



2N5943

# NPN SILICON HIGH FREQUENCY TRANSISTOR

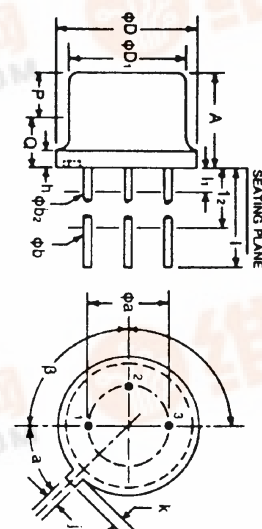
## DESCRIPTION:

The **2N5943** is a High Frequency Transistor for General Purpose Amplifier Applications.

## MAXIMUM RATINGS

$I_C$	400 mA
$V_{CE}$	30 V
$P_{DISS}$	1.0 W @ $T_A = 25^\circ C$ 3.5 W @ $T_C = 25^\circ C$
$T_J$	$-65^\circ C$ to $+200^\circ C$
$T_{STG}$	$-65^\circ C$ to $+200^\circ C$
$\theta_{JC}$	125 $^\circ C/W$

**PACKAGE STYLE TO-39**



SYMBOL	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
j	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
$BV_{CEO}$	$I_C = 5.0$ mA			30			V
$BV_{CBO}$	$I_C = 100$ $\mu A$			40			V
$BV_{EBO}$	$I_E = 100$ $\mu A$			3.5			V
$I_{CEO}$	$V_{CE} = 20$ V					50	$\mu A$
$I_{CBO}$	$V_{CB} = 15$ V					10	$\mu A$
$h_{FE}$	$V_{CE} = 15$ V	$I_C = 50$ mA		25		300	---
$V_{CE(SAT)}$	$I_C = 100$ mA		$I_B = 10$ mA			0.2	V
$V_{BE(SAT)}$	$I_C = 100$ mA		$I_B = 10$ mA			1.0	V
$f_t$	$V_{CE} = 15$ V	$I_C = 25$ mA	$f = 200$ MHz	1000		2400	MHz
		$I_C = 50$ mA	$f = 200$ MHz	120			
		$I_C = 100$ mA	$f = 200$ MHz	1000			
$C_{cb}$	$V_{CB} = 30$ V	$f = 100$ KHz		1.0		3.5	pF
$C_{eb}$	$V_{CB} = 0.5$ V	$f = 100$ KHz				15	pF
$h_{fe}$	$V_{CE} = 15$ V	$I_C = 50$ mA	$f = 1.0$ KHz	25		350	---
$r_{b'cC}$	$V_{CE} = 15$ V	$I_C = 50$ mA	$f = 31.8$ MHz	2.0		20	pS
$N_F$	$V_{CE} = 15$ V	$I_C = 50$ mA	$f = 200$ MHz			8.0	dB
$G_{pe}$	$V_{CC} = 15$ V	$I_C = 50$ mA	$f = 200$ MHz	7.0			dB
$I_M$	$V_{CC} = 15$ V	$I_C = 50$ mA	$V_{out} = +50$ dbmV			-50	dB
$X_M$	$V_{CC} = 15$ V	$I_C = 50$ mA	$V_{out} = +50$ dbmV			-45	dB