

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



Pin Configuration

1. Emitter
2. Base
3. Collector

Absolute Maximum Ratings

Description	Symbol	Value	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 @ $T_a = 25^\circ\text{C}$ Derate above 25°C	P_D	400 2.28	mW mW/°C
Power Dissipation @ $T_c = 25^\circ\text{C}$ Derate Above 25°C	P_D	1.8 10.3	W mW/°C
Operating and Storage Junction Temperature Range	T_j, T_{stg}	-55 to +175	°C

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

Description	Symbol	Test Condition	Min.	Max.	Unit
Collector Emitter Voltage	$*V_{CEO}$	$I_C=10\text{mA}, I_B=0$	60	-	V
Collector Base Voltage	V_{CBO}	$I_C=10\mu\text{A}, I_E=0$		-	
Emitter Base Voltage	V_{EBO}	$I_E=10\mu\text{A}, I_C=0$		5	
Collector Cut Off Current	I_{CBO} I_{CEX}	$V_{CB} = 50\text{V}, I_E = 0$ $T_A = 150^\circ\text{C}$	-	10	nA
		$V_{CB} = 50\text{V}, I_E = 0$	-	10	μA
		$V_{CE}=30\text{V}, V_{BE}=0.5\text{V}$	-	50	nA
Base Current	I_B	$V_{CE}=30\text{V}, V_{BE}=0.5\text{V}$	-	50	nA
Collector Emitter Saturation Voltage	$V_{CE(SAT)}^*$	$I_C = 150\text{mA}, I_B = 15\text{mA}$	-	1.3	V
		$I_C = 500\text{mA}, I_B = 50\text{mA}$	-	2.6	
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	

Description	Symbol	Test Condition	Min.	Max.	Unit
			2N2906	2N2907	
DC Current Gain	h_{FE}	$I_C = 0.1\text{mA}, V_{CE} = 10\text{V}$	>20	>35	-
		$I_C = 1\text{mA}, V_{CE} = 10\text{V}$	>25	>50	
		$I_C = 10\text{mA}, V_{CE} = 10\text{V}$	>35	>75	
		$I_C = 150\text{mA}, V_{CE} = 10\text{V}^*$	40 - 120	100 - 300	
		$I_C = 500\text{mA}, V_{CE} = 10\text{V}^*$	>20	>30	

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

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

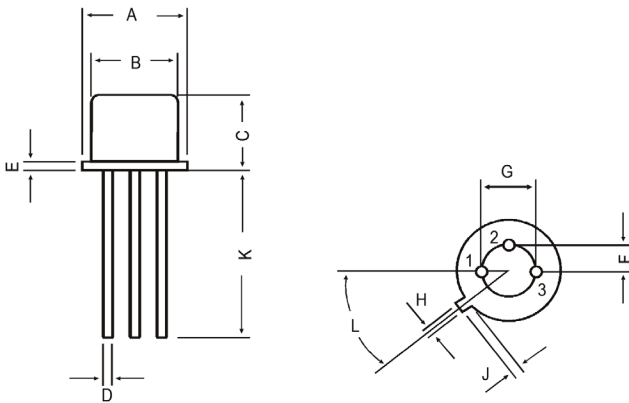
Parameter	Symbol	Test Condition	Value		Unit
			Min.	Max.	
Dynamic Characteristics					
Transition Frequency	f_T^{**}	$I_C = 50\text{mA}, V_{CE} = 20\text{V}, f = 100\text{MHz}$	200	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 100\text{kHz}$	-	8	pF
Input Capacitance	C_{ib}	$V_{BE} = 2\text{V}, I_C = 0, f = 100\text{kHz}$	-	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	

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

Specification Table

V_{CE0} 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

TO-18 Metal Can Package



Dimensions	Min.	Max.
A	5.24	5.84
B	4.52	4.97
C	4.31	5.33
D	0.4	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

Part Number Table

Description	Part Number
High Speed Switching Transistors	2N2906A
	2N2907A

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