

# 2SA1499

Silicon PNP epitaxial planar type

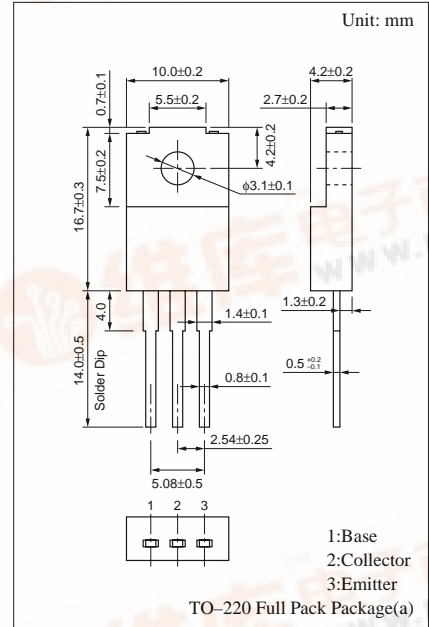
For high-speed switching

### Features

- High forward current transfer ratio  $h_{FE}$
- High-speed switching
- High collector to base voltage  $V_{CBO}$
- 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	Rated	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	$I_{CP}$	-1.2	A
Collector current	$I_C$	-0.6	A
Collector power dissipation	$P_C$	$T_C=25^\circ\text{C}$	25
		$T_a=25^\circ\text{C}$	2
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$



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

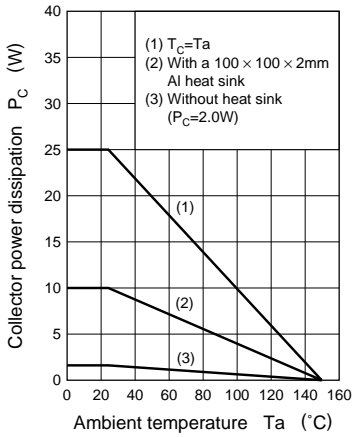
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = -400\text{V}, I_E = 0$			-100	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = -7\text{V}, I_C = 0$			-100	$\mu\text{A}$
Collector to emitter voltage	$V_{CEO}$	$I_C = -10\text{mA}, I_B = 0$	-400			V
Forward current transfer ratio	$h_{FE1}^*$	$V_{CE} = -5\text{V}, I_C = -100\text{mA}$	30		160	
	$h_{FE2}$	$V_{CE} = -5\text{V}, I_C = -300\text{mA}$	10			
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -300\text{mA}, I_B = -60\text{mA}$			-1.0	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = -300\text{mA}, I_B = -60\text{mA}$			-1.2	V
Transition frequency	$f_T$	$V_{CE} = -10\text{V}, I_C = -100\text{mA}, f = 1\text{MHz}$		15		MHz
Turn-on time	$t_{on}$	$I_C = -300\text{mA},$			1.0	$\mu\text{s}$
Storage time	$t_{stg}$	$I_{B1} = -60\text{mA}, I_{B2} = 60\text{mA},$			3.5	$\mu\text{s}$
Fall time	$t_f$	$V_{CC} = -100\text{V}$			1.0	$\mu\text{s}$

\* $h_{FE1}$  Rank classification

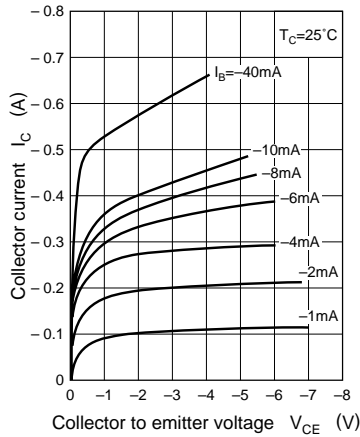
Rank	Q	P	O
$h_{FE1}$	30 to 60	50 to 100	80 to 160



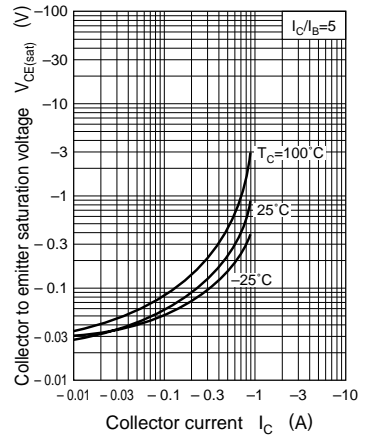
$P_C - T_a$



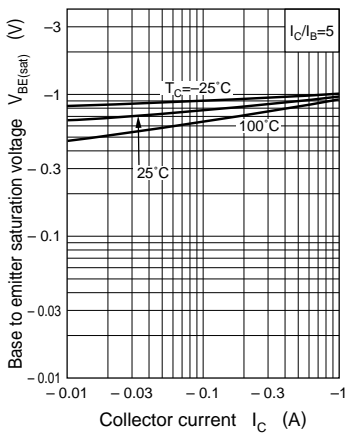
$I_C - V_{CE}$



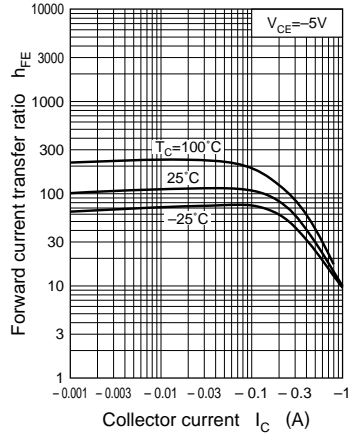
$V_{CE(sat)} - I_C$



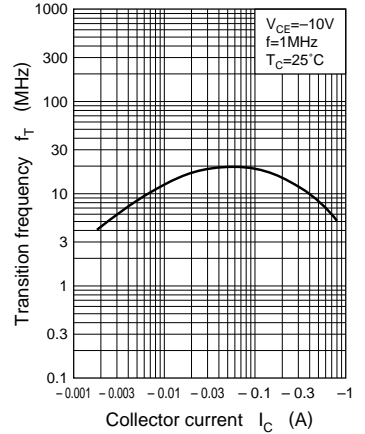
$V_{BE(sat)} - I_C$



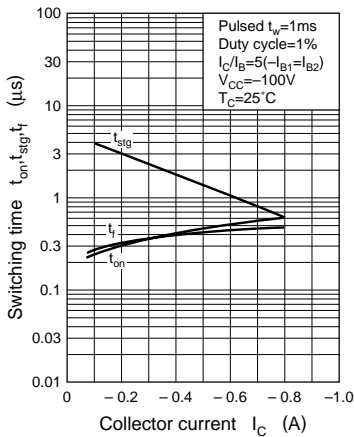
$h_{FE} - I_C$



$f_T - I_C$



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



Area of safe operation (ASO)

