

2SA1501

Silicon PNP epitaxial planar type

For power switching

Features

- High-speed switching
- High collector to base voltage V_{CBO}
- Wide area of safe operation (ASO)
- Satisfactory linearity of forward current transfer ratio h_{FE}
- Full-pack package which can be installed to the heat sink with one screw

Absolute Maximum Ratings ($T_C=25^\circ\text{C}$)

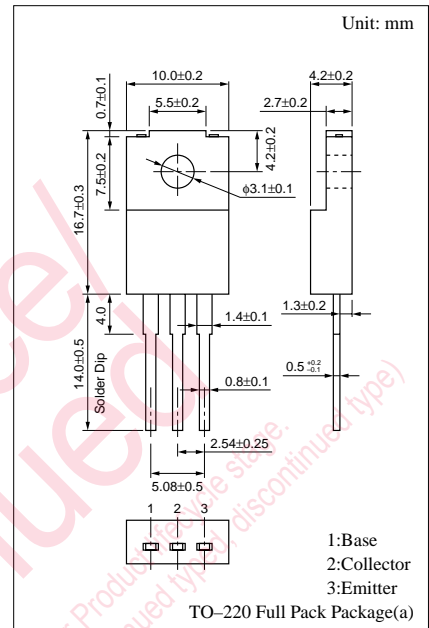
Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	-400	V
Collector to emitter voltage	V_{CEO}	-400	V
Emitter to base voltage	V_{EBO}	-7	V
Peak collector current	I_{CP}	-8	A
Collector current	I_C	-5	A
Collector power dissipation	P_C	40	W
		2.0	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics ($T_C=25^\circ\text{C}$)

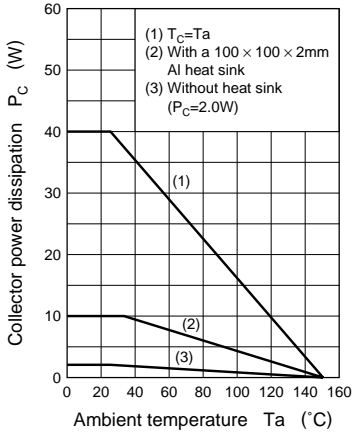
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = -400\text{V}, I_E = 0$			-100	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = -7\text{V}, I_C = 0$			-100	μA
Collector to emitter voltage	V_{CEO}	$I_C = -10\text{mA}, I_B = 0$	-400			V
Forward current transfer ratio	h_{FE1}^*	$V_{CE} = -5\text{V}, I_C = -0.5\text{A}$	20		100	
	h_{FE2}	$V_{CE} = -5\text{V}, I_C = -2\text{A}$	8			
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -2\text{A}, I_B = -0.4\text{A}$			-1.0	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = -2\text{A}, I_B = -0.4\text{A}$			-1.5	V
Transition frequency	f_T	$V_{CE} = -10\text{V}, I_C = -0.5\text{A}, f = 1\text{MHz}$		15		MHz
Turn-on time	t_{on}	$I_C = -2\text{A},$			1.0	μs
Storage time	t_{stg}	$I_{B1} = -0.4\text{A}, I_{B2} = 0.4\text{A},$			2.5	μs
Fall time	t_f	$V_{CC} = -100\text{V}$			1.0	μs

* h_{FE1} Rank classification

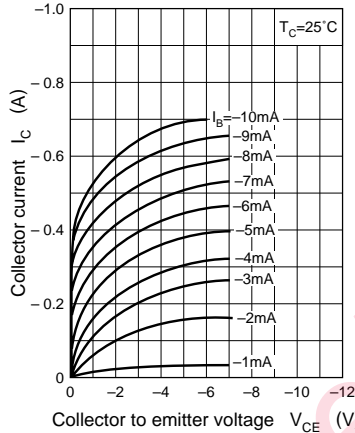
Rank	Q	P
h_{FE1}	20 to 60	50 to 100



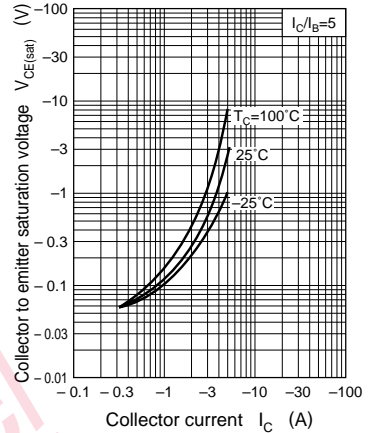
$P_C - T_a$



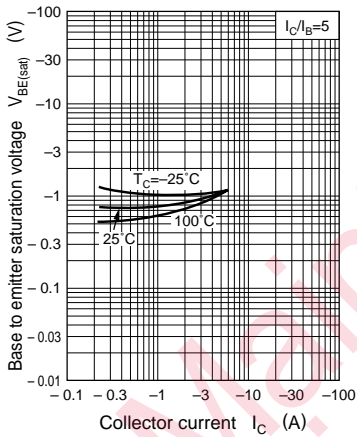
$I_C - V_{CE}$



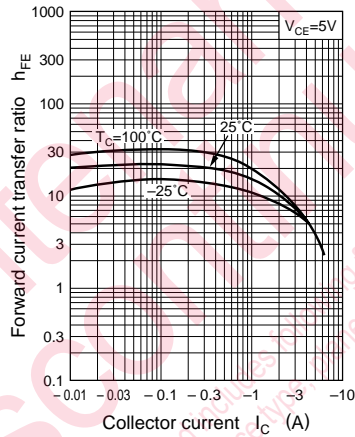
$V_{CE(sat)} - I_C$



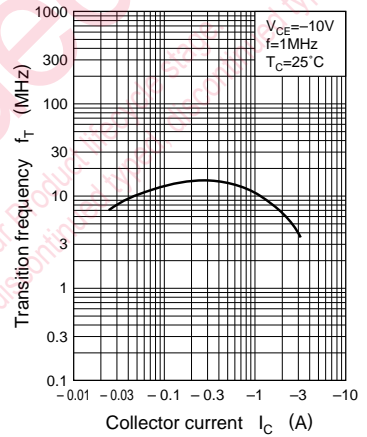
$V_{BE(sat)} - I_C$



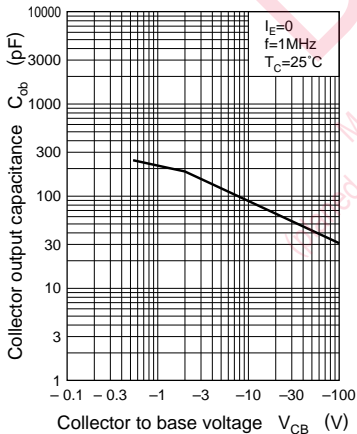
$h_{FE} - I_C$



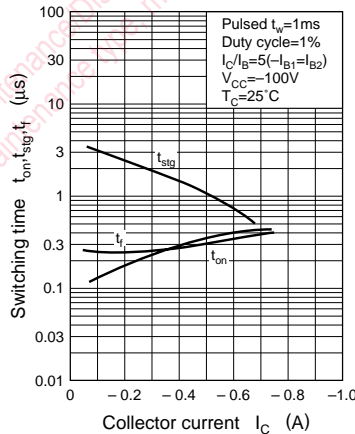
$f_T - I_C$



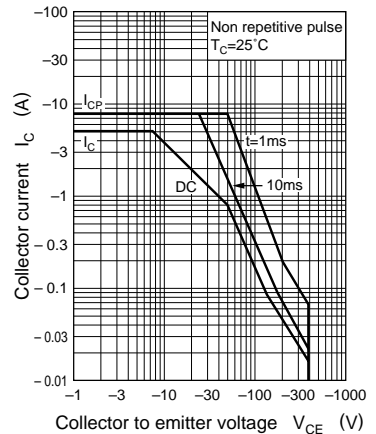
$C_{ob} - V_{CB}$



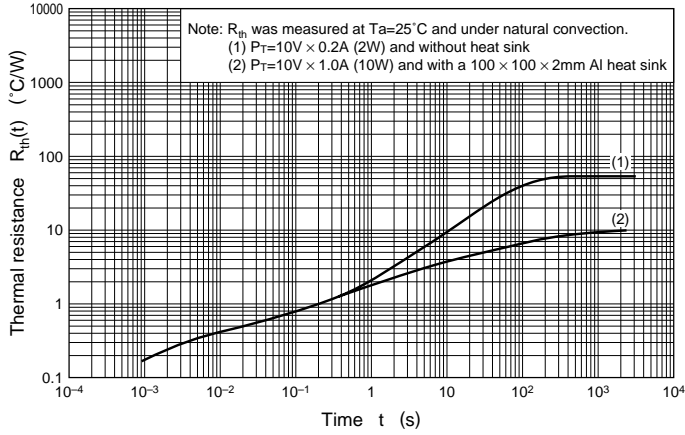
$t_{on}, t_{stg}, t_f - I_C$



Area of safe operation (ASO)



$$R_{th(t)} \text{ --- } t$$



Maintenance/Discontinued

Maintenance/Discontinued includes following four Product lifecycle stage.
 (planned maintenance type, maintenance type, planned discontinued type, discontinued type)

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