

2N2906A, 2907A

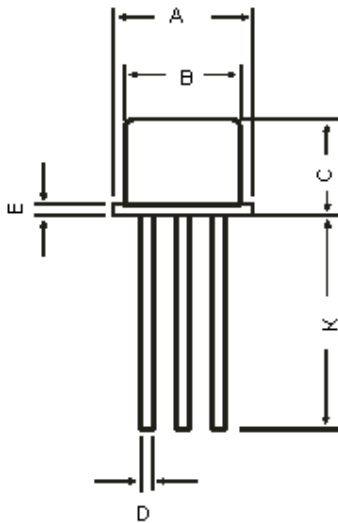
High Speed Switching Transistors



Features:

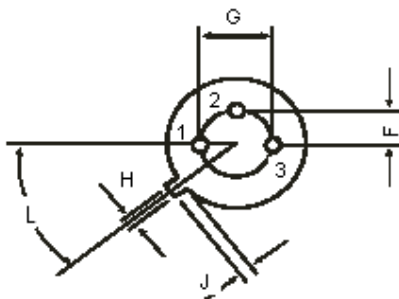
- PNP Silicon Planar Switching Transistors.
- Fast switching devices exhibiting short turn-off and low saturation voltage characteristics.
- Switching and Linear Application DC and VHF Amplifier Applications.

TO-18 Metal Can Package



Dimensions	Minimum	Maximum
A	5.24	5.84
B	4.52	4.97
C	4.31	5.33
D	0.40	0.53
E	-	0.76
F	-	1.27
G	-	2.97
H	0.91	1.17
J	0.71	1.21
K	12.7	-
L	45°	

Dimensions : Millimetres



Pin Configuration

1. Emitter
2. Base
3. Collector



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Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Collector Emitter Voltage	V_{CEO}	60	V
Collector Base Voltage	V_{CBO}		
Emitter Base Voltage	V_{EBO}		
Collector Current Continuous	I_C	600	mA
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate above 25°C	P_D	400 2.28	mW mW/ $^\circ\text{C}$
Power Dissipation at $T_c = 25^\circ\text{C}$ Derate above 25°C	P_D	1.8 10.3	W mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_j, T_{stg}	-	$^\circ\text{C}$

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

Parameter	Symbol	Test Condition	Value		Unit
			Minimum	Maximum	
Collector Emitter Voltage	V_{CEO}^*	$I_C = 10\text{mA}, I_B = 0$	60	-	V
Collector Base Voltage	V_{CBO}	$I_C = 10\mu\text{A}, I_E = 0$		-	V
Emitter Base Voltage	V_{EBO}	$I_E = 10\mu\text{A}, I_C = 0$	5.0	-	V
Collector Cut off Current	I_{CBO}	$V_{CB} = 50\text{V}, I_E = 0$	-	10	nA
	I_{CEX}	$T_a = 150^\circ\text{C}$ $V_{CB} = 50\text{V}, I_E = 0$ $V_{CE} = 30\text{V}, V_{BE} = 0.5\text{V}$	- -	10 50	μA nA
Base current	I_B	$V_{CE} = 30\text{V}, V_{BE} = 0.5\text{V}$	-	50	nA
Collector Emitter Saturation Voltage	$V_{CE(Sat)}^*$	$I_C = 150\text{mA}, I_B = 15\text{mA}$	-	0.4	V
		$I_C = 500\text{mA}, I_B = 50\text{mA}$	-	1.6	
Base Emitter Saturation Voltage	$V_{BE(Sat)}^*$	$I_C = 150\text{mA}, I_B = 15\text{mA}$	-	1.3	V
		$I_C = 500\text{mA}, I_B = 50\text{mA}$	-	2.6	V
			2N2906A	2N2907A	
DC Current Gain	h_{FE}	$I_C = 0.1\text{mA}, V_{CE} = 10\text{V}$	>40	>75	-
		$I_C = 1\text{mA}, V_{CE} = 10\text{V}$	>40	>100	
		$I_C = 10\text{mA}, V_{CE} = 10\text{V}$	>40	>100	
		$I_C = 150\text{mA}, V_{CE} = 10\text{V}^*$	40 - 120	100 - 300	
		$I_C = 500\text{mA}, V_{CE} = 10\text{V}^*$	>40	>50	



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Electrical Characteristics (Ta = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Value		Unit
			Minimum	Maximum	
Dynamic Characteristics					
Transition Frequency	$f_{T^{**}}$	$I_C = 50\text{mA}, V_{CE} = 20\text{V}, f = 100\text{MHz}$	200	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 100\text{KHz}$	-	8.0	pF
Input Capacitance	C_{ib}	$V_{BE} = 2\text{V}, I_C = 0, f = 100\text{KHz}$	-	30	
Switching Time					
Delay Time	t_d	$I_C = 150\text{mA}, I_{B1} = 15\text{mA}$	-	10	ns
Rise Time	t_r	$V_{CC} = 30\text{V}$	-	40	
Turn on Time	t_{on}	-	-	45	
Storage time	t_s	$I_C = 150\text{mA}, I_{B1} = I_{B2} = 15\text{mA}$	-	80	
Fall Time	t_f	$V_{CC} = 6\text{V}$	-	30	
Turn Off Time	t_{off}	-	-	100	

*Pulse Test :- Pulse Width = 300 μ s, Duty Cycle = 2%.

**ft is defined as the frequency at which h_{fe} extrapolates to unity.

Specifications

V_{CEO} maximum (V)	I_C maximum (A)	$V_{CE(sat)}$ maximum (V) at $I_C = 150\text{mA}$	t_{off} maximum (ns)	h_{FE} minimum at $I_C = 150\text{mA}$	P_D at $T_a = 25^\circ\text{C}$ (mW)	Package and Pin Out	Part Number
60	0.6	0.4	100	40	400	TO-18	2N2906A 2N2907A



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High Speed Switching Transistors



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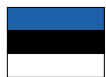
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