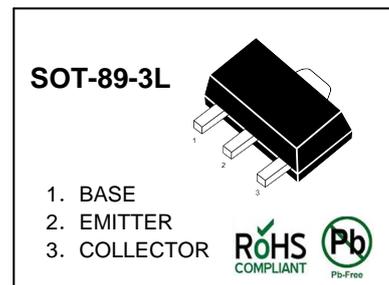


SOT-89 Plastic-Encapsulate Transistors

TRANSISTOR (PNP)

FEATURES

Low Frequency Power Amplifier Complementary Pair
with 2SD669 / 2SD669A



Marking Code: B649/B649A

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector- Base Voltage	-180	V
V _{CEO}	Collector-Emitter Voltage	2SB649	-120
		2SB649A	-160
V _{EBO}	Emitter-Base Voltage	-5	V
I _c	Collector Current -Continuous	-1.5	A
P _c	Collector Dissipation	1	W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C

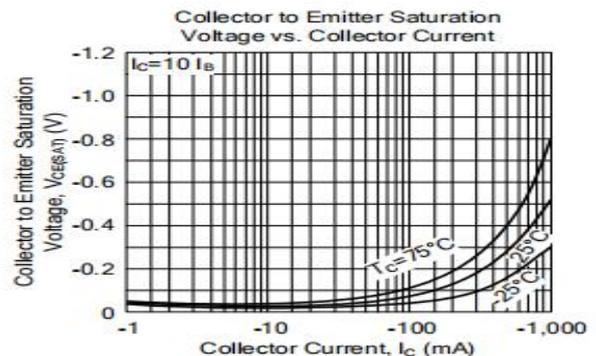
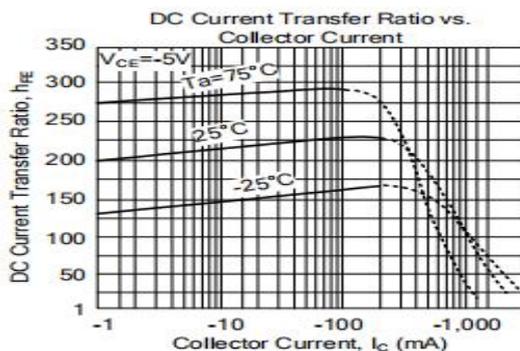
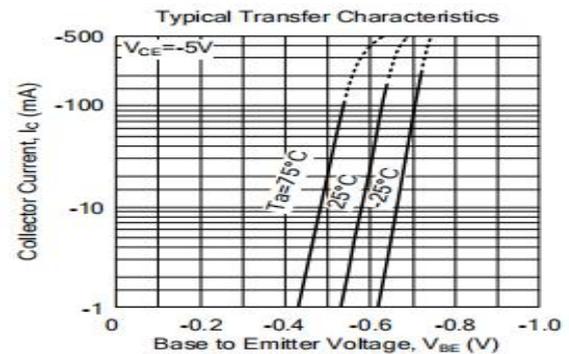
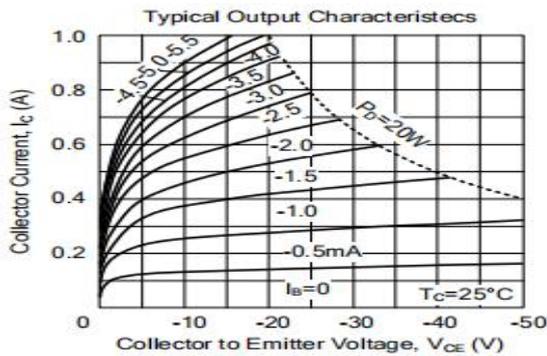
$T_a=25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -1\text{mA}, I_E = 0$	-180			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	2SB649	-120		V
			2SB649A	-160		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -1\text{mA}, I_C = 0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB} = -160\text{V}, I_E = 0$			-10	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -4\text{V}, I_C = 0$			-10	μA
DC current gain	$h_{FE(1)}$	$V_{CE} = -5\text{V}, I_C = -150\text{mA}$	2SB649	60	320	
	$h_{FE(2)}$	$V_{CE} = -5\text{V}, I_C = -500\text{mA}$	2SB649A	60	200	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$			-1	V
Base-emitter voltage	V_{BE}	$V_{CE} = -5\text{V}, I_C = -150\text{mA}$			-1.5	V
Transition frequency	f_T	$V_{CE} = -5\text{V}, I_C = -150\text{mA}$		140		MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$		27		pF

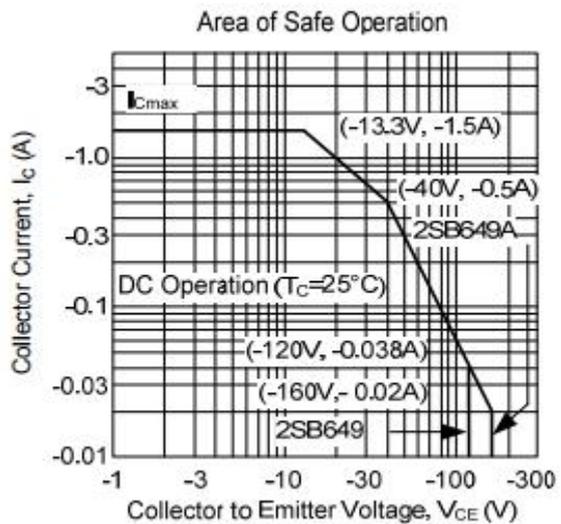
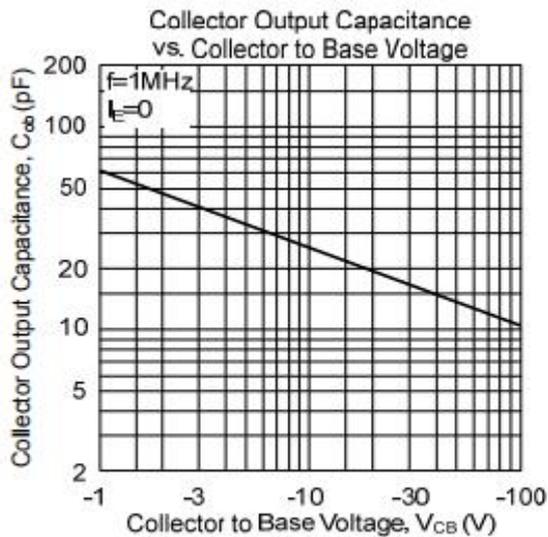
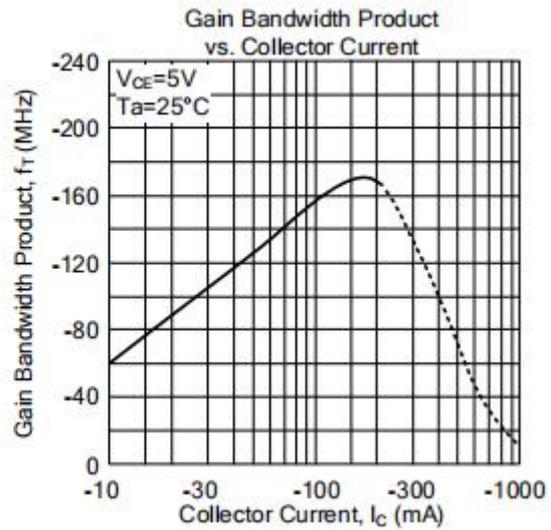
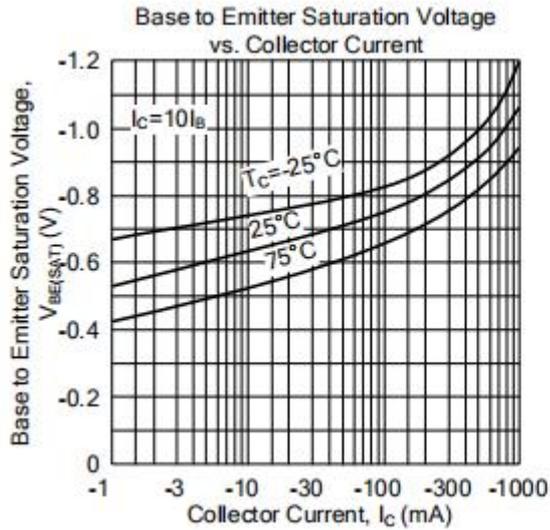
CLASSIFICATION OF $h_{FE(1)}$

Rank	B	C	D
Range	2SB649	100-200	160-320
	2SB649A	100-200	

TYPICAL CHARACTERISTICS

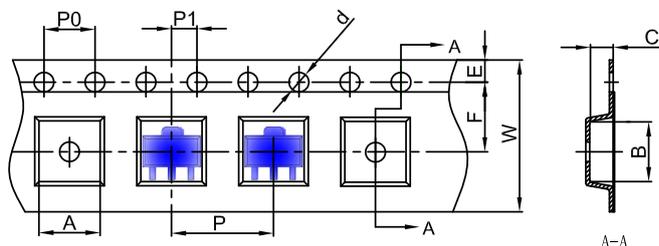


Typical Characteristics



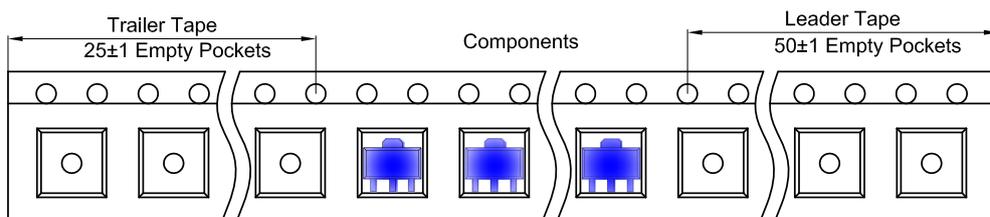
SOT-89-3L Tape and Reel

SOT-89-3L Embossed Carrier Tape

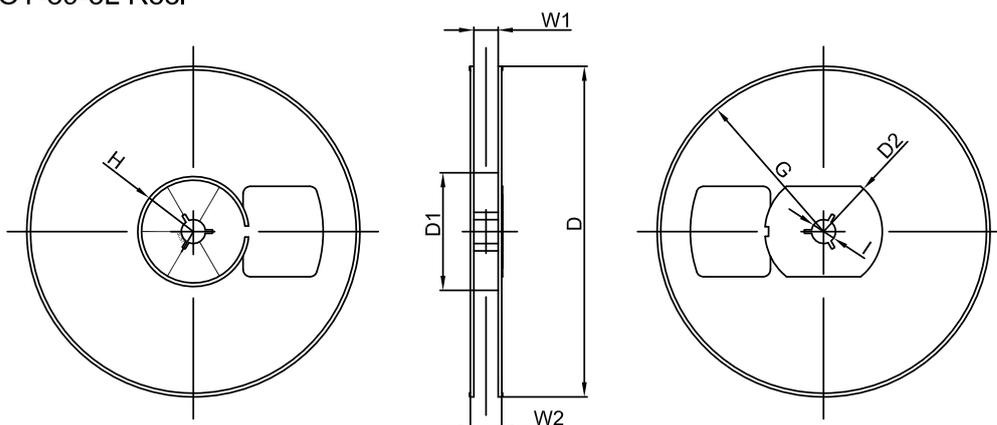


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-89-3L	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

SOT-89-3L Tape Leader and Trailer

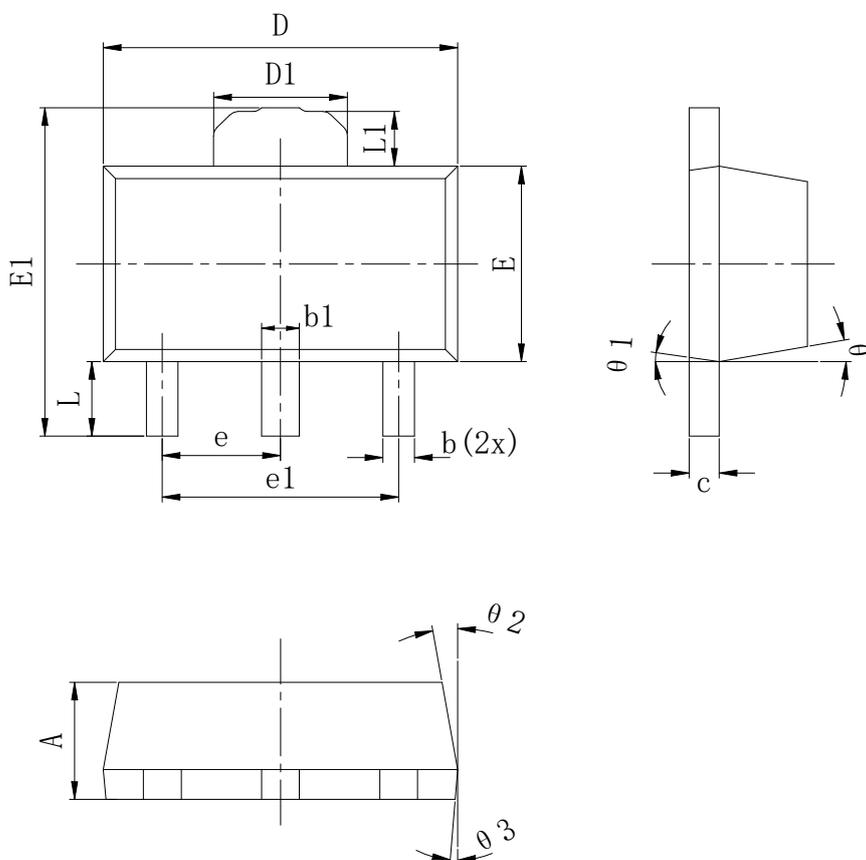


SOT-89-3L Reel



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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