

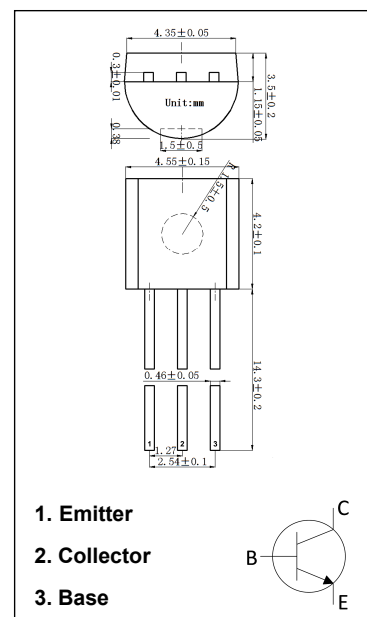
TO-92 Plastic-Encapsulate Transistors

ALJ13001

NPN Transistors

Features

- Power switching transistor
 $P_{CM} : 1.25 \text{ W}$ ($T_{amb}=25^{\circ}\text{C}$)
- Collector current
 $I_{CM} : 0.2 \text{ A}$
- Collector-base voltage
 $V_{(BR)CBO} : 700 \text{ V}$
- Operating and storage junction temperature range
 $T_J, T_{stg} : -55^{\circ}\text{C}$ to $+150^{\circ}\text{C}$



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

Symbol	Parameter	Value	Unit
V_{CEO}	Collector Emitter Voltage	450	V
V_{CBO}	Collector Base Voltage	700	V
V_{EBO}	Emitter Base Voltage	7	V
I_{CM}	Collector Current	0.2	A
P_{CM}	Collector Power Dissipation	1.25	W
T_J, T_{stg}	Operating and storage junction temperature range	- 55 to +150	$^{\circ}\text{C}$

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	$I_C=100\mu\text{A}, I_E=0$	700			V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=1\text{mA}, I_B=0$	450			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=100\mu\text{A}, I_C=0$	7			V
I_{CBO}	Collector cut-off current	$V_{CB}=700\text{V}, I_E=0$			100	μA
I_{CEO}	Collector cut-off current	$V_{CE}=450\text{V}, I_B=0$			200	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=7\text{V}, I_C=0$			100	μA
$h_{FE(1)}$	DC current gain	$V_{CE}=20\text{V}, I_C=20\text{mA}$	10		40	
$h_{FE(2)}$		$V_{CE}=10\text{V}, I_C=0.25\text{mA}$	5			
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C=50\text{mA}, I_B=10\text{mA}$			0.5	V
$V_{BE(sat)}$	Base-emitter saturation voltage	$I_C=50\text{mA}, I_B=10\text{mA}$			1.2	V
f_T	Transition frequency	$V_{CE}=20\text{V}, I_C=20\text{mA}, f=1\text{MHz}$	8			MHz
t_f	Fall time	$I_C=50\text{mA}, I_{B1}=-I_{B2}=5\text{mA}, V_{CC}=45\text{V}$			0.3	μs
t_s	Storage time				2.0	μs

Classification Of $h_{FE(1)}$

Range	10-15	15-20	20-25	25-30	30-35	35-40
-------	-------	-------	-------	-------	-------	-------

Typical Characteristics

