

TRANSISTOR (NPN)

FEATURES

- Small reverse transfer capacitance: $C_{re} = 0.55\text{pF (typ.)}$
- Low noise figure: $NF = 2\text{dB (typ.)}$ ($f = 100\text{ MHz}$)

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{EBO}	Emitter-Base Voltage	4	V
I_C	Collector Current -Continuous	20	mA
P_C	Collector Power Dissipation	100	mW
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55-150	$^\circ\text{C}$

SOT-323



1. BASE
2. EMITTER
3. COLLECTOR

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	30			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	4			V
Collector cut-off current	I_{CBO}	$V_{CB} = 40\text{V}, I_E = 0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$			0.5	μA
DC current gain	h_{FE}	$V_{CE} = 6\text{V}, I_C = 1\text{mA}$	40		200	
Collector-base time constant	$C_c, \tau_{bb'}$	$V_{CE} = 6\text{V}, I_C = 1\text{mA}, f = 30\text{MHz}$			25	ps
Transition frequency	f_T	$V_{CE} = 6\text{V}, I_C = 1\text{mA}$	260	550		MHz
Reverse transfer capacitance	C_{re}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		0.55		pF
Noise figure	NF	$V_{CC} = 6\text{V}, I_C = 1\text{mA}, f = 100\text{MHz}$		2	5	dB
Power gain	G _{pe}		17	23		dB

CLASSIFICATION OF h_{FE}

Rank	R	O	Y
Range	40-80	70-140	100-200
Marking	QR	QO	QY



