



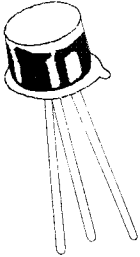
# SOLID STATE INC.

46 FARRAND STREET  
BLOOMFIELD, NEW JERSEY 07003

www.solidstateinc.com

## NPN SILICON PLANAR EPITAXIAL TRANSISTORS

**2N3700**  
**2N3701**  
**TO-18**



General purpose amplifier

### ABSOLUTE MAXIMUM RATINGS.

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector -Base Voltage	VCBO	140	V
Collector -Emitter Voltage	VCEO	80	V
Emitter -Base Voltage	VEBO	7.0	V
Collector Current	IC	1.0	A
Power Dissipation @Ta=25 deg C	PD	500	mW
Derate Above 25 deg C		2.85	mW/deg C
@TC=25 deg C	PD	1.8	W
Derate Above 25 deg C		10.6	mW/deg C
Operating And Storage Junction Temperature Range	Tj, Tstg	-65 to +200	deg C
<b>THERMAL RESISTANCE</b>			
Junction to Case	Rth(j-c)	70	deg C/W
Junction to Ambient	Rth(j-a)	245	deg C/W

### ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector-Cut off Current	ICBO	VCB=90V, IE=0	-	10	nA
		VCB=90V, IE=0	-	10	uA
Emitter-Cut off Current	IEBO	VEB=5V, IC=0	-	10	nA
Collector -Base Voltage	VCBO	IC=100uA, IE=-0	140	-	V
Collector -Emitter Voltage	VCEO*	IC=30mA, IB=0	80	-	V
Emitter -Base Voltage	VEBO	IE=100uA, IC=-0	7.0	-	V
Collector Emitter (Sat) Voltage	VCE(Sat)*	IC=150mA, IB=15mA	-	0.2	V
		IC=500mA, IB=50mA	-	0.5	V
Base Emitter (Sat) Voltage	VBE(Sat) *	IC=150mA, IB=15mA	-	1.1	V
			<b>2N3700</b>	<b>2N3701</b>	
DC Current Gain	hFE*	IC=0.1mA, VCE=10V	>50	30-100	
		IC=10mA, VCE=10V	>90	40-120	
		IC=150mA, VCE=10V	100-300	40-120	
		IC=500mA, VCE=10V	>50	30-100	
		IC=1A, VCE=10V	>15	>15	
		Tc= -55 deg C			
		IC=150mA, VCE=10V	>40	-	

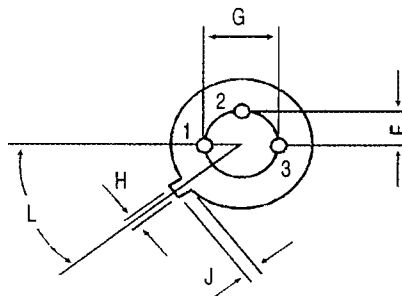
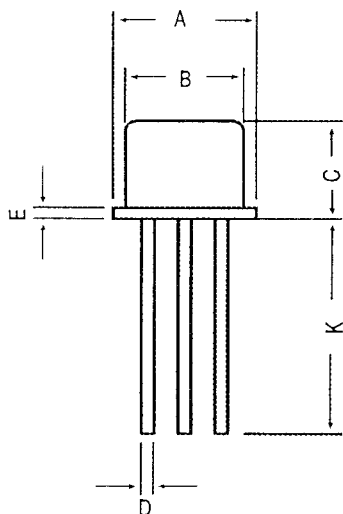
**ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)**

**2N3700-01**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
<b>Dynamic Characteristics</b>			<b>2N3700</b>	<b>2N3701</b>	
Small Signal Current Gain	hfe	IC=1mA, VCE=5V f=1KHz	80-400	30-200	
Transition Frequency	ft	VCE=10V, IC=50mA, f=20MHz	100-400	>80	MHz
Input Capacitance	Cibo		<60	<60	pF
Output Capacitance	Cobo	VCB=10V, f=1MHz	<12	<12	pF
Collector Base Time Constant	rbb'cb'c	f=79.8MHz	15-400	25-400	ps
Noise Figure	NF	VCE=10V, IC=100uA RS=1kohms, f=1kHz	-	4.0	dB

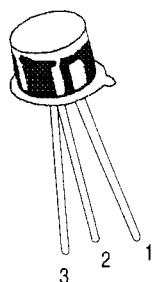
**\*Pulse Test: Pulse Width =300us, Duty Cycle=1%**

**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