

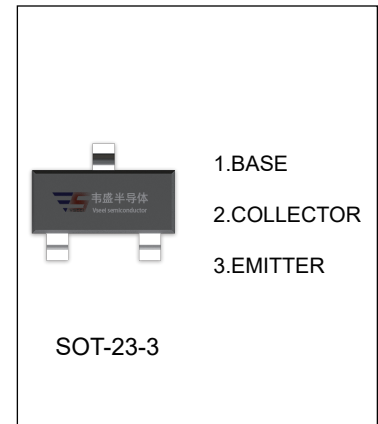
**VS201NL** TRANSISTOR (NPN)

**FEATURES**

- High Collector Current Capability
- Low Collector-emitter Saturation Voltage
- High Efficiency Leading to Less Heat Generation
- Reduced PCB Requirements
- Alternated Effectively to MOSFETS in Specific Applications

**APPLICATIONS**

- Power Management
- Peripheral Driver


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

Symbol	Parameter	Value	Unit
$V_{\text{CBO}}$	Collector-Base Voltage	30	V
$V_{\text{CEO}}$	Collector-Emitter Voltage	20	V
$V_{\text{EBO}}$	Emitter-Base Voltage	5	V
$I_{\text{C}}$	Collector Current	1	A
$P_{\text{C}}$	Collector Power Dissipation	300	mW
$R_{\theta\text{JA}}$	Thermal Resistance From Junction To Ambient	417	$^{\circ}\text{C}/\text{W}$
$T_{\text{J}}, T_{\text{stg}}$	Operation Junction and Storage Temperature Range	-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	$V_{(\text{BR})\text{CBO}}$	$I_{\text{C}}=100\mu\text{A}, I_{\text{E}}=0$	30			V
Collector-emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	$I_{\text{C}}=1\text{mA}, I_{\text{B}}=0$	20			V
Emitter-base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	$I_{\text{E}}=100\mu\text{A}, I_{\text{C}}=0$	5			V
Collector cut-off current	$I_{\text{CBO}}$	$V_{\text{CB}}=30\text{V}, I_{\text{E}}=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{\text{EBO}}$	$V_{\text{EB}}=4\text{V}, I_{\text{C}}=0$			0.1	$\mu\text{A}$
DC current gain	$h_{\text{FE}(1)}$	$V_{\text{CE}}=2\text{V}, I_{\text{C}}=100\text{mA}$	350			
	$h_{\text{FE}(2)}$	$V_{\text{CE}}=2\text{V}, I_{\text{C}}=500\text{mA}$	300			
	$h_{\text{FE}(3)}$	$V_{\text{CE}}=2\text{V}, I_{\text{C}}=1\text{A}$	280			
Collector-emitter saturation voltage	$V_{\text{CE}(\text{sat})1}$	$I_{\text{C}}=100\text{mA}, I_{\text{B}}=1\text{mA}$			80	mV
	$V_{\text{CE}(\text{sat})2}$	$I_{\text{C}}=500\text{mA}, I_{\text{B}}=50\text{mA}$			110	mV
	$V_{\text{CE}(\text{sat})3}$	$I_{\text{C}}=750\text{mA}, I_{\text{B}}=15\text{mA}$			200	mV
	$V_{\text{CE}(\text{sat})4}^*$	$I_{\text{C}}=1\text{A}, I_{\text{B}}=50\text{mA}$			250	mV
Base-emitter saturation voltage	$V_{\text{BE}(\text{sat})}^*$	$I_{\text{C}}=1\text{A}, I_{\text{B}}=100\text{mA}$			1.1	V
Base-emitter turn-on voltage	$V_{\text{BE}(\text{on})}$	$V_{\text{CE}}=2\text{V}, I_{\text{C}}=100\text{mA}$			0.75	V
Transition frequency	$f_{\text{T}}$	$V_{\text{CE}}=10\text{V}, I_{\text{C}}=100\text{mA}, f=100\text{MHz}$	100			MHz
Collector output capacitance	$C_{\text{ob}}$	$V_{\text{CB}}=10\text{V}, I_{\text{E}}=0, f=1\text{MHz}$			20	pF

\*Pulse test: pulse width  $\leq 300\mu\text{s}$ , duty cycles  $\leq 2.0\%$ .