

# NPN SILICON HIGH FREQUENCY TRANSISTOR

**DESCRIPTION:**

The **ASI SD1006** is a High Frequency Transistor for General Purpose Amplifier Applications.

**MAXIMUM RATINGS**

$I_C$	400 mA
$V_{CEO}$	30 V
$V_{CBO}$	50 V
$P_{DISS}$	3.5 W @ $T_C = 25^\circ C$
$T_J$	-65 °C to +200 °C
$T_{STG}$	-65 °C to +200 °C
$\theta_{JC}$	50 °C/W

**PACKAGE STYLE TO-39**

DIMENSIONS	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
$\phi a$	0.190	0.210	4.83	5.33
A	0.240	0.260	6.10	6.60
$\phi b$	0.016	0.021	0.406	0.533
$\phi b_2$	0.016	0.019	0.406	0.483
$\phi D$	0.350	0.370	8.89	9.40
$\phi D_1$	0.315	0.335	8.00	8.51
h	0.009	0.125	0.229	3.18
f	0.028	0.034	0.711	0.864
k	0.029	0.040	0.737	1.02
l	0.500		12.70	
$l_1$		0.050		1.27
$l_2$	0.250		6.35	
P	0.100		2.54	
Q				
a	45° NOMINAL			
$\beta$	90° NOMINAL			

1 = EMITTER    2 = BASE  
3 = COLLECTOR

**CHARACTERISTICS**  $T_C = 25^\circ C$ 

SYMBOL	TEST CONDITIONS	MINIMUM	TYPICAL	MAXIMUM	UNITS
$BV_{CEO}$	$I_C = 5.0 \text{ mA}$	30			V
$BV_{CBO}$	$I_C = 100 \mu A$	50			V
$BV_{EBO}$	$I_E = 100 \mu A$	5.0			V
$I_{CEO}$	$V_{CE} = 28 \text{ V}$			100	$\mu A$
$h_{FE}$	$V_{CE} = 15 \text{ V}$ $I_C = 50 \text{ mA}$	30		300	---
$f_t$	$V_{CE} = 15 \text{ V}$ $I_C = 50 \text{ mA}$	1500	1800		MHz
$C_{ob}$	$V_{CB} = 30 \text{ V}$ $f = 100 \text{ KHz}$		2.5	3.5	pF
$C_{ib}$	$V_{EB} = 0.5 \text{ V}$ $f = 100 \text{ KHz}$		8.0	10	pF
$NF_{NB}$	$V_{CE} = 10 \text{ V}$ $I_C = 10 \text{ mA}$ $f = 2000 \text{ MHz}$		2.7		dB
$NF_{BB}$	$V_{CE} = 15 \text{ V}$ $I_C = 50 \text{ mA}$ $f = 216 \text{ MHz}$		7.0	8.0	dB
$G_{VE}$	$V_{CE} = 15 \text{ V}$ $I_C = 50 \text{ mA}$ $f = 216 \text{ MHz}$		7.2	6.8	dB
$X_{MOD}$	$V_{CE} = 15 \text{ V}$ $I_C = 50 \text{ mA}$ $P_{out} = +45 \text{ dbmV}$		-60	-57	dB
$2_{NDO}$	$V_{CE} = 15 \text{ V}$ $I_C = 50 \text{ mA}$ $P_{out} = +45 \text{ dbmV}$		-60	-50	dB