

TRANSISTOR (NPN)

FEATURES

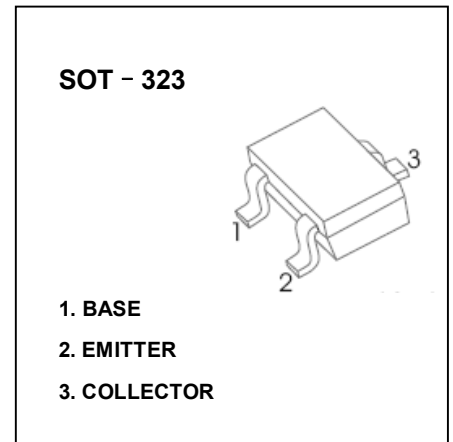
- High DC Current Gain

APPLICATIONS

- General Purpose Amplification

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	120	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	50	mA
P_C	Collector Power Dissipation	150	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	833	$^\circ\text{C/W}$
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^\circ\text{C}$



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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	120			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	120			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=120\text{V}, I_E=0$			50	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			50	nA
DC current gain	$h_{FE(1)}^*$	$V_{CE}=6\text{V}, I_C=1\text{mA}$	135		900	
	$h_{FE(2)}$	$V_{CE}=6\text{V}, I_C=0.1\text{mA}$	100			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=10\text{mA}, I_B=1\text{mA}$			0.3	V
Base-emitter voltage	V_{BE}	$V_{CE}=6\text{V}, I_C=1\text{mA}$	0.55		0.65	V
Transition frequency	f_T	$V_{CE}=6\text{V}, I_C=1\text{mA}$	50			MHz
Collector output capacitance	C_{ob}	$V_{CB}=30\text{V}, I_E=0, f=1\text{MHz}$			2.5	pF

*Pulse test: pulse width $\leq 350\mu\text{s}$, duty Cycle $\leq 2.0\%$.

CLASSIFICATION OF $h_{FE(1)}$

RANK	D15	D16	D17	D18
RANGE	135 - 270	200 - 400	300 - 600	450 - 900
MARKING	D15	D16	D17	D18