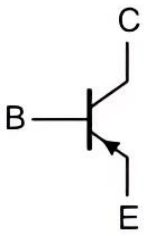
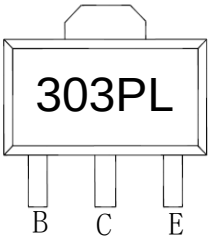
Features

- Small Flat Package
- High DC Current Gain
- Ultra Low Collector-Emitter Saturation Voltage

SOT-89-3L top view



Schematic diagram



Marking and pin assignment

Pb-Free RoHS Halogen-Free

Maximum Ratings (Ta=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-30	V
V_{CEO}	Collector-Emitter Voltage	-30	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	°C/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

Ordering Information (Example)

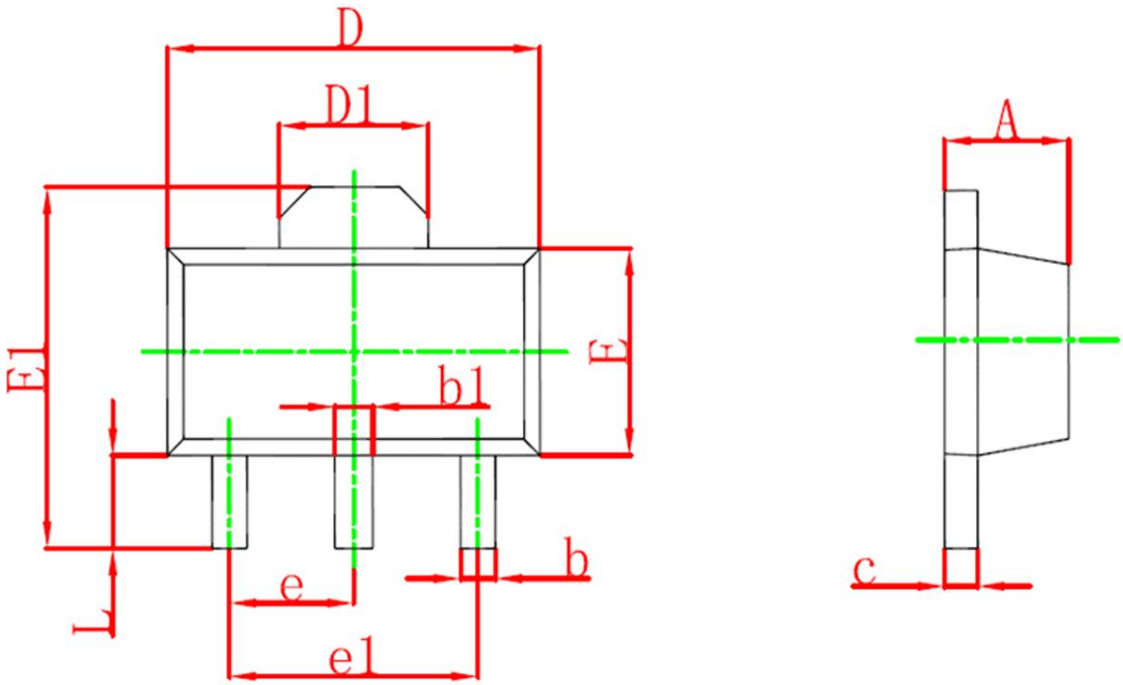
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MLS303PL	SOT-89-3L	303PL	1,000	10,000	40,000	7"reel

Electrical Characteristics (Ta=25℃ unless otherwise specified)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=-0.1mA,I_E=0	-30	--	--	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=-10mA, I_B=0	-30	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=-0.1mA,I_C=0	-5	--	--	V
I_{CBO}	Collector cut-off current	V_{CB}=-35V , I_E=0	--	--	-100	nA
I_{CES}	Collector cut-off current	V_{CES}=-35V	--	--	-100	nA
I_{EBO}	Emitter cut-off current	V_{EB}=-4V , I_C=0	--	--	-100	nA
H_{FE}*	DC current gain	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	--	--	
$V_{CE(sat)}$*	Collector-emitter saturation voltage	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
$V_{BE(sat)}$*	Base-emitter saturation voltage	I_C=-1.2A,I_B=-40mA	--	--	-1	V
		I_C=-3A,I_B=-100mA	--	--	-1.2	V
V_{BE}*	Base-emitter voltage	V_{CE}=-3V, I_C=-2A	--	--	-1	V
C_{ib}	Collector input capacitance	V_{EB}=-0.5V,I_C=0, f=1MHz	--	--	650	pF
t_{on}	Turn on time	V_{CC}=-10V, I_C=-1A, I_{B1}= -100mA,R_L=3Ω	--	35	--	ns
t_{off}	Turn off time	V_{CC}=-10V, I_C=1A, I_{B1}= I_{B2}=-100mA,R_L=3Ω	--	225	--	ns
C_{ob}	Collector output capacitance	V_{CB}=-3V, I_E= 0,f=1MHz	--	100	--	pF
f_T	Transition frequency	V_{CE}=-5V,I_C=-100mA, f=100MHz	100	--	--	MHz

*Pulse width=300μs, Duty cycle＜2%.

SOT-89-3L Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions in Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF		0.061 REF	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP		0.060 TYP	
e1	3.000 TYP		0.118 TYP	
L	0.900	1.200	0.035	0.047