

# 2SC3910

## Silicon NPN Triple-Diffused Junction Mesa Type

### High Speed Switching

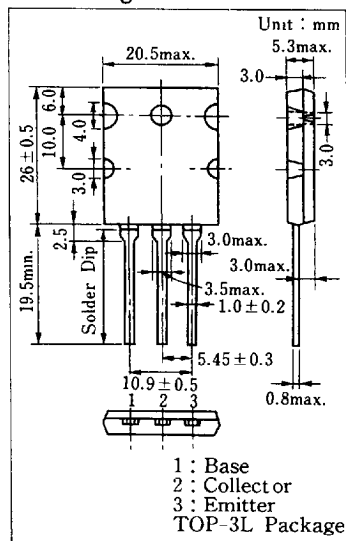
#### ■ Features

- High speed switching
- High collector-base voltage ( $V_{CB0}$ )
- Wide area of safety operation (ASO)
- Good linearity of  $h_{FE}$

#### ■ Absolute Maximum Ratings ( $T_c=25^\circ\text{C}$ )

Item	Symbol	Value	Unit
Collector-base voltage	$V_{CB0}$	800	V
Collector-emitter voltage	$V_{CES}$	800	V
	$V_{CEO}$	500	V
Emitter-base voltage	$V_{EBO}$	7	V
Peak collector current	$I_{CP}$	30	A
Collector current	$I_C$	15	A
Base current	$I_B$	5	A
Collector power dissipation	$T_c=25^\circ\text{C}$	150	W
	$T_a=25^\circ\text{C}$	3.5	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$

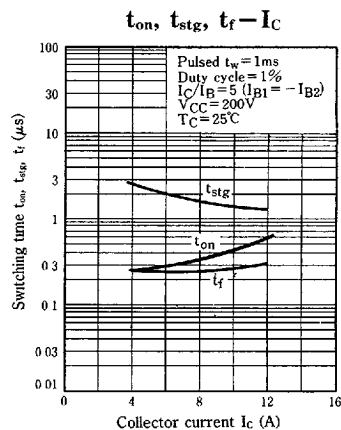
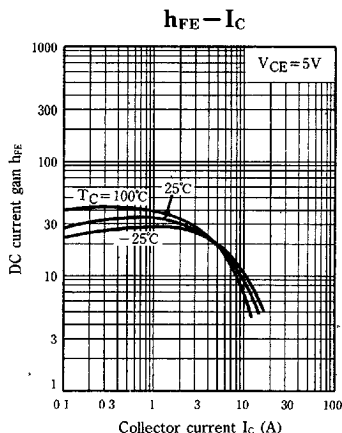
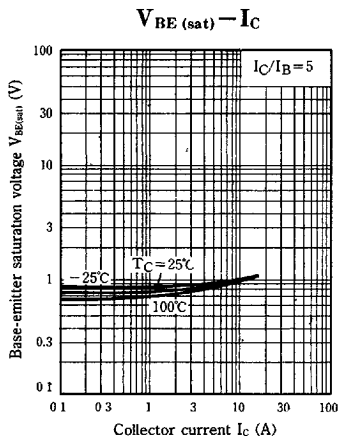
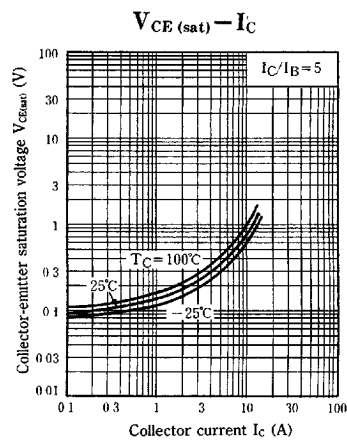
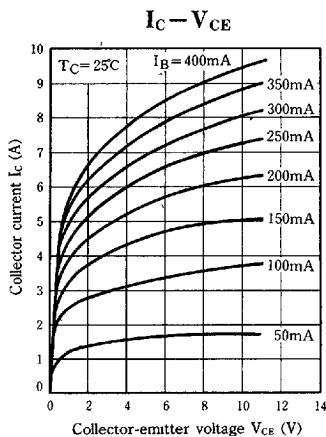
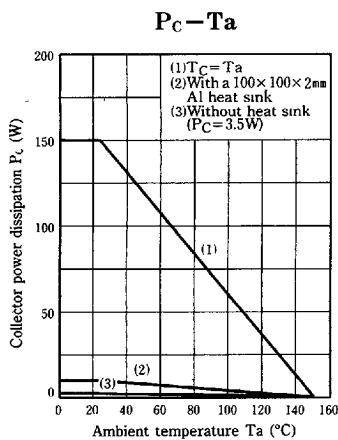
#### ■ Package Dimensions



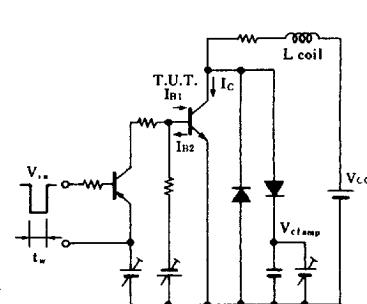
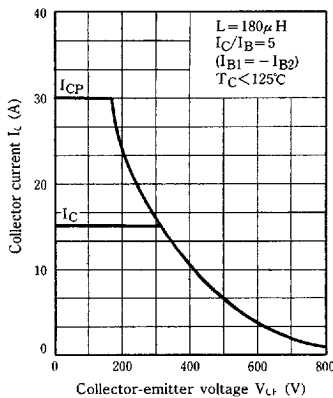
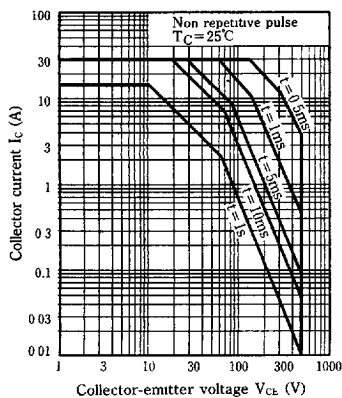
#### ■ Electrical Characteristics ( $T_c=25^\circ\text{C}$ )

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	$I_{CB0}$	$V_{CB}=800\text{V}, I_E=0$			100	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB}=7\text{V}, I_C=0$			0.1	mA
Collector-emitter voltage	$V_{CEO(sus)}$	$I_C=0.5\text{A}, L=25\text{mH}$	500			V
DC current gain	$h_{FE1}$	$V_{CE}=5\text{V}, I_C=0.1\text{A}$	15			
	$h_{FE2}$	$V_{CE}=5\text{V}, I_C=8\text{A}$	10			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=8\text{A}, I_B=1.6\text{A}$			1	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=8\text{A}, I_B=1.6\text{A}$			1.5	V
Turn-on time	$t_{on}$	$I_C=8\text{A}$			1	$\mu\text{s}$
Storage time	$t_{stg}$	$I_{B1}=1.6\text{A}, I_{B2}=-1.6\text{A}$			3	$\mu\text{s}$
Collector current fall time	$t_f$	$V_{CC}=200\text{V}$			1	$\mu\text{s}$
Transition frequency	$f_T$	$V_{CE}=10\text{V}, I_C=0.5\text{A}, f=0.5\text{MHz}$		2		MHz

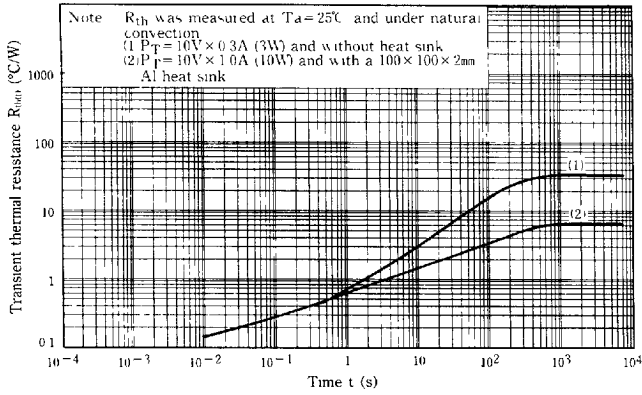
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Safety operation area-forward bias (ASO) Safety operation area-reverse bias (ASO) Measurement circuit of reverse bias ASO



$R_{th(t)}-t$



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