

# Transistors

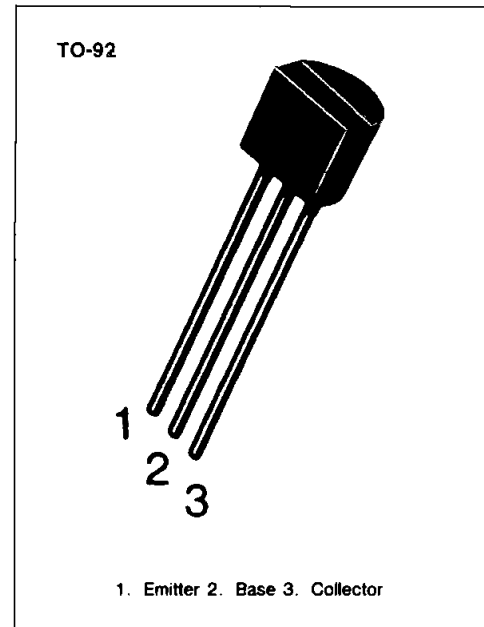
## USP5172

### AMPLIFIER TRANSISTOR

- Collector-Emitter Voltage:  $V_{CE0} = 25V$
- Collector Dissipation:  $P_C (\text{max}) = 625mW$

### ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	25	V
Collector-Emitter Voltage	$V_{CEO}$	25	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	100	mA
Collector Dissipation	$P_C$	625	mW
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55 ~ 150	$^\circ C$

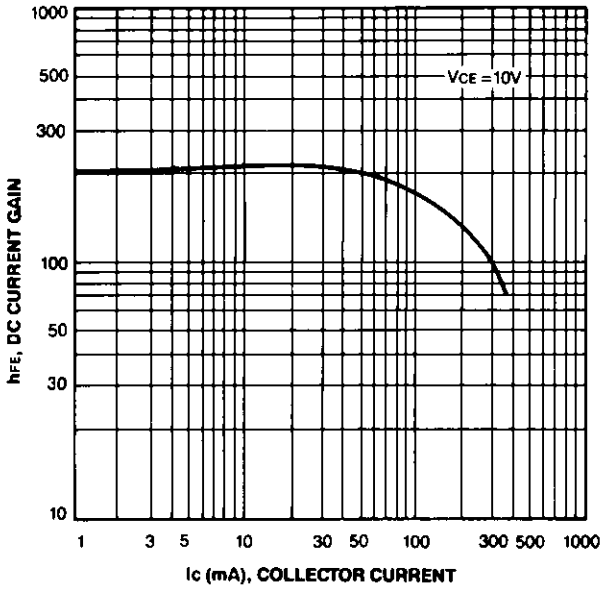


### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )

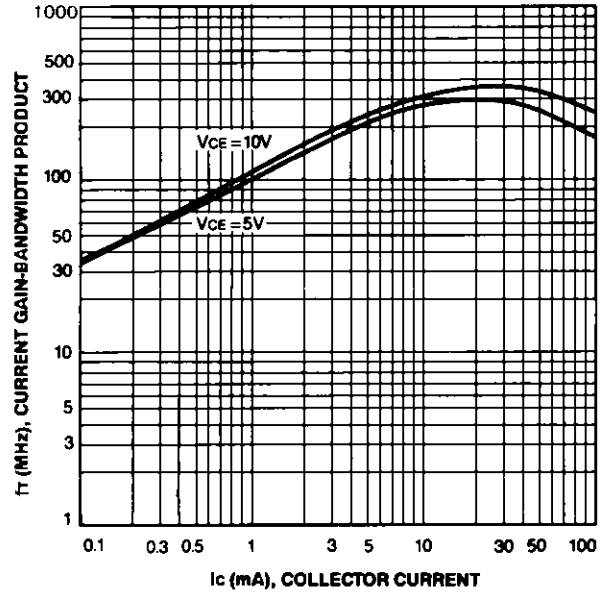
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = 10mA, I_B = 0$	25			V
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 25V, I_E = 0$			100	nA
Collector Cut-off Current	$I_{CES}$	$V_{CE} = 25V, V_{BE} = 0$			100	nA
Emitter Cut-off Current	$I_{EBO}$	$V_{BE} = 5V, I_C = 0$			100	nA
*DC Current Gain	$h_{FE}$	$I_C = 10mA, V_{CE} = 10V$	100		500	
Collector-Emitter Saturation Voltage	$V_{CE} (\text{sat})$	$I_C = 10mA, I_B = 1mA$			0.25	V
Base-Emitter Saturation Voltage	$V_{BE} (\text{sat})$	$I_C = 10mA, I_B = 1mA$		0.75		V
Current Gain Bandwidth Product	$f_T$	$I_C = 2mA, V_{CE} = 5V$		120		MHz
Base Emitter On Voltage	$V_{BE} (\text{on})$	$I_C = 10mA, V_{CE} = 10V$	0.5		1.2	V

\* Pulse Test: Pulse Width = 300 $\mu s$ , Duty Cycle = 2%

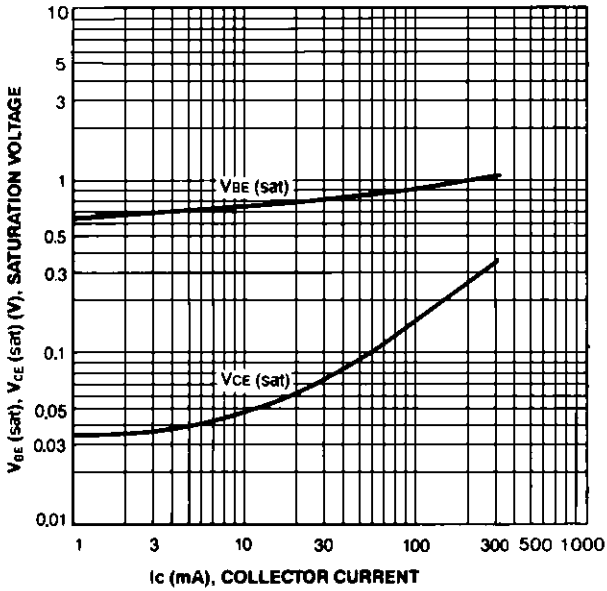
**DC CURRENT GAIN**



**CURRENT GAIN-BANDWIDTH**



**COLLECTOR-EMITTER SATURATION VOLTAGE  
BASE-EMITTER SATURATION VOLTAGE**



**OUTPUT CAPACITANCE**

