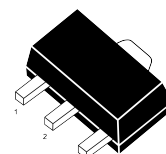


NPN Silicon Epitaxial Planar Transistor

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}	60	V
Collector Emitter Voltage	V_{CEO}	50	V
Emitter Base Voltage	V_{EBO}	6	V
Collector Current - DC	I_C	3	A
Collector Current - Pulse ¹⁾	I_{CP}	6	A
Total Power Dissipation	P_{tot}	0.5 2 ²⁾	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{Stg}	- 55 to + 150	$^\circ\text{C}$

¹⁾ Single pulse, PW = 10 ms.

²⁾ 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 $V_{CE} = 2\text{ V}$, $I_C = 0.5\text{ A}$ at $V_{CE} = 2\text{ V}$, $I_C = 1.5\text{ A}$	h_{FE} h_{FE}	82 45	- -	390 -	- -
Collector Base Breakdown Voltage at $I_C = 50\text{ }\mu\text{A}$	$V_{(BR)CBO}$	60	-	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	50	-	-	V
Emitter Base Breakdown Voltage at $I_E = 50\text{ }\mu\text{A}$	$V_{(BR)EBO}$	6	-	-	V
Collector Cutoff Current at $V_{CB} = 60\text{ V}$	I_{CBO}	-	-	0.1	μA
Emitter Cutoff Current at $V_{EB} = 5\text{ V}$	I_{EBO}	-	-	0.1	μA
Collector Emitter Saturation Voltage at $I_C = 1\text{ A}$, $I_B = 50\text{ mA}$	$V_{CE(sat)}$	-	-	0.35	V
Transition Frequency at $V_{CE} = 5\text{ V}$, $-I_E = 0.5\text{ A}$, $f = 100\text{ MHz}$	f_T	-	210	-	MHz
Output Capacitance at $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	25	-	pF

CLASSIFICATION OF h_{FE}

RANK	P	Q	R
RANGE	82 - 180	120 - 270	180 - 390
MARKING	DKP	DKQ	DKR

Typical Characteristics

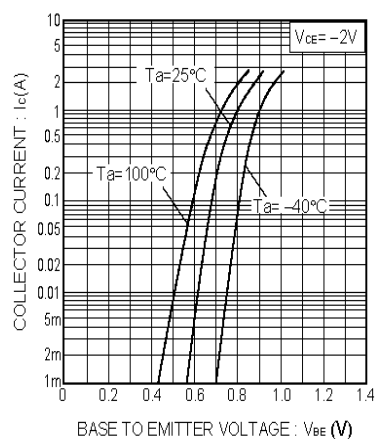


Fig.1 Grounded emitter propagation characteristics

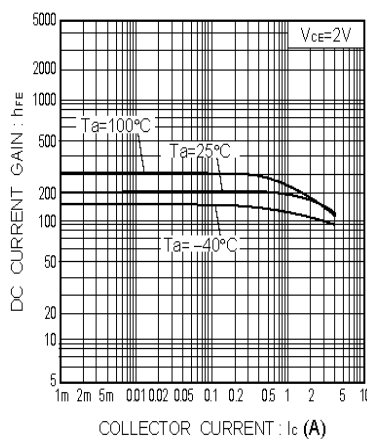


Fig.2 DC current gain vs. collector current

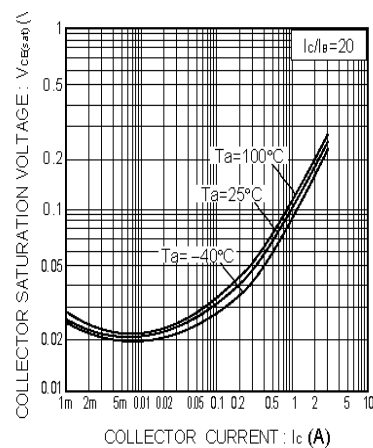


Fig.3 Collector-emitter saturation voltage vs. collector current

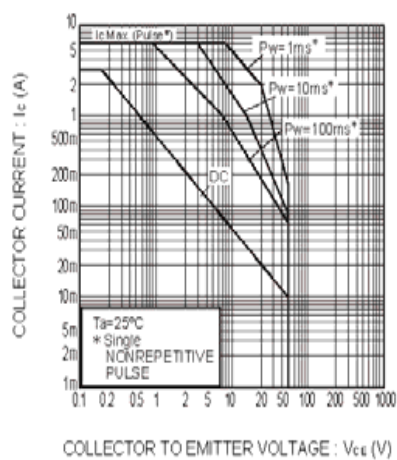
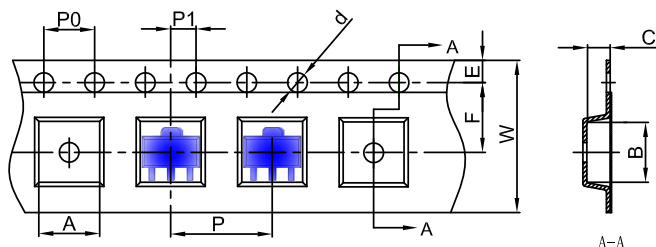


Fig.4 Safe Operating area

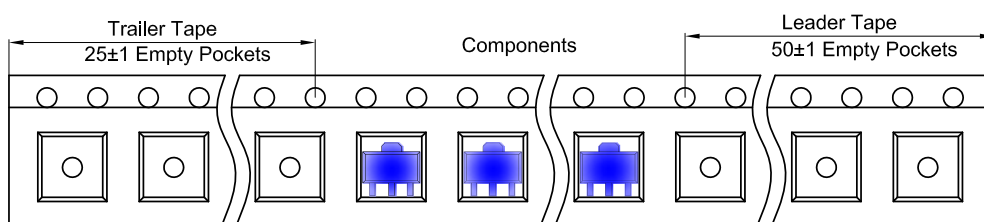
SOT-89-3L Tape and Reel

SOT-89-3L Embossed Carrier Tape

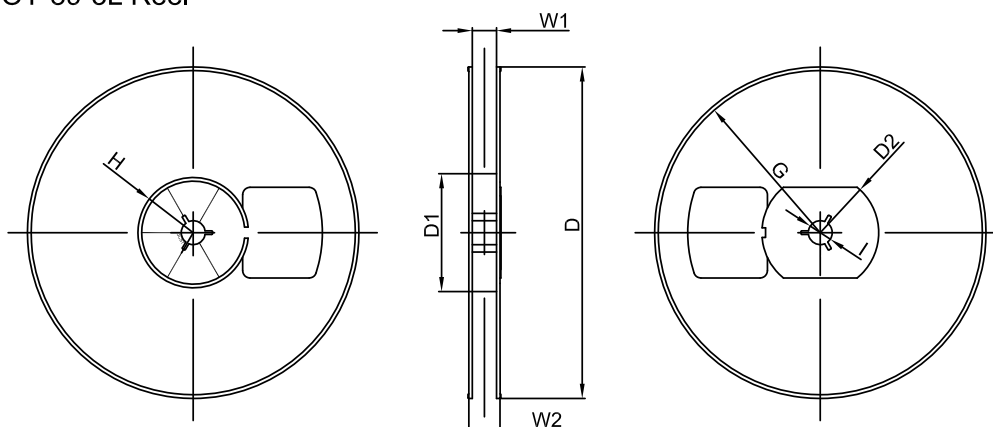


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-89-3L	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

SOT-89-3L Tape Leader and Trailer

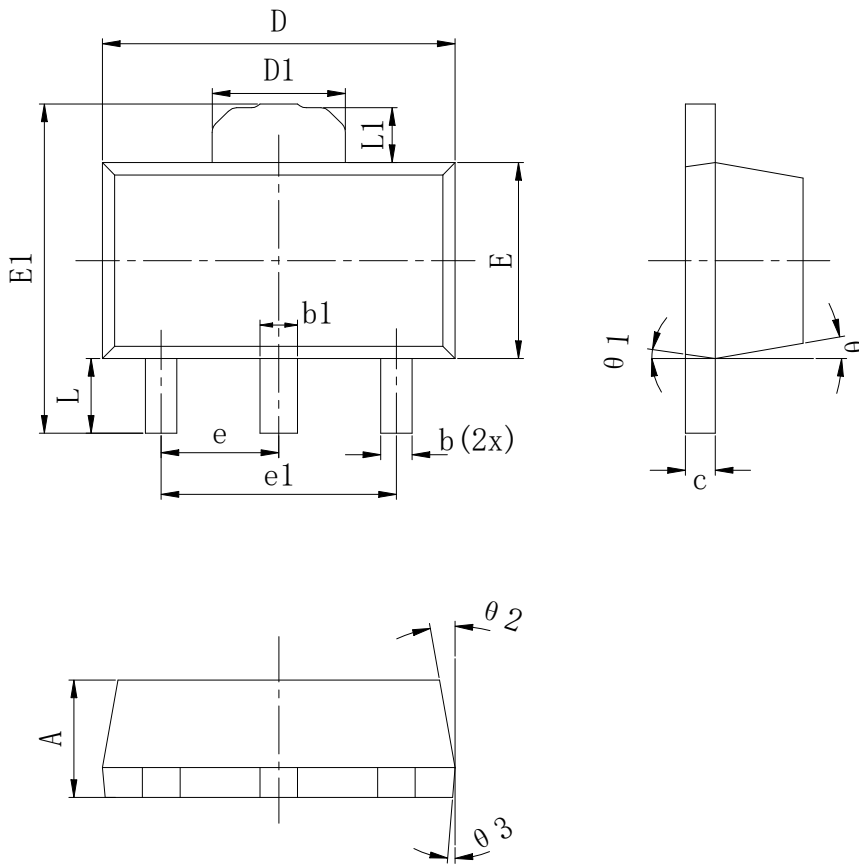


SOT-89-3L Reel



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		
theta	10° REF		
theta 1	8° REF		
theta 2	10° REF		
theta 3	5° REF		

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