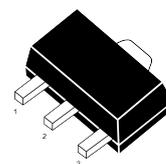


PNP Silicon Epitaxial Planar Transistor

Medium power transistor

Marking ; P BCP
 Q BCQ
 R BCR

SOT-89-3L



1. BASE
2. EMITTER
3. COLLECTOR



Absolute Maximum Ratings (T_a = 25°C)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	-40	V
V _{CEO}	Collector-Emitter Voltage	-32	V
V _{EBO}	Emitter-Base Voltage	-5	V
I _C	Collector Current -Continuous	-2	A
P _C	Collector Power Dissipation	500	mW
R _{θJA}	Thermal Resistance From Junction To Ambient	250	°C/W
R _{θJC}	Thermal Resistance From Junction To Case	45	°C/W
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55~150	°C

Characteristics at T_a = 25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at -V _{CE} = 3 V, -I _C = 500 mA	Current Gain Group P	h _{FE}	82	-	180	-
	Q	h _{FE}	120	-	270	-
	R	h _{FE}	180	-	390	-
Collector Cutoff Current at -V _{CB} = 20 V	-I _{CBO}	-	-	1	μA	
Emitter Cutoff Current at -V _{EB} = 4 V	-I _{EBO}	-	-	1	μA	
Collector Base Breakdown Voltage at -I _C = 50 μA	-V _{(BR)CBO}	40	-	-	V	
Collector Emitter Breakdown Voltage at -I _C = 1 mA	-V _{(BR)CEO}	32	-	-	V	
Emitter Base Breakdown Voltage at -I _E = 50 μA	-V _{(BR)EBO}	5	-	-	V	
Collector Emitter Saturation Voltage at -I _C = 2 A, -I _B = 200 mA	-V _{CE(sat)}	-	-	0.8	V	
Transition Frequency at -V _{CE} = 5 V, I _E = 0.5 A, f = 100 MHz	f _T	-	100	-	MHz	
Output Capacitance at -V _{CB} = 10 V, I _E = 0, f = 1 MHz	C _{ob}	-	50	-	pF	

Typical Characteristics

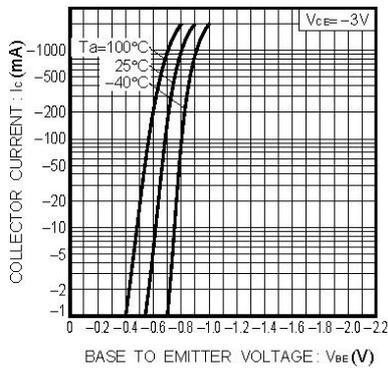


Fig.1 Grounded emitter propagation characteristics

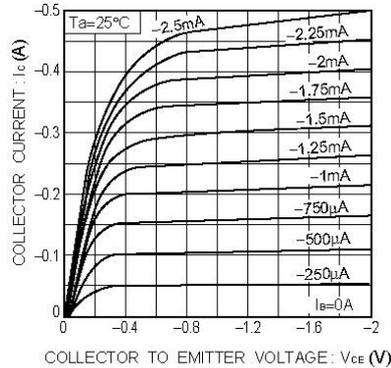


Fig.2 Grounded emitter output characteristics

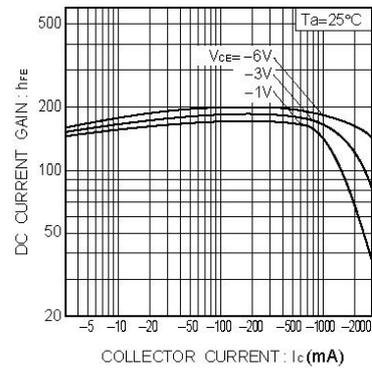


Fig.3 DC current gain vs. collector current (I)

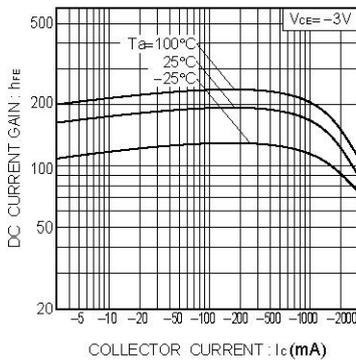


Fig.4 DC current gain vs. collector current (II)

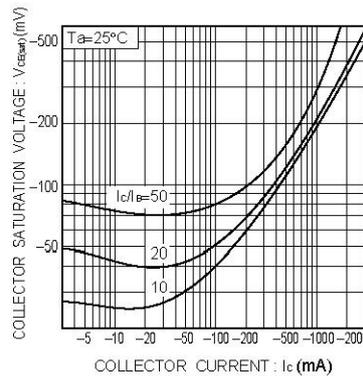


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

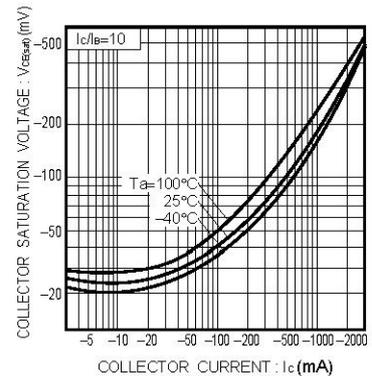


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

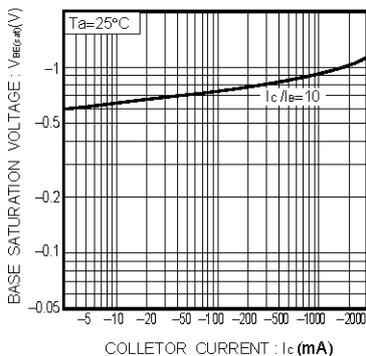


Fig.7 Base-emitter saturation voltage vs. collector current

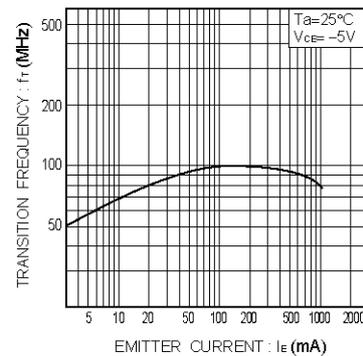


Fig.8 Gain bandwidth product vs. emitter current

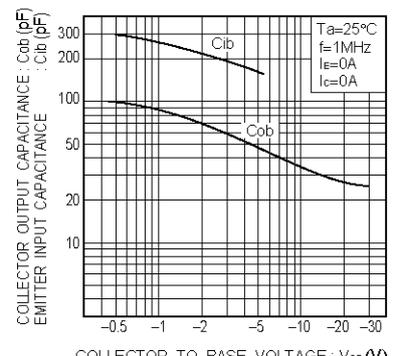
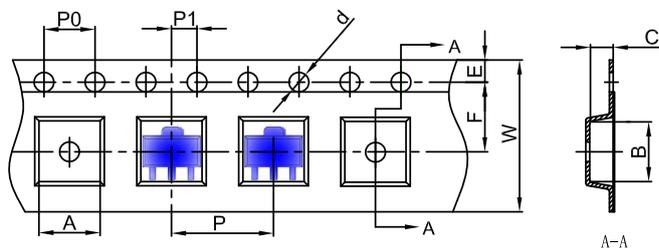


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

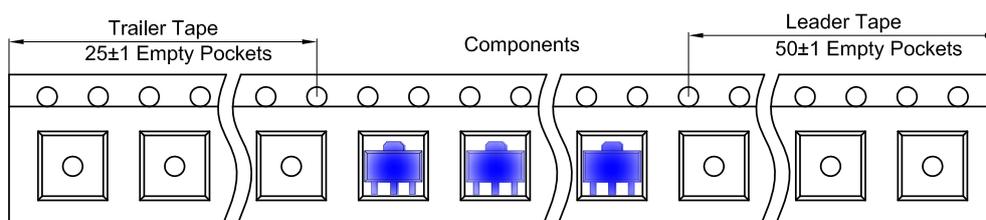
SOT-89-3L Tape and Reel

SOT-89-3L Embossed Carrier Tape

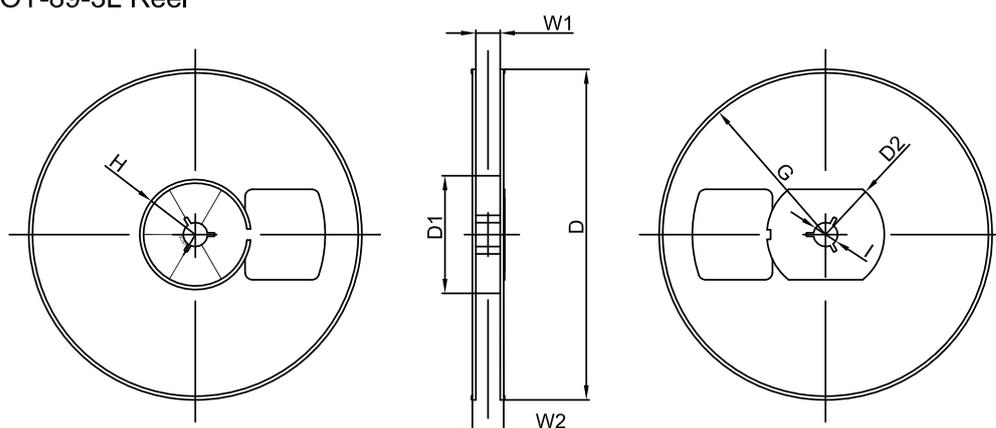


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-89-3L	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

SOT-89-3L Tape Leader and Trailer

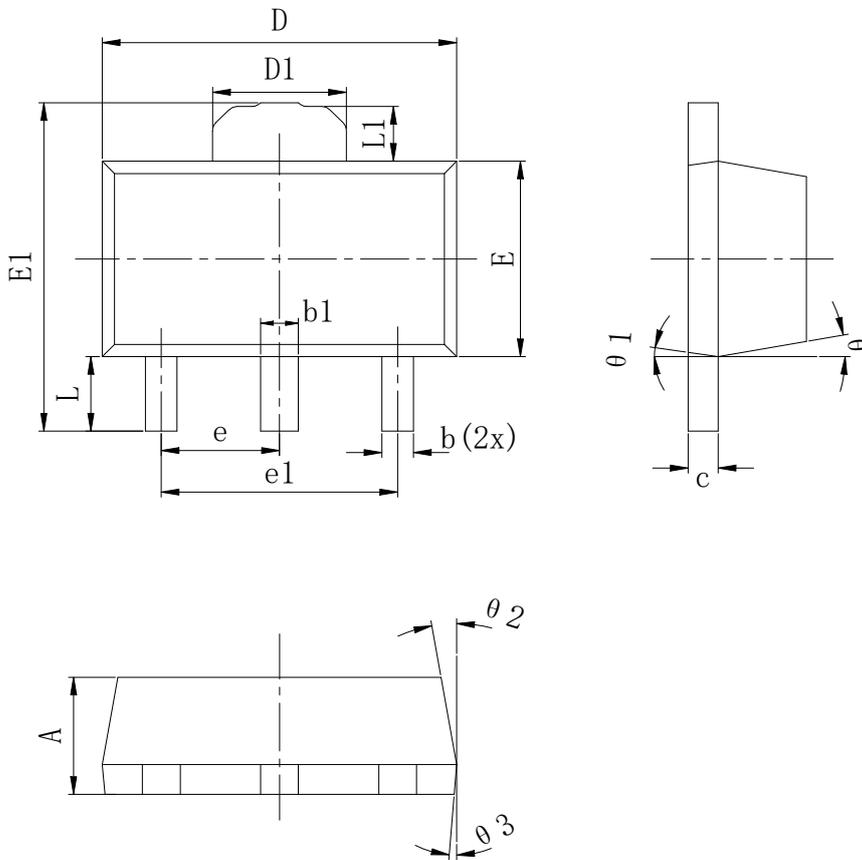


SOT-89-3L Reel



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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