



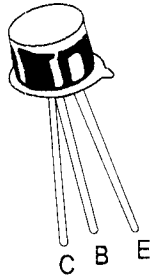
SOLID STATE INC.

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NPN SILICON PLANAR SWITCHING TRANSISTORS

2N2906, 07



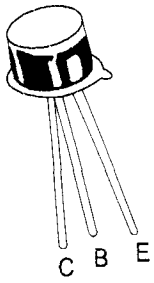
TO-18
Metal Can Package

Switching and Linear Application DC and VHF Amplifier Applications

DESCRIPTION	SYMBOL	2N 2906, 07	UNITS
Collector Emitter Voltage	V_{CEO}	40	V
Collector Base Voltage	V_{CB0}	60	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current Continuous	I_C	600	A
Power Dissipation @ $T_a=25^\circ\text{C}$	P_D	400	W
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	MAX	UNITS
Collector Emitter Breakdown Voltage	BV_{CEO}^*	$I_C=10\text{mA}, I_B=0$	40		V
Collector Base Breakdown Voltage	BV_{CB0}	$I_C=10\mu\text{A}, I_E=0$	60		V
Emitter Base Breakdown Voltage	BV_{EBO}	$I_E=10\mu\text{A}, I_C=0$	5		V
Collector Cutoff Current	I_{CB0}	$V_{CB}=50\text{V}, I_E=0$		20	nA
		$V_{CB}=50\text{V}, I_E=0,$		20	μA
		$T_a=150^\circ\text{C}$			μA
Collector Cutoff Current	I_{CEX}	$V_{CE}=30\text{V}, V_{BE}=0.5\text{V}$		50	nA
Base Current	I_B	$V_{CE}=30\text{V}, V_{BE}=0.5\text{V}$		50	nA
Collector Emitter Saturation Voltage	$V_{CE(Sat)}^*$	$I_C=150\text{mA}, I_B=15\text{mA}$		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



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ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	2N2906		2N2907		UNITS
			MIN	MAX	MIN	MAX	
DC Current Gain	h_{FE}	$I_C=0.1mA, V_{CE}=10V$	20		35		
		$I_C=1mA, V_{CE}=10V$	25		50		
		$I_C=10mA, V_{CE}=10V$	35		75		
		$I_C=150mA, V_{CE}=10V^*$	40	120	100	300	
		$I_C=500mA, V_{CE}=10V^*$	20		30		

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNITS
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DYNAMIC CHARACTERISTICS

Transition Frequency	f_T	$I_C=50mA, V_{CE}=20V$ $f=100MHz$	200		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=100KHz$		8	pF
Input Capacitance	C_{ib}	$V_{BE}=2V, I_C=0, f=100KHz$		30	pF

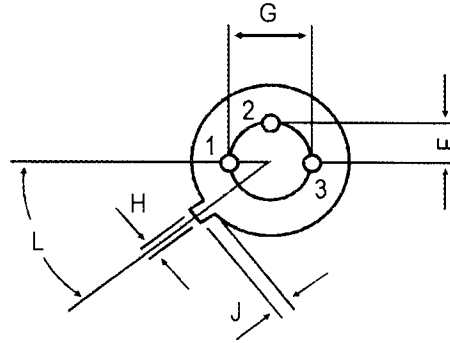
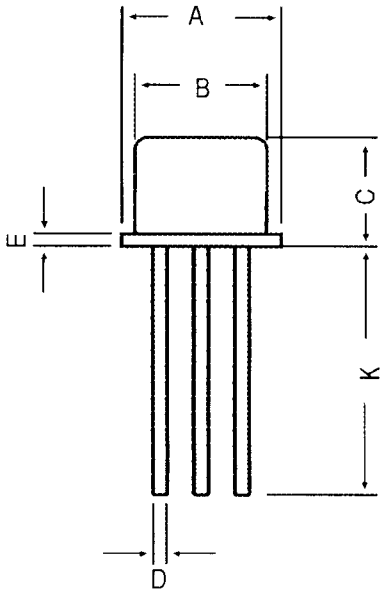
SWITCHING CHARACTERISTICS

Delay time	t_d			10	ns
Rise time	t_r	$I_C=150mA, I_{B1}=15mA$ $V_{CC}=30V$		40	ns
Turn on Time	t_{on}			45	ns
Storage time	t_s			80	ns
Fall time	t_f	$I_C=150mA, I_{B1}=I_{B2}=15mA,$		30	ns
Turn Off Time	t_{off}	$V_{CE}=6V$		100	ns

***Pulse Test: Length $\leq 300\mu s$, Duty Cycle $\leq 2\%$**

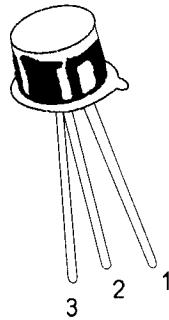
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All dimensions in mm.

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