

SOT-89-3L Plastic-Encapsulate Transistors

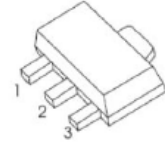
CJ303NL TRANSISTOR (NPN)

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°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C = 0.1mA, I _E =0	50			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =10mA, I _B =0	35			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =0.1mA, I _C =0	5			V
Collector cut-off current	I _{CBO}	V _{CB} =35V, I _E =0			100	nA
Collector cut-off current	I _{CES}	V _{CES} =35V			100	nA
Emitter cut-off current	I _{EBO}	V _{EB} =4V, I _C =0			100	nA
DC current gain	h _{FE} *	V _{CE} =1.5V, I _C =1A	100			
		V _{CE} =1.5V, I _C =1.5A	100		400	
		V _{CE} =3V, I _C =2A	100			
Collector-emitter saturation voltage	V _{CE(sat)} *	I _C =0.8A, I _B =26mA			0.15	V
		I _C =1.2A, I _B =40mA			0.2	V
		I _C =2A, I _B =66.6mA			0.25	V
		I _C =3A, I _B =100mA			0.4	V
Base-emitter saturation voltage	V _{BE(sat)} *	I _C =1.2A, I _B =40mA			1	V
		I _C =3A, I _B =100mA			1.2	V
Base-emitter voltage	V _{BE} *	V _{CE} =3V, I _C =2A			1	V
Transition frequency	f _T	V _{CE} =5V, I _C =100mA, f=100MHz	100			MHz
Collector input capacitance	C _{ib}	V _{EB} =0.5V, I _C =0, f=1MHz			650	pF
Collector output capacitance	C _{ob}	V _{CB} =3V, I _E =0, f=1MHz			100	pF
Turn on time	t _{on}	V _{CC} =10V, I _C =1A, I _{B1} = 100mA, R _L =3Ω		35		ns
Turn off time	t _{off}	V _{CC} =10V, I _C =1A, I _{B1} = -I _{B2} =100mA, R _L =3Ω		225		ns

*Pulse width=300μs, Duty cycle<2%.