

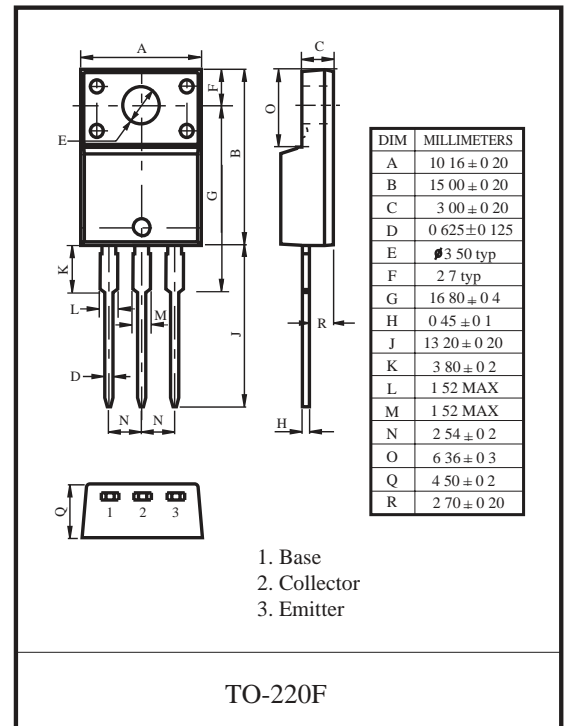
FTD1499 TRANSISTOR (NPN)

FEATURES

- Extremely Satisfactory Linearity of the Forward Current Transfer Ratio h_{FE}
- Wide Safe Operation Area
- High Transition Frequency f_T
- Full-pack Package which can be Installed to the Heat Sink with One Screw.

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	5	A
P_C	Collector Power Dissipation	2	W
T_J	Junction temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55to+150	$^\circ\text{C}$



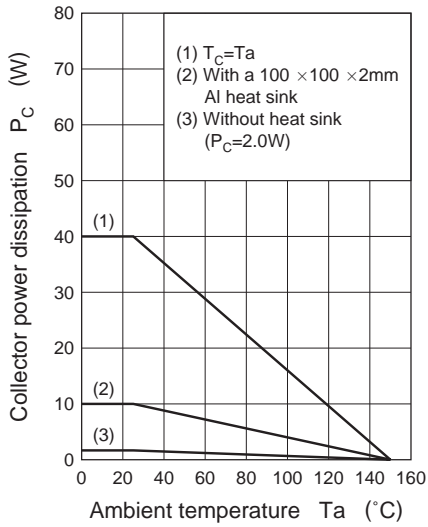
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\ \mu\text{A}, I_E=0$	100			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}, I_B=0$	100			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\ \mu\text{A}, I_C=0$	5			V
Collector cut-off current	I_{CEO}	$V_{CE}=50\text{V}, I_B=0$			50	μA
Collector cut-off current	I_{CBO}	$V_{CB}=100\text{V}, I_E=0$			50	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=3\text{V}, I_C=0$			50	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=5\text{V}, I_C=20\text{mA}$	20			
	$h_{FE(2)}$	$V_{CE}=5\text{V}, I_C=1\text{A}$	60		200	
	$h_{FE(3)}$	$V_{CE}=5\text{V}, I_C=3\text{A}$	20			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=3\text{A}, I_B=0.3\text{A}$			2	V
Base-emitter voltage	V_{BE}	$V_{CE}=5\text{V}, I_C=3\text{A}$			1.8	V
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$		90		pF
Transition frequency	f_T	$V_{CE} = 5\text{V}, I_C = 0.5\text{A}, f = 1\text{MHz}$		20		MHz

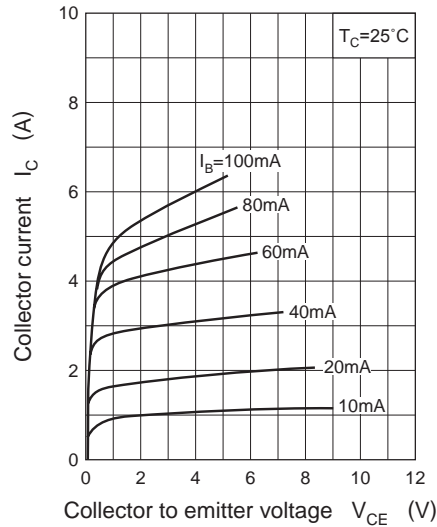
CLASSIFICATION OF h_{FE2}

Rank	Q	P
Range	60-120	100-200

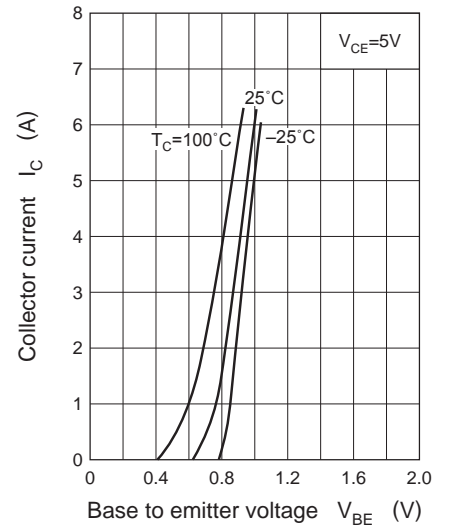
$P_C — T_a$



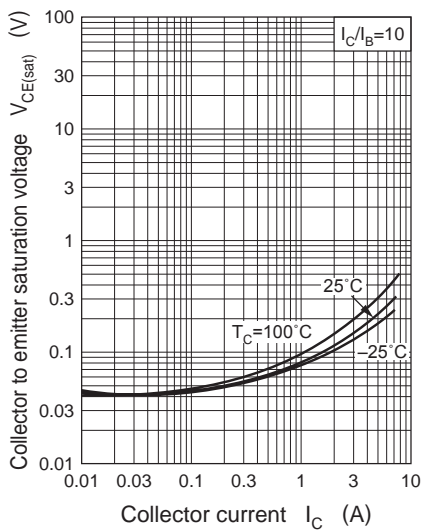
$I_C — V_{CE}$



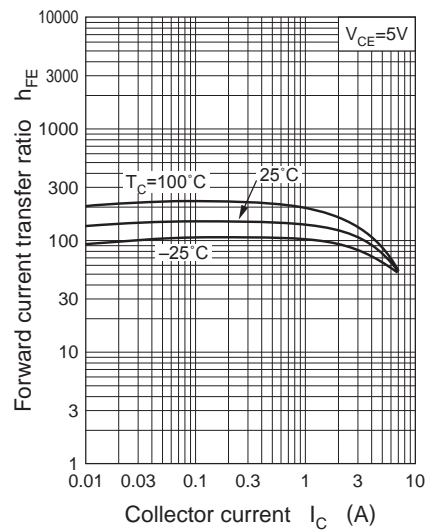
$I_C — V_{BE}$



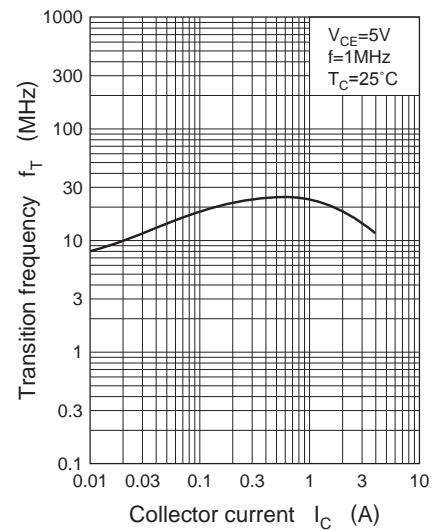
$V_{CE(sat)} — I_C$



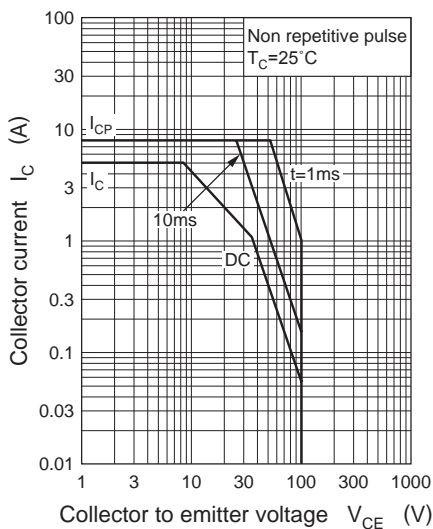
$h_{FE} — I_C$



$f_T — I_C$



Area of safe operation (ASO)



$R_{th(t)} — t$

