

TRANSISTOR(NPN)

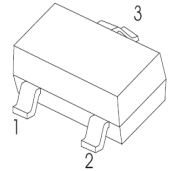
FEATURES

- Excellent h_{FE} Linearity
- High DC Current Gain

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	20	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	1	A
P_C	Collector Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	625	$^{\circ}\text{C/W}$
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^{\circ}\text{C}$

SOT - 23



1. BASE
2. EMITTER
3. COLLECTOR

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=0.1\text{mA}$, $I_E=0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}$, $I_B=0$	20			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=0.1\text{mA}$, $I_C=0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB}=35\text{V}$, $I_E=0$			0.1	μA
Collector cut-off current	I_{CEO}	$V_{CE}=20\text{V}$, $I_B=0$			5	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5\text{V}$, $I_C=0$			0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=1\text{V}$, $I_C=1\text{mA}$	290			
	$h_{FE(2)}$	$V_{CE}=1\text{V}$, $I_C=100\text{mA}$	300		1000	
	$h_{FE(3)}$	$V_{CE}=1\text{V}$, $I_C=300\text{mA}$	300			
	$h_{FE(4)}$	$V_{CE}=1\text{V}$, $I_C=500\text{mA}$	300			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=600\text{mA}$, $I_B=20\text{mA}$			0.55	V
Transition frequency	f_T	$V_{CE}=10\text{V}$, $I_E=50\text{mA}$, $f=1\text{MHz}$	100			MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$		9		pF

CLASSIFICATION OF $h_{FE(2)}$

RANK	B	C	D
RANGE	300 - 550	500 - 700	650 - 1000
MARKING	28S		