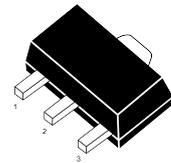


### PNP Silicon Epitaxial Planar Transistor

Low frequency transistor

SOT-89-3L



1. BASE
2. EMITTER
3. COLLECTOR



#### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	30	V
Collector Emitter Voltage	$-V_{CEO}$	20	V
Emitter Base Voltage	$-V_{EBO}$	6	V
Collector Current - DC	$-I_C$	5	A
Collector Current - Pulse <sup>1)</sup>	$-I_{CP}$	10	A
Collector Power Dissipation	$P_C$	0.5 2 <sup>2)</sup>	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 55 to + 150	$^\circ\text{C}$

<sup>1)</sup> Single pulse,  $P_w = 10$  ms.

<sup>2)</sup> When mounted on a 40 X 40 X 0.7 mm ceramic board.

#### Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $-V_{CE} = 2$ V, $-I_C = 500$ mA	Current Gain Group P Q R	$h_{FE}$	82	-	180	-
		$h_{FE}$	120	-	270	-
		$h_{FE}$	180	-	390	-
Collector Base Cutoff Current at $-V_{CB} = 20$ V	$-I_{CBO}$	-	-	500	nA	
Emitter Base Cutoff Current at $-V_{EB} = 5$ V	$-I_{EBO}$	-	-	500	nA	
Collector Base Breakdown Voltage at $-I_C = 50$ $\mu\text{A}$	$-V_{(BR)CBO}$	30	-	-	V	
Collector Emitter Breakdown Voltage at $-I_C = 1$ mA	$-V_{(BR)CEO}$	20	-	-	V	
Emitter Base Breakdown Voltage at $-I_E = 50$ $\mu\text{A}$	$-V_{(BR)EBO}$	6	-	-	V	
Collector Emitter Saturation Voltage at $-I_C = 4$ A, $-I_B = 100$ mA	$-V_{CE(sat)}$	-	-	1	V	
Transition Frequency at $-V_{CE} = 6$ V, $I_E = 50$ mA, $f = 100$ MHz	$f_T$	-	120	-	MHz	
Output Capacitance at $-V_{CB} = 20$ V, $I_E = 0$ , $f = 1$ MHz	$C_{ob}$	-	60	-	pF	

## Typical Characteristics

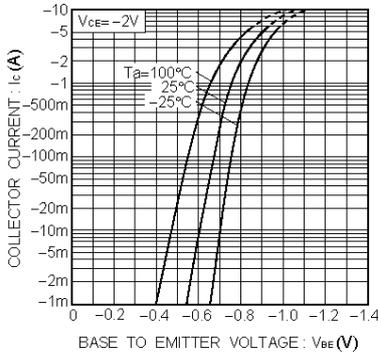


Fig.1 Grounded emitter propagation characteristics

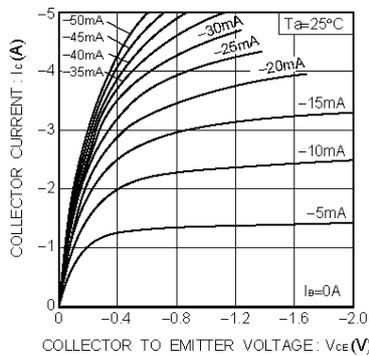


Fig.2 Grounded emitter output characteristics

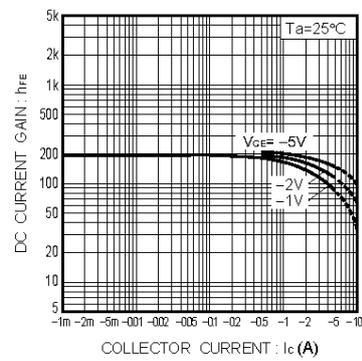


Fig.3 DC current gain vs. collector current ( I )

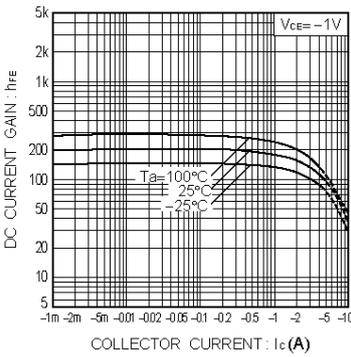


Fig.4 DC current gain vs. collector current (II)

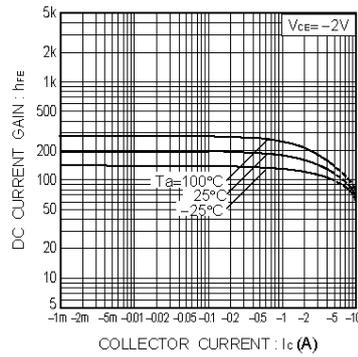


Fig.5 DC current gain vs. collector current (III)

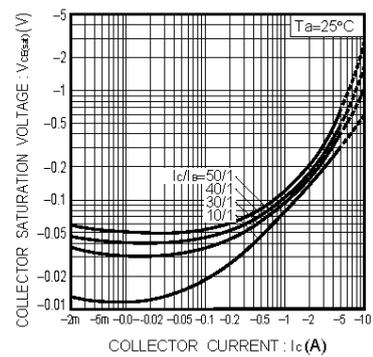


Fig.6 Collector-emitter saturation voltage vs. collector current ( I )

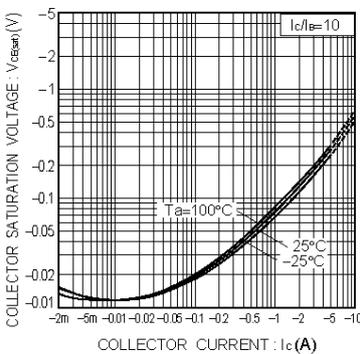


Fig.7 Collector-emitter saturation voltage vs. collector current ( II )

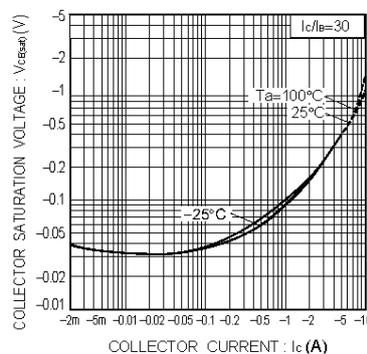


Fig.8 Collector-emitter saturation voltage vs. collector current ( III )

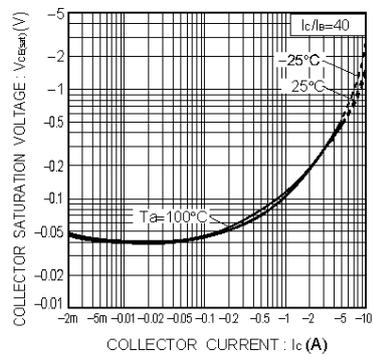
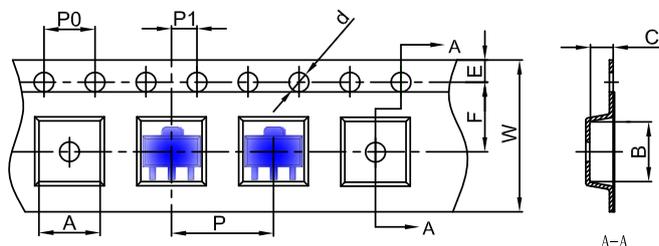


Fig.9 Collector-emitter saturation voltage vs. collector current ( IV )

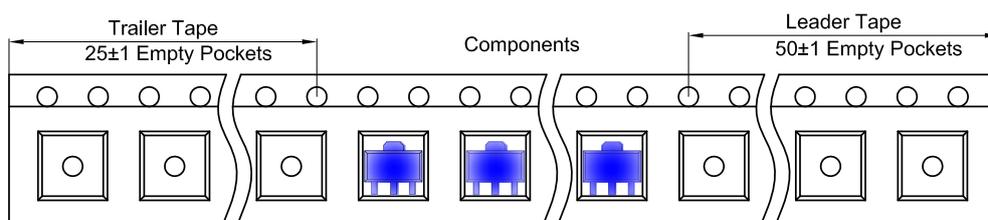
## SOT-89-3L Tape and Reel

### SOT-89-3L Embossed Carrier Tape

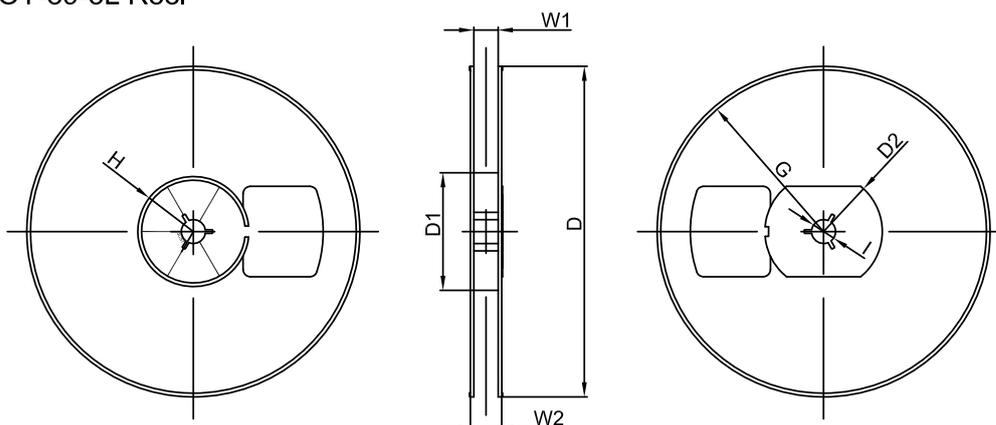


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-89-3L	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

### SOT-89-3L Tape Leader and Trailer

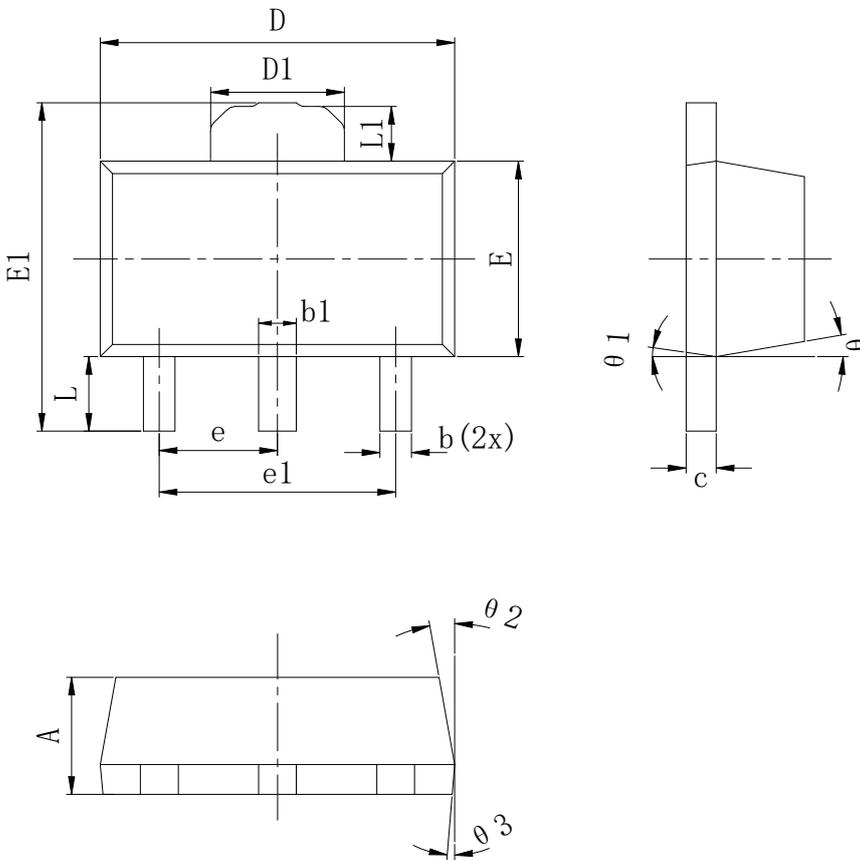


### SOT-89-3L Reel



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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