VS201NL TRANSISTOR (NPN)

1.BASE
2.COLLECTOR
3.EMITTER

SOT-23-3

FEATURES

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

APPLICATIONS

- Power Management
- Peripheral Driver

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	20	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	1	A
P_C	Collector Power Dissipation	300	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	417	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55～+150	℃

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA, I_E=0	30			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA, I_B=0	20			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA, I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=30V, I_E=0			0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=4V, I_C=0			0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE}=2V, I_C=100mA	350			
	$h_{FE(2)}$	V_{CE}=2V, I_C=500mA	300			
	$h_{FE(3)}$	V_{CE}=2V, I_C=1A	280			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	I_C=100mA, I_B=1mA			80	mV
	$V_{CE(sat)2}$	I_C=500mA, I_B=50mA			110	mV
	$V_{CE(sat)3}$	I_C=750mA, I_B=15mA			200	mV
	$V_{CE(sat)4}$*	I_C=1A, I_B=50mA			250	mV
Base-emitter saturation voltage	$V_{BE(sat)}$*	I_C=1A, I_B=100mA			1.1	V
Base-emitter turn-on voltage	$V_{BE(on)}$	V_{CE}=2V, I_C=100mA			0.75	V
Transition frequency	f_T	V_{CE}=10V,I_C=100mA, f=100MHz	100			MHz
Collector output capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz			20	pF

*Pulse test: pulse width ≤300μs, duty cycle≤ 2.0%.