

SOT-89-3L Plastic-Encapsulate Transistors

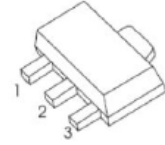
CJ303NL TRANSISTOR (NPN)

FEATURES

- High DC Current Gain
- Ultra Low Collector-Emitter Saturation Voltage

MARKING: 303NL

SOT-89-3L



1. BASE
2. COLLECTOR
3. EMITTER

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	35	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	3	A
P_C	Collector Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	250	$^{\circ}\text{C}/\text{W}$
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	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	$V_{(BR)CBO}$	$I_C=0.1\text{mA}, I_E=0$	50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}, I_B=0$	35			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=0.1\text{mA}, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=35\text{V}, I_E=0$			100	nA
Collector cut-off current	I_{CES}	$V_{CES}=35\text{V}$			100	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			100	nA
DC current gain	h_{FE}^*	$V_{CE}=1.5\text{V}, I_C=1\text{A}$	100			
		$V_{CE}=1.5\text{V}, I_C=1.5\text{A}$	100		400	
		$V_{CE}=3\text{V}, I_C=2\text{A}$	100			
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	$I_C=0.8\text{A}, I_B=26\text{mA}$			0.15	V
		$I_C=1.2\text{A}, I_B=40\text{mA}$			0.2	V
		$I_C=2\text{A}, I_B=66.6\text{mA}$			0.25	V
		$I_C=3\text{A}, I_B=100\text{mA}$			0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}^*$	$I_C=1.2\text{A}, I_B=40\text{mA}$			1	V
		$I_C=3\text{A}, I_B=100\text{mA}$			1.2	V
Base-emitter voltage	V_{BE}^*	$V_{CE}=3\text{V}, I_C=2\text{A}$			1	V
Transition frequency	f_T	$V_{CE}=5\text{V}, I_C=100\text{mA},$ $f=100\text{MHz}$	100			MHz
Collector input capacitance	C_{ib}	$V_{EB}=0.5\text{V}, I_C=0, f=1\text{MHz}$			650	pF
Collector output capacitance	C_{ob}	$V_{CB}=3\text{V}, I_E=0, f=1\text{MHz}$			100	pF
Turn on time	t_{on}	$V_{CC}=10\text{V}, I_C=1\text{A}, I_{B1}=$ $100\text{mA}, R_L=3\Omega$		35		ns
Turn off time	t_{off}	$V_{CC}=10\text{V}, I_C=1\text{A}, I_{B1}=$ $-I_{B2}=100\text{mA}, R_L=3\Omega$		225		ns

*Pulse width=300 μs , Duty cycle<2%.