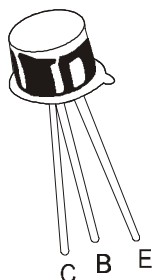


PNP SILICON PLANAR SWITCHING TRANSISTORS

2N2906 2N2907



TO-18
Metal Can Package

Switching and Linear Application

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector Emitter Voltage	V_{CEO}	40	V
Collector Base Voltage	V_{CBO}	60	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current Continuous	I_C	600	mA
Power Dissipation @ $T_a=25^\circ\text{C}$	P_D	400	mW
Derate Above 25°C		2.28	mW/ $^\circ\text{C}$
Power Dissipation @ $T_c=25^\circ\text{C}$	P_D	1.8	W
Derate Above 25°C		10.3	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	MIN	TYP	MAX	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			V
Emitter Base Voltage	V_{EBO}	$I_E=10\mu\text{A}, I_C=0$	5			V
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
		$V_{CB}=50\text{V}, I_E=0, T_a=150^\circ\text{C}$			20	μA
Base Current	I_B	$V_{CE}=30\text{V}, V_{BE}=0.5\text{V}$			50	nA

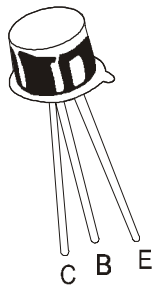
2N2906

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 $\leq 300\text{ms}$, Duty Cycle $\leq 2\%$

2N2906_2907Rev010303E



TO-18
Metal Can Package

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

SMALL SIGNAL CHARACTERISTICS

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
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	V
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
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
	C_{ibo}	$V_{BE}=2\text{V}$, $I_C=0$, $f=100\text{KHz}$			30	pF

SWITCHING TIME

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
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	ns
Turn On Time	t_{on}				45	ns
Storage Time	t_s	$I_C=150\text{mA}$, $I_{B1}=$ $I_{B2}=15\text{mA}$, $V_{CC}=6\text{V}$			80	ns
Fall Time	t_f				30	ns
Turn Off Time	t_{off}				100	ns

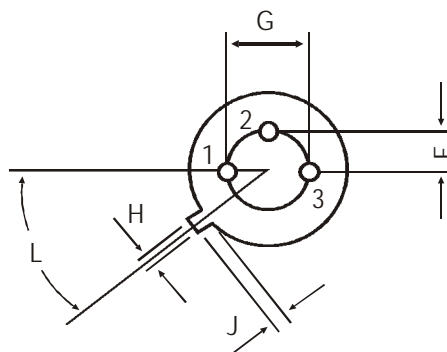
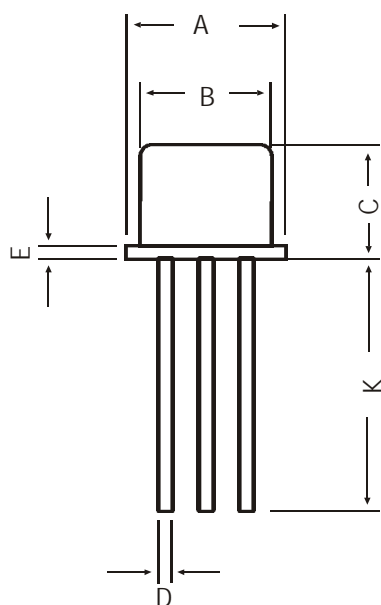
*Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

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

TO-18

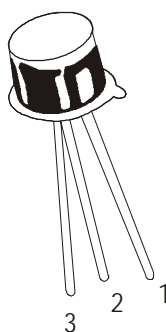
Metal Can Package

TO-18 Metal Can Package



All dimensions in mm.

DIM	MIN	MAX
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	12.70	—
L	45 DEG	



PIN CONFIGURATION

1. EMITTER
2. BASE
3. COLLECTOR

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-18	1K/polybag	350 gm/1K pcs	3" x 7.5" x 7.5"	5K	17" x 15" x 13.5"	80K	34 kgs

2N2906_2907Rev010303E

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered Trademark of
Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.

Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119

email@cdil.com www.cdilsemi.com