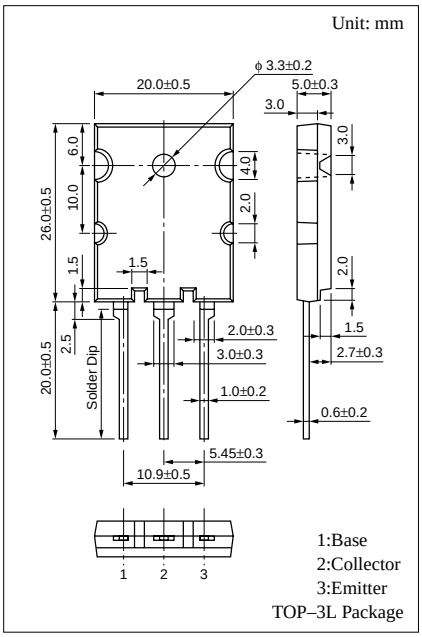
2SC4111

Silicon NPN triple diffusion planar type

For horizontal deflection output



Features

- High-speed switching
- High collector to base voltage V_{CBO}
- Wide area of safe operation (ASO)
- Satisfactory linearity of foward current transfer ratio h_{FE}

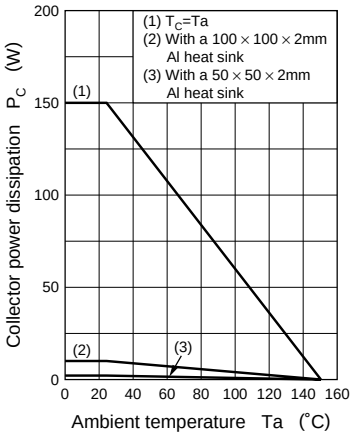
Absolute Maximum Ratings (T_C=25˚C)

Parameter		Symbol	Ratings	Unit
Collector to base voltage		V_{CBO}	1500	V
Collector to emitter voltage		V_{CES}	1500	V
		V_{CEO}	700	V
Emitter to base voltage		V_{EBO}	7	V
Peak collector current		I_{CP}	22	A
Collector current		I_C	10	A
Base current		I_B	3.5	A
Collector power dissipation	T_C=25°C	P_C	150	W
	Ta=25°C		3.5	
Junction temperature		T_j	150	˚C
Storage temperature		T_{stg}	–55 to +150	˚C

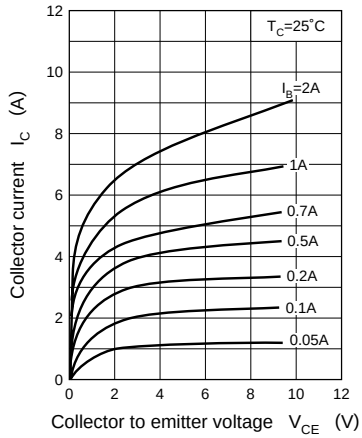
Electrical Characteristics (T_C=25˚C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 750V, I_E = 0			10	μA
		V_{CB} = 1500V, I_E = 0			1	mA
Emitter to base voltage	V_{EBO}	I_C = 1mA, I_B = 0	7			V
Forward current transfer ratio	h_{FE1}	V_{CE} = 5V, I_C = 1A	5			
	h_{FE2}	V_{CE} = 5V, I_C = 7A	3		8	
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 7A, I_B = 2.5A			5	V
Base to emitter saturation voltage	$V_{BE(sat)}$	I_C = 7A, I_B = 2.5A			1.5	V
Transition frequency	f_T	V_{CE} = 10V, I_C = 1A, f = 0.5MHz		2		MHz
Storage time	t_{stg}	I_C = 6A, L_{leak} = 5μH,			12	μs
Fall time	t_f	I_{B1} = 1.7A, I_{B2} = –1.7A			0.6	μs

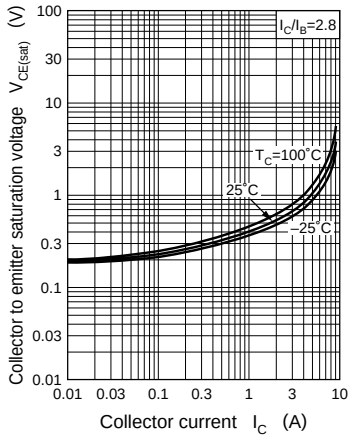
P_C — Ta



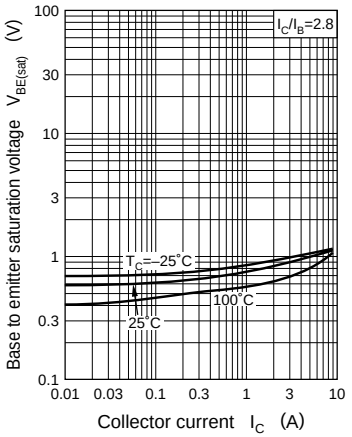
I_C — V_{CE}



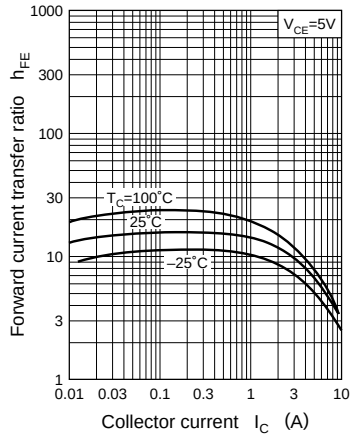
$V_{CE(sat)}$ — I_C



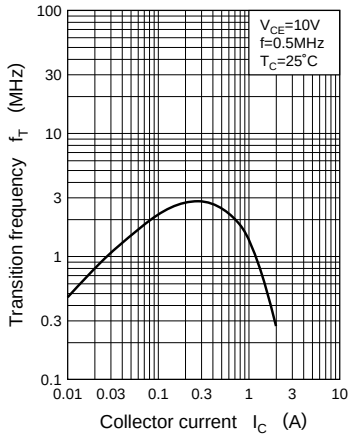
$V_{BE(sat)}$ — I_C



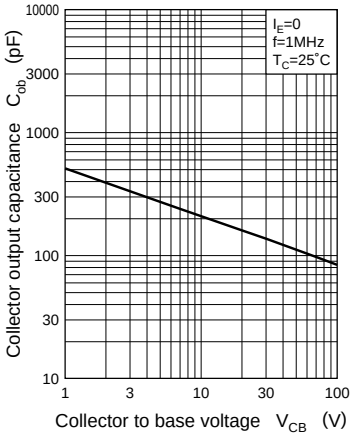
h_{FE} — I_C



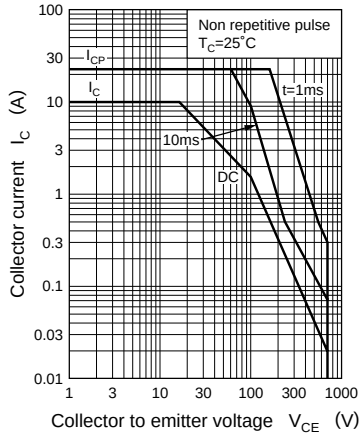
f_T — I_C



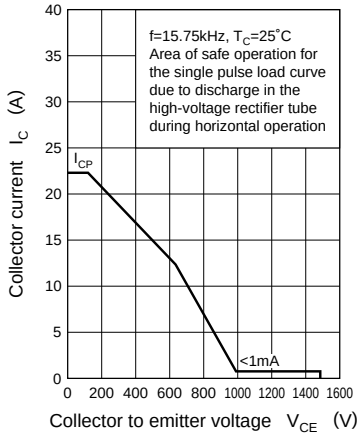
C_{ob} — V_{CB}



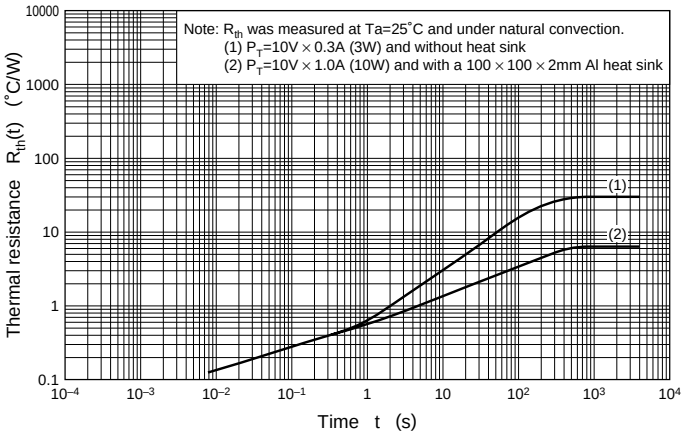
Area of safe operation (ASO)



Area of safe operation, horizontal operation ASO



$R_{th(t)}$ — t


Note: R_{th} was measured at Ta=25°C and under natural convection.
(1) P_T=10V × 0.3A (3W) and without heat sink
(2) P_T=10V × 1.0A (10W) and with a 100 × 100 × 2mm Al heat sink
Thermal resistance $R_{th}(t)$ (°C/W)
10000
1000
100
10
1
0.1
(1)
(2)
10^{-4}
10^{-3}
10^{-2}
10^{-1}
1
10
10^{2}
10^{3}
10^{4}
Time t (s)