

TO-92 Plastic-Encapsulate Transistors

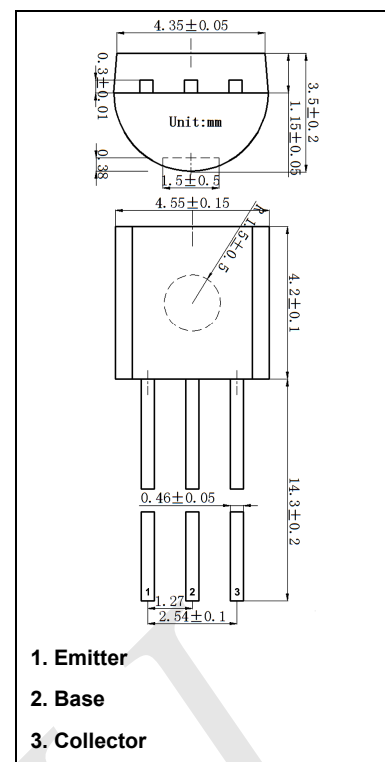
A42H331 NPN Transistors

Features

- High Voltage

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

Symbol	Parameter	Value	Unit
V_{CB0}	Collector Base Voltage	310	V
V_{CEO}	Collector Emitter Voltage	305	V
V_{EBO}	Emitter Base Voltage	5	V
I_c	Collector Current	500	mA
P_c	Collector Power Dissipation	625	mW
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	- 55 to +150	$^{\circ}\text{C}$
$R_{\theta JA}$	Thermal Resistance, junction to Ambient	200	$^{\circ}\text{C}/\text{mW}$
$R_{\theta JC}$	Thermal Resistance, unction to Case	83.3	$^{\circ}\text{C}/\text{mW}$



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

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_c = 100\mu\text{A}, I_E = 0$	310			V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_c = 1\text{mA}, I_B = 0$	305			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E = 100\mu\text{A}, I_C = 0$	5			V
I_{CBO}	Collector cut-off current	$V_{CB} = 200\text{V}, I_E = 0$			0.25	μA
I_{EBO}	Emitter cut-off current	$V_{EB} = 5\text{V}, I_C = 0$			0.1	μA
$h_{FE(1)}$	DC current gain	$V_{CE} = 5\text{V}, I_c = 1\text{mA}$	80			
$h_{FE(2)}$		$V_{CE} = 5\text{V}, I_c = 10\text{mA}$	80			
$h_{FE(3)}$		$V_{CE} = 10\text{V}, I_c = 1\text{mA}$	60			
$h_{FE(4)}$		$V_{CE} = 10\text{V}, I_c = 10\text{mA}$	80		200	
$h_{FE(5)}$		$V_{CE} = 10\text{V}, I_c = 30\text{mA}$	75			
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_c = 20\text{mA}, I_B = 2\text{mA}$			0.2	V
$V_{BE(sat)}$	Base-emitter saturation voltage	$I_c = 20\text{mA}, I_B = 2\text{mA}$			0.9	V
f_T	Transition frequency	$V_{CE} = 20\text{V}, I_c = 10\text{mA}, f = 30\text{MHz}$	50			MHz

Classification OF $h_{FE(1)}$

Rank	A	B
Range	80-150	150-200

Typical Characteristics

