

TRANSISTOR (NPN)

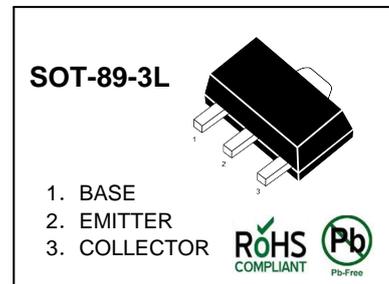
FEATURES

- Compliment to 2N3906U
- Low current
- Low voltage

MARKING: 1A

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

Symbol	Parameter	Value	Unit
V_{CB0}	Collector-Base Voltage	60	V
V_{CE0}	Collector-Emitter Voltage	40	V
V_{EB0}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	0.2	A
P_C	Collector Power Dissipation	0.5	W
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~150	$^{\circ}\text{C}$

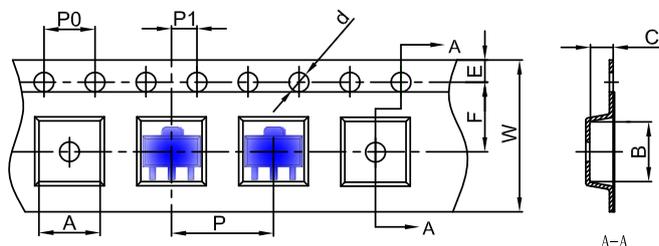


ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB}=30\text{V}, I_E=0$			0.05	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=6\text{V}, I_C=0$			0.05	μA
Collector ut-off current	I_{CEX}	$V_{CE}=30\text{V}, V_{BE(off)}=3\text{V}$			0.05	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=1\text{V}, I_C=0.1\text{mA}$	60			
	$h_{FE(2)}$	$V_{CE}=1\text{V}, I_C=1\text{mA}$	80			
	$h_{FE(3)}$	$V_{CE}=1\text{V}, I_C=10\text{mA}$	100		300	
	$h_{FE(4)}$	$V_{CE}=1\text{V}, I_C=50\text{mA}$	60			
	$h_{FE(5)}$	$V_{CE}=1\text{V}, I_C=100\text{mA}$	30			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C=10\text{mA}, I_B=1\text{mA}$			0.2	V
	$V_{CE(sat)2}$	$I_C=50\text{mA}, I_B=5\text{mA}$			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)1}$	$I_C=10\text{mA}, I_B=1\text{mA}$	0.65		0.85	V
	$V_{BE(sat)2}$	$I_C=50\text{mA}, I_B=5\text{mA}$			0.95	V
Transition frequency	f_T	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	300			MHz
Collector capacitance	C_c	$V_{CB}=5\text{V}, I_E=0, f=1\text{MHz}$			4	pF
Emitter capacitance	C_e	$V_{EB}=0.5\text{V}, I_C=0, f=1\text{MHz}$			8	pF
Noise figure	NF	$V_{CE}=5\text{V}, I_C=0.1\text{mA}, f=10\text{Hz}-15.7\text{kHz}, R_S=1\text{K}\Omega$			5	dB
Delay time	t_d	$I_C=10\text{mA}, I_{B1}=-I_{B2}=1\text{mA}$			35	ns
Rise time	t_r				35	ns
Storage time	t_s				200	ns
Fall time	t_f				50	ns

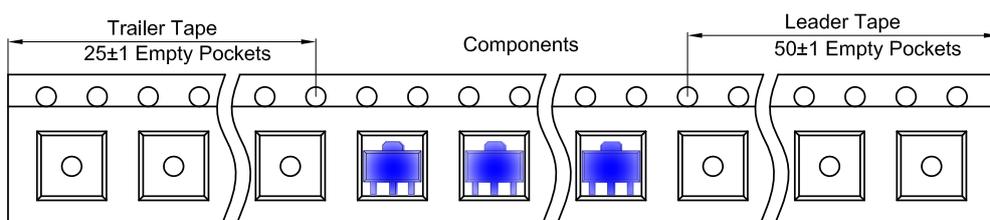
SOT-89-3L Tape and Reel

SOT-89-3L Embossed Carrier Tape

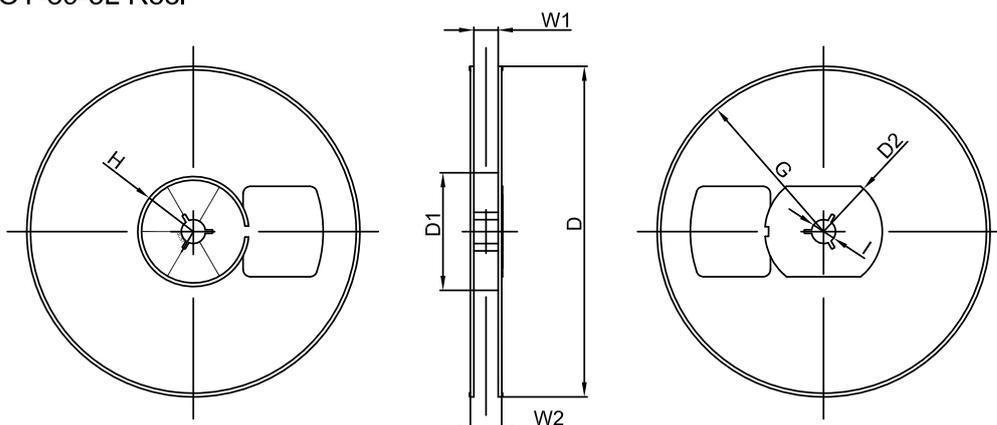


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-89-3L	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

SOT-89-3L Tape Leader and Trailer

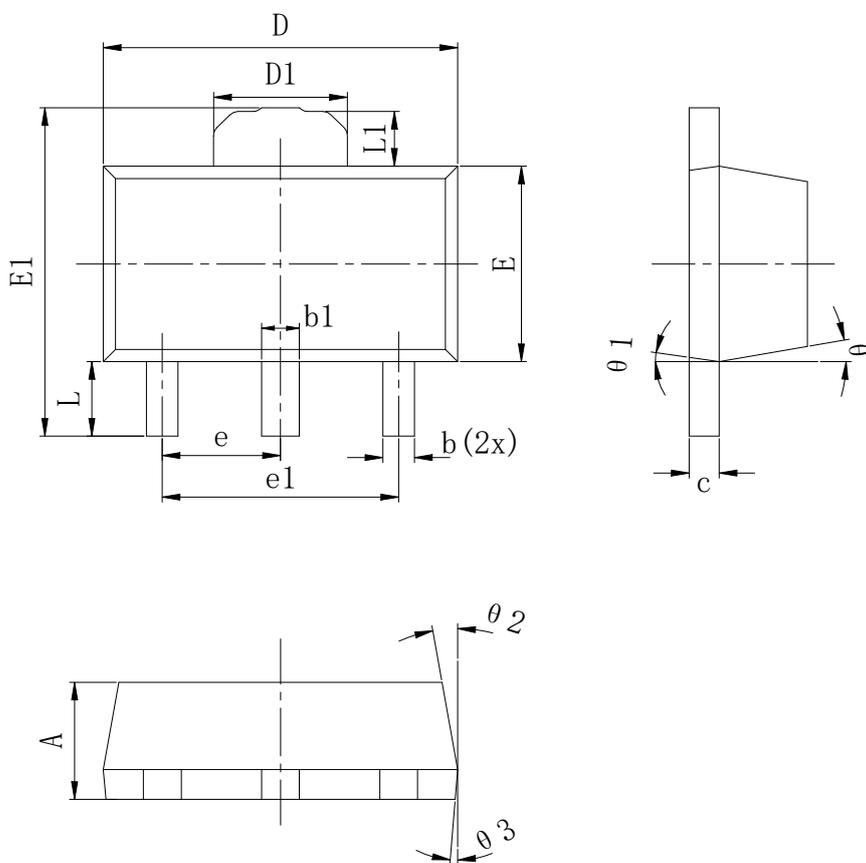


SOT-89-3L Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø180.00	60.00	R32.00	R86.50	R30.00	Ø13.00	13.20	16.50

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
1000 pcs	7 inch	10,000 pcs	203×203×195	40,000 pcs	438×438×220	



SYMBOL	MILLIMETER		
	MIN	TYP.	MAX
A	1.400	1.500	1.600
b	0.320	0.400	0.520
b1	0.400	0.480	0.580
c	0.350	0.381	0.440
D	4.400	4.500	4.600
D1	1.700REF		
E	2.400	2.500	2.600
E1	4.050	4.200	4.350
e	1.500TYP.		
e1	3.000TYP.		
L	0.800	0.950	1.200
L1	0.700REF		
θ	10° REF		
θ 1	8° REF		
θ 2	10° REF		
θ 3	5° REF		

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