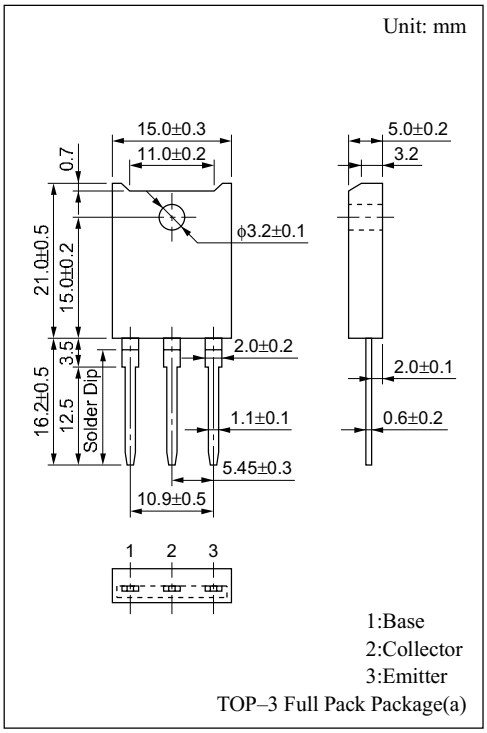
2SC3506

Silicon NPN triple diffusion planar type

For high-speed switching



■ Features

- High-speed switching
- High collector to base voltage V_{CBO}
- Satisfactory linearity of foward current transfer ratio h_{FE}
- Full-pack package which can be installed to the heat sink with one screw

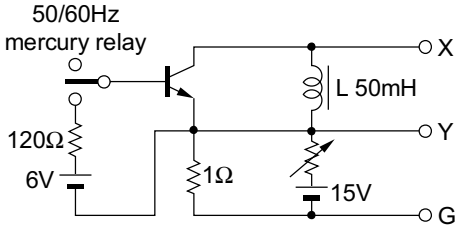
■ Absolute Maximum Ratings (T_C=25˚C)

Parameter		Symbol	Ratings	Unit
Collector to base voltage		V_{CBO}	1000	V
		V_{CES}	1000	V
Collector to emitter voltage		V_{CEO}	800	V
Emitter to base voltage		V_{EBO}	7	V
Peak collector current		I_{CP}	6	A
Collector current		I_C	3	A
Base current		I_B	2	A
Collector power dissipation	T_C=25℃	P_C	70	W
	Ta=25℃		3	
Junction temperature		T_j	150	˚C
Storage temperature		T_{stg}	–55 to +150	˚C

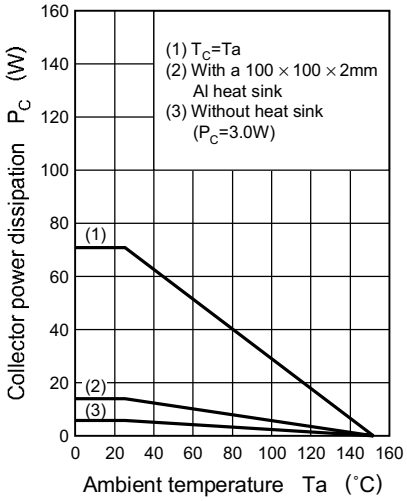
■ Electrical Characteristics (T_C=25˚C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 1000V, I_E = 0			50	µA
Emitter cutoff current	I_{EBO}	V_{EB} = 7V, I_C = 0			50	µA
Collector to emitter voltage	$V_{CEO(sus)}$*	I_C = 0.5A, L = 50mH	800			V
Forward current transfer ratio	h_{FE}	V_{CE} = 5V, I_C = 2A	6			
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 2A, I_B = 0.4A			1.5	V
Base to emitter saturation voltage	$V_{BE(sat)}$	I_C = 2A, I_B = 0.4A			1.5	V
Transition frequency	f_T	V_{CE} = 5V, I_C = 0.2A, f = 1MHz		4		MHz
Turn-on time	t_{on}	I_C = 2A, I_{B1} = 0.4A, I_{B2} = – 0.8A, V_{CC} = 250V			1	µs
Storage time	t_{stg}				2.5	µs
Fall time	t_f				0.5	µs

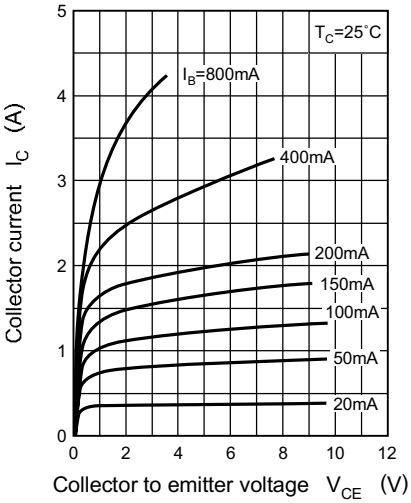
*$V_{CEO(sus)}$ Test circuit



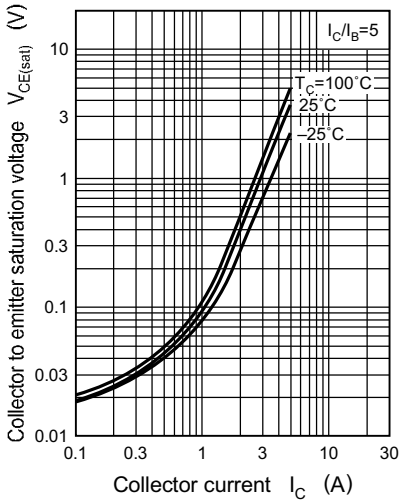
P_C — Ta



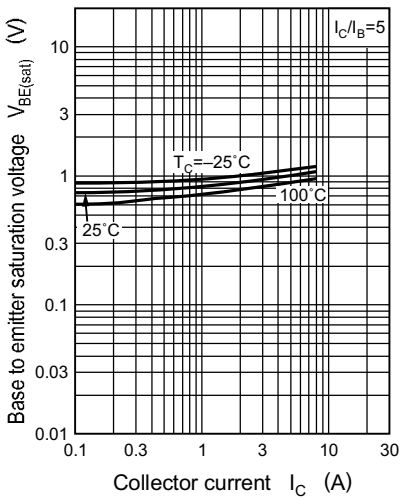
I_C — V_{CE}



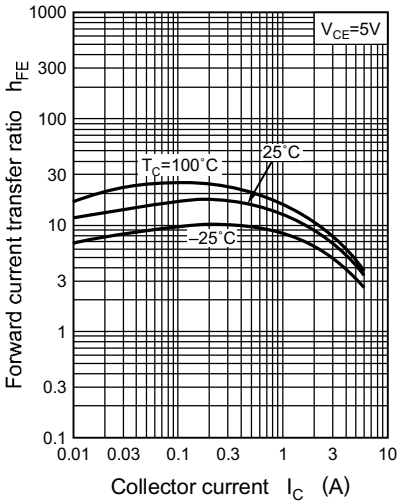
$V_{CE(sat)}$ — I_C



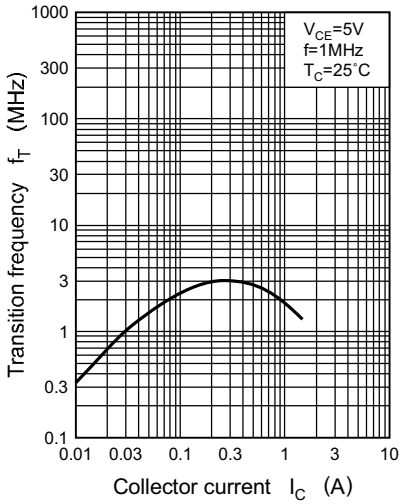
$V_{BE(sat)}$ — I_C



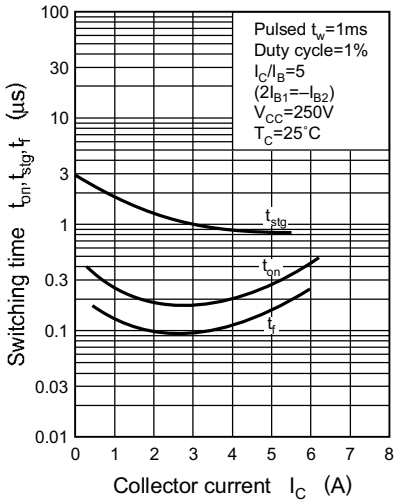
h_{FE} — I_C



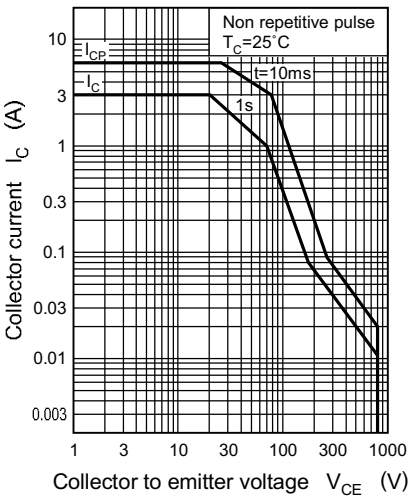
f_T — I_C



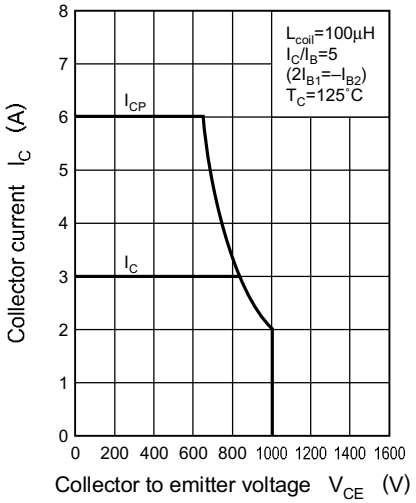
t_{on}, t_{stg}, t_f — I_C



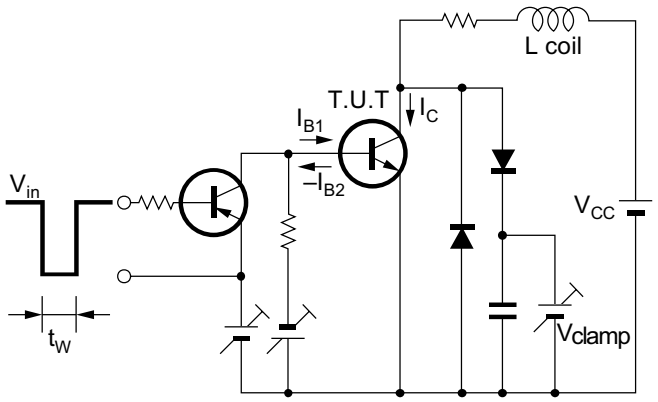
Area of safe operation (ASO)



Area of safe operation, reverse bias ASO



Reverse bias ASO measuring circuit



$R_{th(t)}$ — t