	30	20	M	40	30	N	50
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Package Dimensions 2022
(unit:mm)

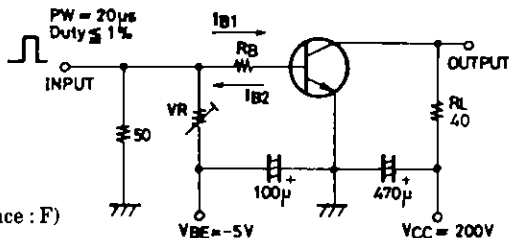


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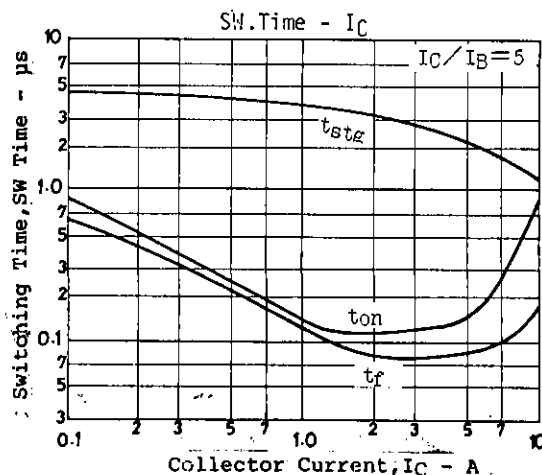
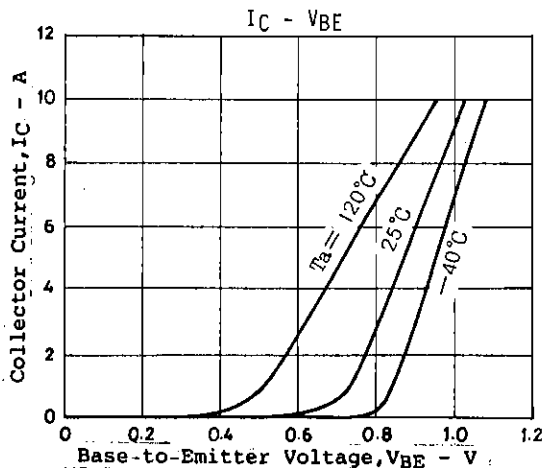
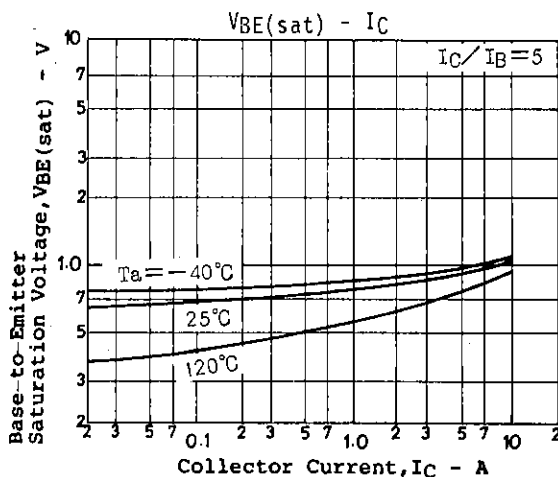
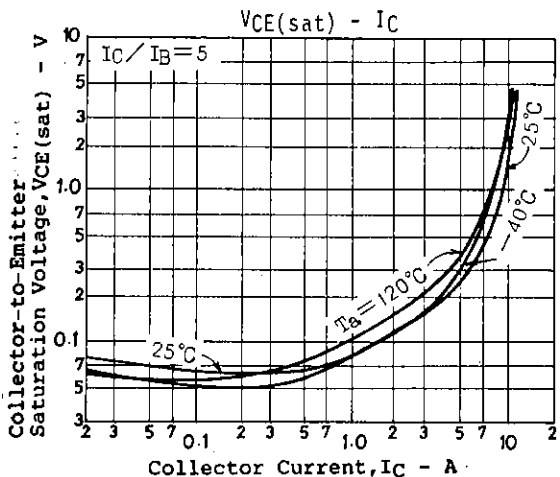
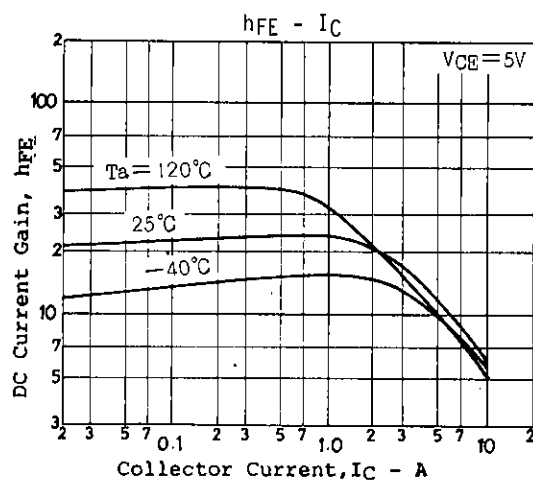
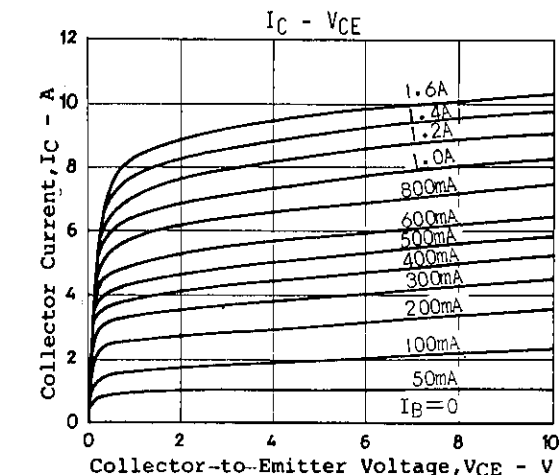
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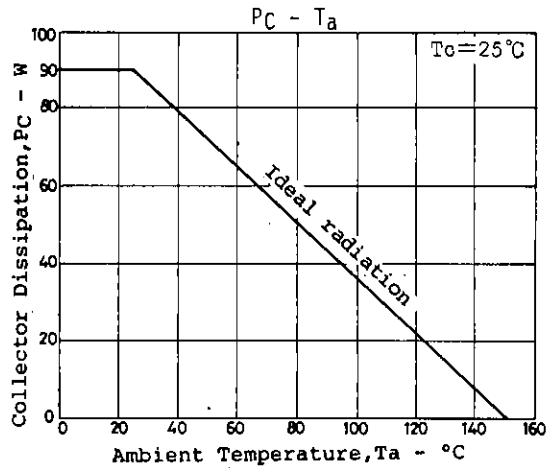
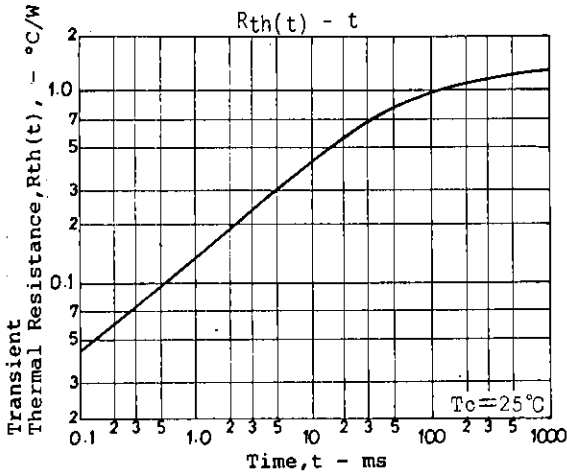
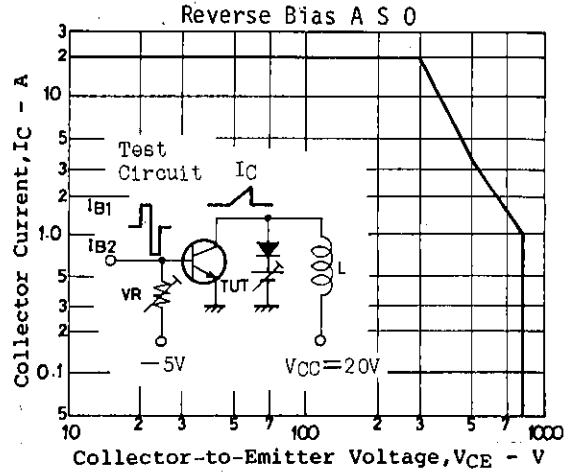
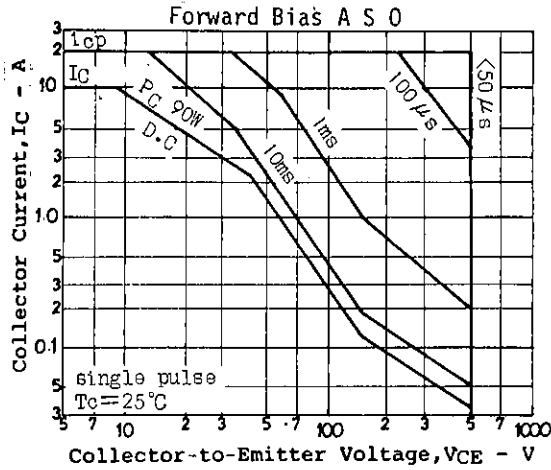
			min	typ	max	unit
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C=3.5A$	500			V
		$I_{B1}=-I_{B2}=1.4A,$				
		$L=500\mu H, \text{clamped}$				
Turn-on Time	t_{on}	$\left. \begin{array}{l} V_{CC}=200V, \\ 5I_{B1}=-2.5I_{B2}=I_C=5A, \\ R_L=40\text{ohms} \end{array} \right\}$			0.5	μs
Storage Time	t_{stg}				3.0	μs
Fall Time	t_f				0.3	μs

Switching Time Test Circuit



Unit (Resistance : Ω , Capacitance : F)





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