



SOT-23 Plastic-Encapsulate Transistors

CJ201NL 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

MARKING: 201N

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

Symbol	Parameter	Value	Unit
V_{CB0}	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	$^{\circ}\text{C}/\text{W}$
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	$V_{(BR)CB0}$	$I_C=100\mu\text{A}, I_E=0$	30			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	20			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	5			V
Collector cut-off current	I_{CB0}	$V_{CB}=30\text{V}, I_E=0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=2\text{V}, I_C=100\text{mA}$	350			
	$h_{FE(2)}$	$V_{CE}=2\text{V}, I_C=500\text{mA}$	300			
	$h_{FE(3)}$	$V_{CE}=2\text{V}, I_C=1\text{A}$	280			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C=100\text{mA}, I_B=1\text{mA}$			80	mV
	$V_{CE(sat)2}$	$I_C=500\text{mA}, I_B=50\text{mA}$			110	mV
	$V_{CE(sat)3}$	$I_C=750\text{mA}, I_B=15\text{mA}$			200	mV
	$V_{CE(sat)4}^*$	$I_C=1\text{A}, I_B=50\text{mA}$			250	mV
Base-emitter saturation voltage	$V_{BE(sat)}^*$	$I_C=1\text{A}, I_B=100\text{mA}$			1.1	V
Base-emitter turn-on voltage	$V_{BE(on)}$	$V_{CE}=2\text{V}, I_C=100\text{mA}$			0.75	V
Transition frequency	f_T	$V_{CE}=10\text{V}, I_C=100\text{mA}, f=100\text{MHz}$	100			MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$			20	pF

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

