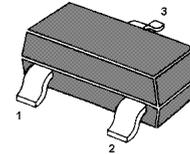


NPN Silicon Epitaxial Planar Transistor

High frequency amplifier

The transistor is subdivided into three groups, R, O and Y, according to its DC current gain.



1.Base 2.Emitter 3.Collector
SOT-23 Plastic Package

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	30	V
Collector Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	20	mA
Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_s	-55 +150	$^\circ\text{C}$

Characteristics at $T_{amb}=25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE} = 6\text{ V}$, $I_C = 1\text{ mA}$ Current Gain Group	R	h_{FE}	40	-	80	-
	O	h_{FE}	60	-	120	-
	Y	h_{FE}	90	-	180	-
Collector Emitter Saturation Voltage at $I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$	$V_{CE(sat)}$	-	-	0.3	V	
Collector Cutoff Current at $V_{CB} = 30\text{ V}$	I_{CBO}	-	-	0.1	μA	
Emitter Cutoff Current at $V_{EB} = 4\text{ V}$	I_{EBO}	-	-	0.1	μA	
Collector Base Breakdown Voltage at $I_C = 10\text{ }\mu\text{A}$	$V_{(BR)CBO}$	30	-	-	V	
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	20	-	-	V	
Emitter Base Breakdown Voltage at $I_E = 10\text{ }\mu\text{A}$	$V_{(BR)EBO}$	4	-	-	V	
Gain Bandwidth Product at $V_{CE} = 6\text{ V}$, $-I_E = 1\text{ mA}$	f_T	400	600	-	MHz	
Output Capacitance at $V_{CB} = 6\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$	C_{OB}	-	1	-	pF	
Collector to Base Time Constant at $V_{CE} = 6\text{ V}$, $-I_E = 1\text{ mA}$, $f = 31.9\text{ MHz}$	$C_C\text{-rb'b}$	-	12	-	ps	
Noise Figure at $V_{CE} = 6\text{ V}$, $-I_E = 1\text{ mA}$, $f = 100\text{ MHz}$, $R_G = 50\text{ }\Omega$	NF	-	3	-	dB	

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