



# TO-92 Plastic-Encapsulate Transistors

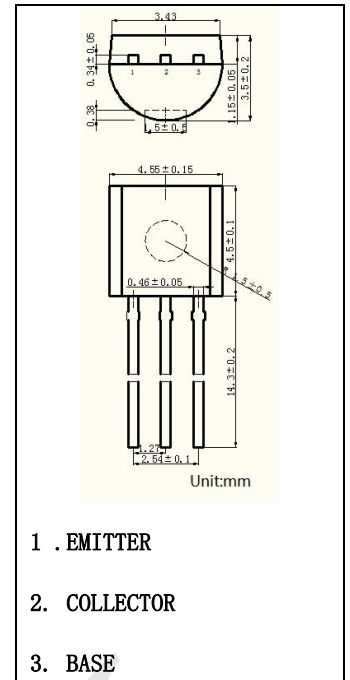
## ALJ13003-72 TRANSISTOR (NPN)

### FEATURES

Power switching applications

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

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	600	V
$V_{CEO}$	Collector-Emitter Voltage	480	V
$V_{EBO}$	Emitter-Base Voltage	9	V
$I_C$	Collector Current	0.5	A
$P_C$	Collector Power Dissipation	800	mW
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~150	$^\circ\text{C}$



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

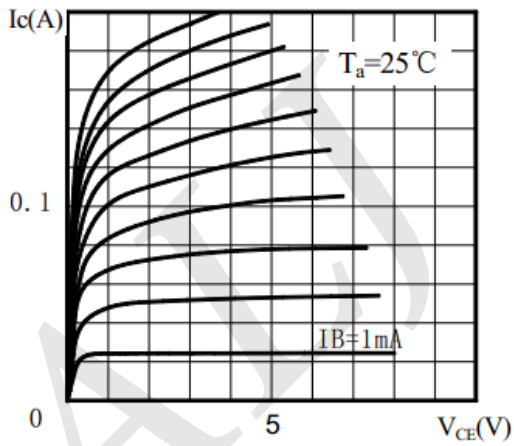
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	600			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	480			V
Emitter-Base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	9			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=600\text{V}, I_E=0$			10	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=9\text{V}, I_C=0$			10	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE}=10\text{V}, I_C=400\text{mA}$	15		30	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=200\text{mA}, I_B=40\text{mA}$			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=200\text{mA}, I_B=40\text{mA}$			1.5	V
Transition frequency	$f_T$	$V_{CE}=10\text{V}, I_C=0.1\text{A}, f=1\text{MHZ}$	5			MHZ
Storage time	$t_s$	UI9600, $I_C=0.1\text{A}$	2		5	$\mu\text{s}$
Rise time	$t_r$				1	$\mu\text{s}$
Fall time	$t_f$				1	$\mu\text{s}$

### CLASSIFICATION OF $h_{FE}$

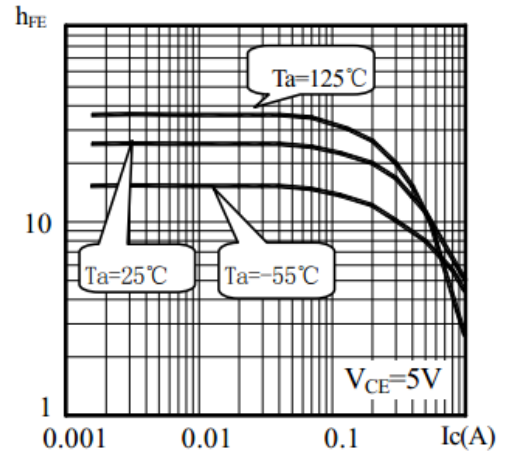
Rank			
Range	15-20	20-25	25-30

# Typical Characteristics

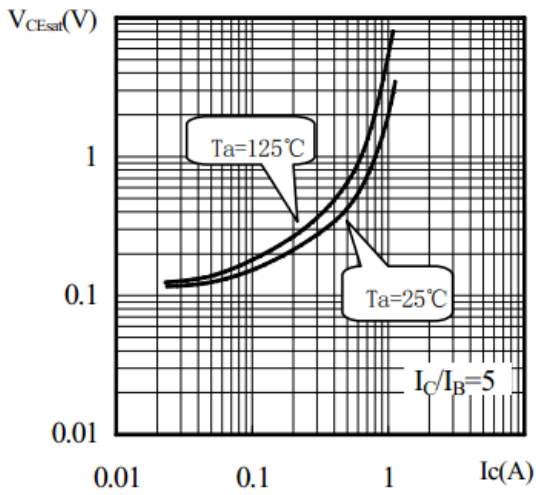
输出特性曲线 ( $I_C$ - $V_{CE}$ )



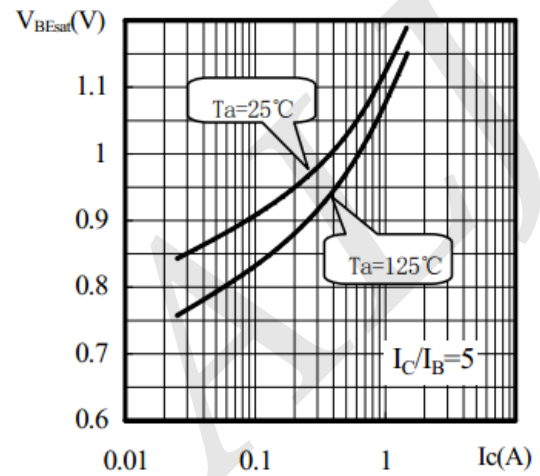
$h_{FE}$  -  $I_C$  关系曲线



$V_{CEsat}$  -  $I_C$  关系曲线



$V_{BEsat}$  -  $I_C$  关系曲线



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