

# 2N2905

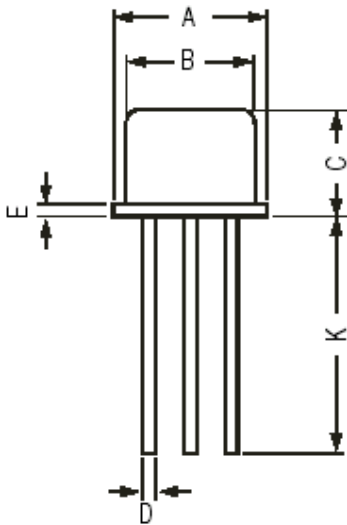
## Low Power Bipolar Transistors



### Features:

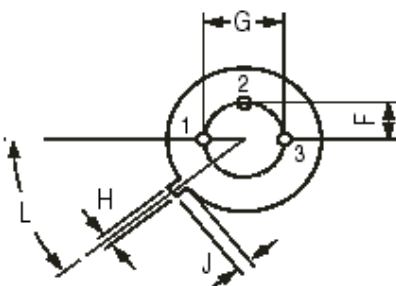
- PNP Silicon Planar switching Transistors.
- General Purpose Transistor.

### TO-39 Metal Can Package



Dimensions	Minimum	Maximum
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	-	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	-
L	42°	48°

Dimensions : Millimetres



### Pin Configuration

1. Emitter
2. Base
3. Collector



### Absolute Maximum Ratings

Description	Symbol	Value	Unit
Collector Emitter Voltage	$V_{CEO}$	40	V
Collector Base Voltage	$V_{CBO}$	60	
Emitter Base Voltage	$V_{EBO}$	5	
Collector Current Continuous	$I_C$	600	mA
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate Above $25^\circ\text{C}$	$P_D$	600	mW
Power Dissipation at $T_C = 25^\circ\text{C}$ Derate Above $25^\circ\text{C}$		3.43	mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	-65 to +200	$^\circ\text{C}$

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

Description	Symbol	Test Condition	Minimum	Maximum	Unit
Collector Emitter Voltage	$*V_{CEO}$	$I_C = 10\text{mA}, I_B = 0$	40	-	V
Collector Base Voltage	$V_{CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	60	-	
Emitter Base Voltage	$V_{EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	5	-	
Collector Cut off Current	$I_{CEX}$	$V_{CE} = 30\text{V}, V_{BE} = 0.5\text{V}$	-	50	nA
Collector Cut off Current	$I_{CBO}$	$V_{CB} = 50\text{V}, I_E = 0$	-	20	nA
		$V_{CB} = 50\text{V}, I_E = 0,$ $T_a = 150^\circ\text{C}$	-	-	$\mu\text{A}$
Base Current	$I_B$	$V_{CE} = 30\text{V}, V_{BE} = 0.5\text{V}$	-	50	nA
DC Current Gain	$h_{FE}$	$I_C = 0.1\text{mA}, V_{CE} = 10\text{V}$ $I_C = 1\text{mA}, V_{CE} = 10\text{V}$ $I_C = 10\text{mA}, V_{CE} = 10\text{V}$ $*I_C = 150\text{mA}, V_{CE} = 10\text{V}$ $*I_C = 500\text{mA}, V_{CE} = 10\text{V}$	-	>35 >50 >75 100 - 300 >30	-
<b>Small Signal Characteristics</b>					
Collector Emitter Saturation Voltage	$*V_{CE(sat)}$	$I_C = 150\text{mA}, I_B = 15\text{mA}$ $I_C = 500\text{mA}, I_B = 50\text{mA}$	-	0.4 1.6	V
Base Emitter Saturation Voltage	$*V_{BE(sat)}$	$I_C = 150\text{mA}, I_B = 15\text{mA}$ $I_C = 500\text{mA}, I_B = 50\text{mA}$	-	1.3 2.6	
Transition Frequency	$**f_T$	$I_C = 50\text{mA}, V_{CE} = 20\text{V}$ $f = 100\text{MHz}$	200	-	MHz
Output Capacitance	$C_{obo}$	$V_{CB} = 10\text{V}, I_E = 0$ $f = 100\text{KHz}$	-	8.0	pF
Input Capacitance	$C_{ibo}$	$V_{BE} = 2\text{V}, I_C = 0$ $f = 100\text{KHz}$	-	30	

\*Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

\*\* $f_T$  is defined as the frequency at which  $h_{FE}$  extrapolates to unity.

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## Low Power Bipolar Transistors



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

Description	Symbol	Test Condition	Minimum	Maximum	Unit
<b>Switching Time</b>					
Delay Time	$t_d$	$I_C = 150\text{mA}, I_{B1} = 15\text{mA}, V_{CC} = 30\text{V}$	-	10	nS
Rise Time	$t_r$		-	40	
Turn on Time	$t_{on}$		-	45	
Storage Time	$t_s$	$I_C = 150\text{mA}, I_{B1} = I_{B2} = 15\text{mA}, V_{CC} = 6\text{V}$	-	80	
Fall Time	$t_f$		-	30	
Turn off Time	$t_{off}$		-	100	

### Part Number Table

Package	Part Number
TO-39	2N2905



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## Low Power Bipolar Transistors

### Notes:

### International Sales Offices:



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