

TRANSISTOR (NPN)

FEATURES

- Low collector to emitter saturation voltage
 $V_{CE(sat)}=0.3V \text{ max} (@I_C=100mA, I_B=10mA)$
- Excellent linearity of DC forward current gain

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

Symbol	Parameter	Value	Units
V_{CBO}	Collector- Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	0.2	A
P_C	Collector Power Dissipation	150	mW
T_J	Junction Temperature	125	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55-125	$^\circ\text{C}$

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

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

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100 \mu\text{A}, I_E=0$	50		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 100 \mu\text{A}, I_B=0$	50		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E= 100 \mu\text{A}, I_C=0$	6		V
Collector cut-off current	I_{CBO}	$V_{CB}= 50 \text{ V}, I_E=0$		0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}= 6\text{V}, I_C=0$		0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}= 6\text{V}, I_C= 1\text{mA}$	150	800	
	$h_{FE(2)}$	$V_{CE}= 6\text{V}, I_C= 0.1\text{mA}$	50		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=100\text{mA}, I_B= 10\text{mA}$		0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C= 100\text{mA}, I_B= 10\text{mA}$		1	V
Transition frequency	f_T	$V_{CE}= 6\text{V}, I_C= 10\text{mA}$	180		MHz
Collector output capacitance	C_{ob}	$V_{CE}=6\text{V}, I_E=0, f=1\text{MHz}$		4	pF
Noise figure	NF	$V_{CE}=6\text{V}, I_E=-0.1\text{mA}, f=1\text{KHz}, R_G=2\text{K}\Omega$		15	dB

CLASSIFICATION OF $h_{FE(1)}$

Rank	E	F	G
Range	150~300	250~500	400~800
Marking	LE	LF	LG



