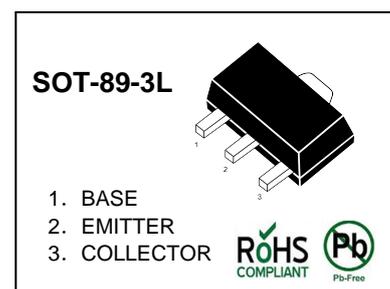


NPN Silicon Epitaxial Planar Transistor

for high voltage and high speed switching applications

MARKING:13003



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

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	800	V
Collector Emitter Voltage	V_{CEO}	430	V
Emitter Base Voltage	V_{EBO}	9	V
Collector Current (DC)	I_C	1.5	A
Collector Current (Pulse)	I_{CP}	3	A
Total Power Dissipation	P_{tot}	0.8	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 65 to + 150	$^\circ\text{C}$

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

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 2\text{ V}$, $I_C = 0.5\text{ A}$ at $V_{CE} = 2\text{ V}$, $I_C = 1\text{ A}$ at $V_{CE} = 5\text{ V}$, $I_C = 10\text{ }\mu\text{A}$	h_{FE} h_{FE} h_{FE}	20 8 6	40 40 40	- - -
Collector Base Cutoff Current at $V_{CB} = 700\text{ V}$	I_{CBO}	-	10	μA
Emitter Base Cutoff Current at $V_{EB} = 9\text{ V}$	I_{EBO}	-	10	μA
Collector Base Breakdown Voltage at $I_C = 500\text{ }\mu\text{A}$	$V_{(BR)CBO}$	800	-	V
Collector Emitter Breakdown Voltage at $I_C = 5\text{ mA}$	$V_{(BR)CEO}$	430	-	V
Emitter Base Breakdown Voltage at $I_E = 500\text{ }\mu\text{A}$	$V_{(BR)EBO}$	9	-	V
Collector Emitter Saturation Voltage at $I_C = 0.5\text{ A}$, $I_B = 0.1\text{ A}$ at $I_C = 1\text{ A}$, $I_B = 0.25\text{ A}$ at $I_C = 1.5\text{ A}$, $I_B = 0.5\text{ A}$	$V_{CE(sat)}$	- - -	0.5 1 3	V
Base Emitter Saturation Voltage at $I_C = 0.5\text{ A}$, $I_B = 0.1\text{ A}$ at $I_C = 1\text{ A}$, $I_B = 0.25\text{ A}$	$V_{BE(sat)}$	- -	1 1.2	V
Transition Frequency at $V_{CE} = 10\text{ V}$, $I_C = 100\text{ mA}$	f_T	4	-	MHz
Turn On Time at $V_{CC} = 125\text{ V}$, $I_C = 1\text{ A}$, $I_B = -I_{B2} = 0.2\text{ A}$, $R_L = 125\text{ }\Omega$	t_{on}	-	1.1	μs
Storage Time at $V_{CC} = 125\text{ V}$, $I_C = 1\text{ A}$, $I_B = -I_{B2} = 0.2\text{ A}$, $R_L = 125\text{ }\Omega$	t_s	-	4	μs
Fall Time at $V_{CC} = 125\text{ V}$, $I_C = 1\text{ A}$, $I_B = -I_{B2} = 0.2\text{ A}$, $R_L = 125\text{ }\Omega$	t_f	-	0.7	μs

Typical Characteristics

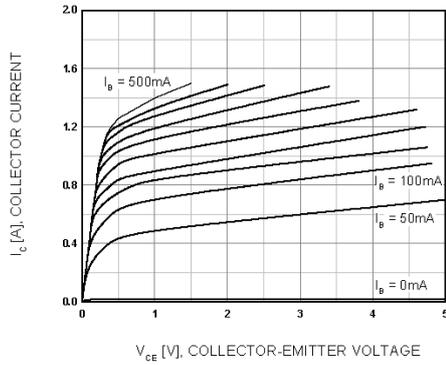


Figure 1. Static Characteristic

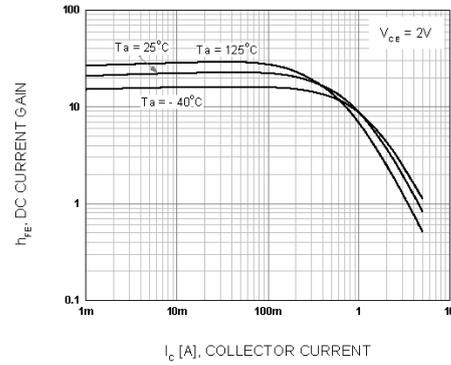


Figure 2. DC current Gain

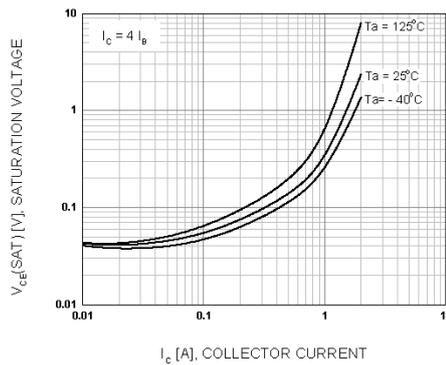


Figure 3. Collector-Emitter Saturation Voltage

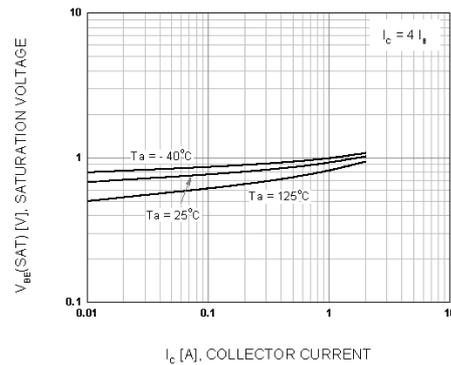


Figure 4. Base-Emitter Saturation Voltage

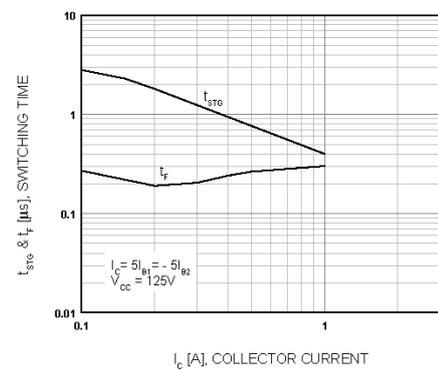


Figure 5. Resistive Load Switching Time

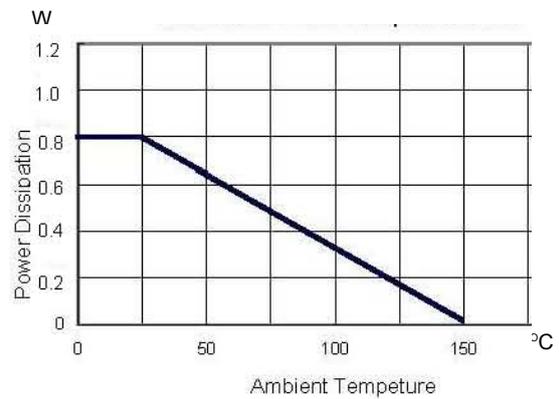
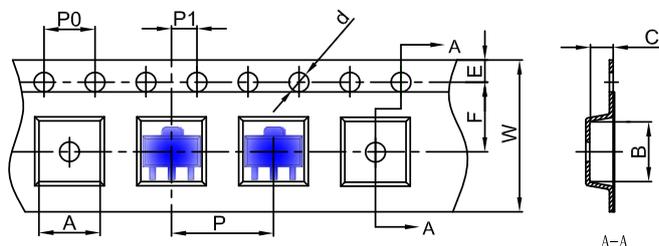


Figure 6. Power Derating

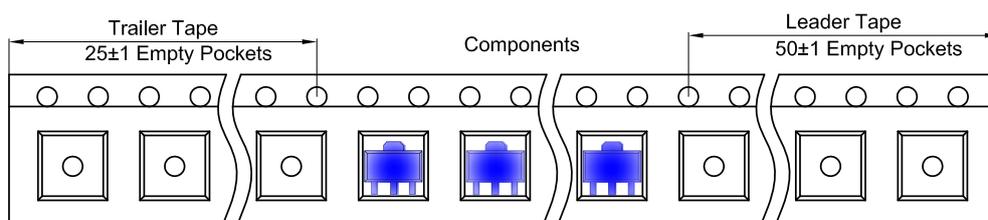
SOT-89-3L Tape and Reel

SOT-89-3L Embossed Carrier Tape

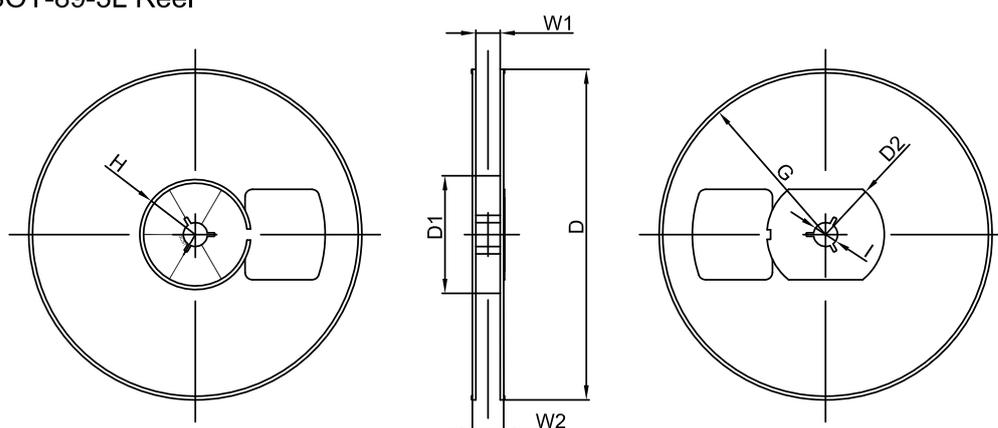


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-89-3L	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

SOT-89-3L Tape Leader and Trailer

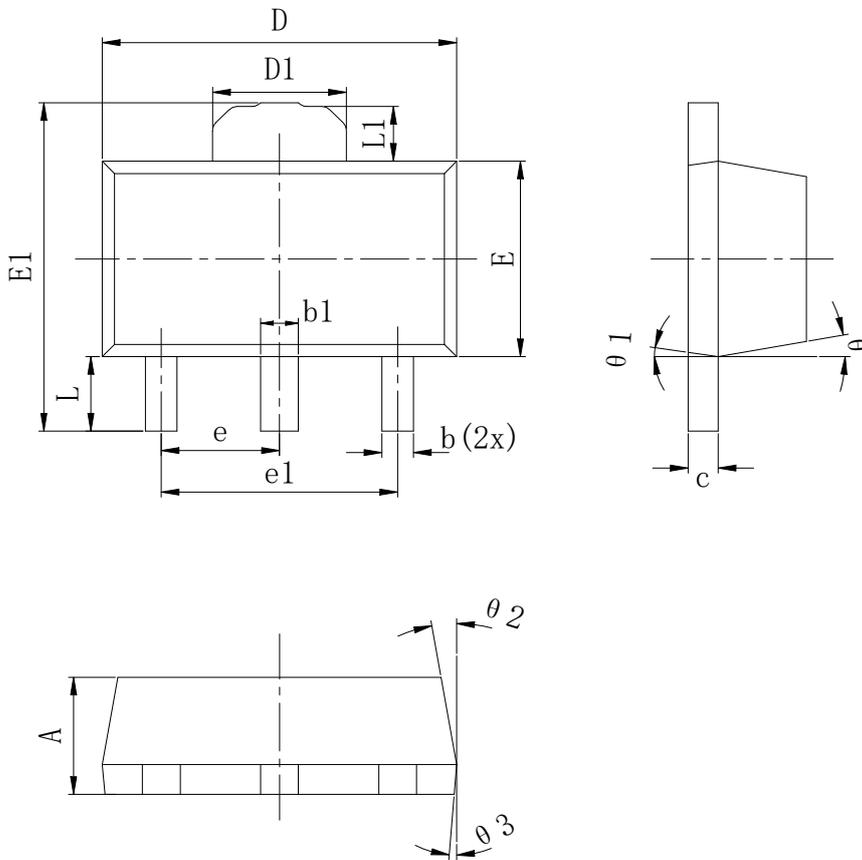


SOT-89-3L Reel



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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