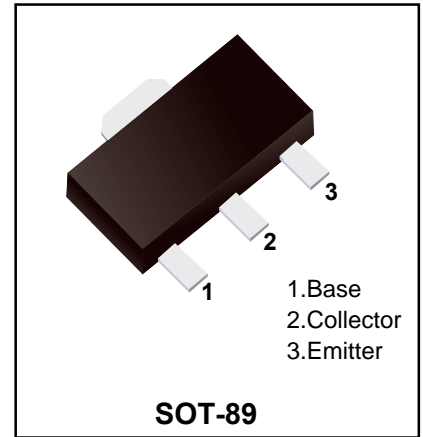


Plastic-Encapsulate Transistors

TRANSISTOR (PNP)



Features

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

Marking Code	
2SB649-2SB649A	B649/B649A

Maximum Rating (Ta=25°C)

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

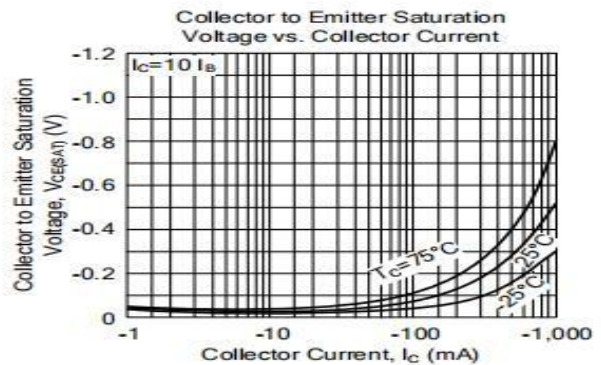
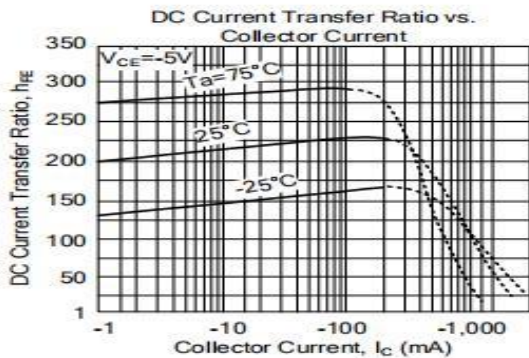
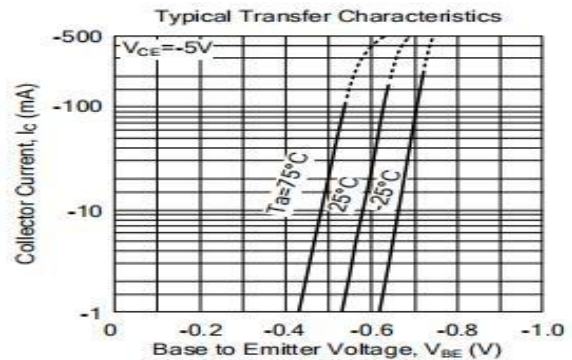
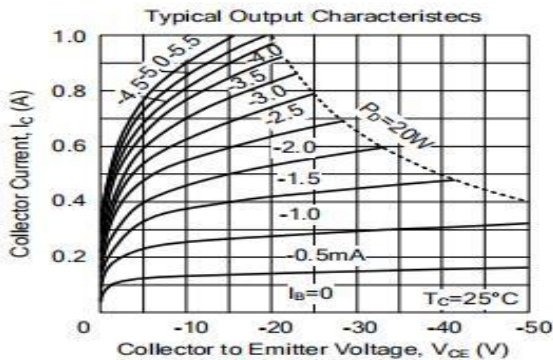
Electrical Characteristics (Ta=25°C)

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

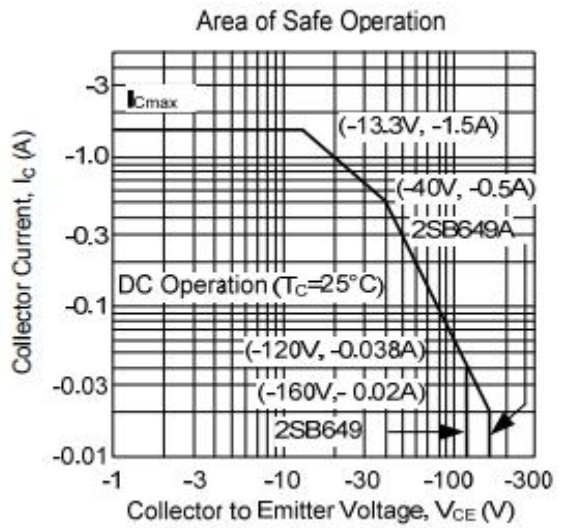
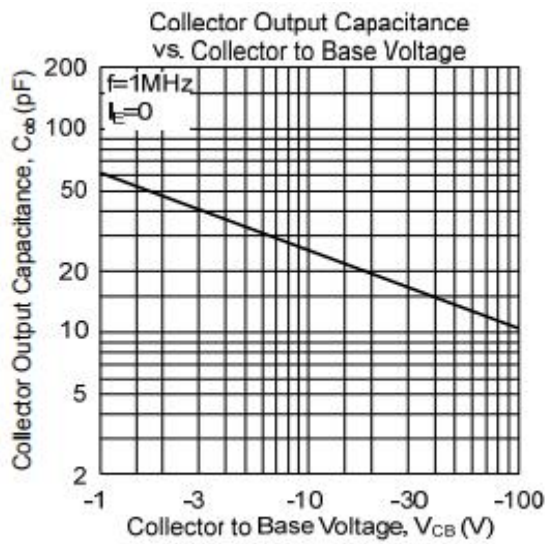
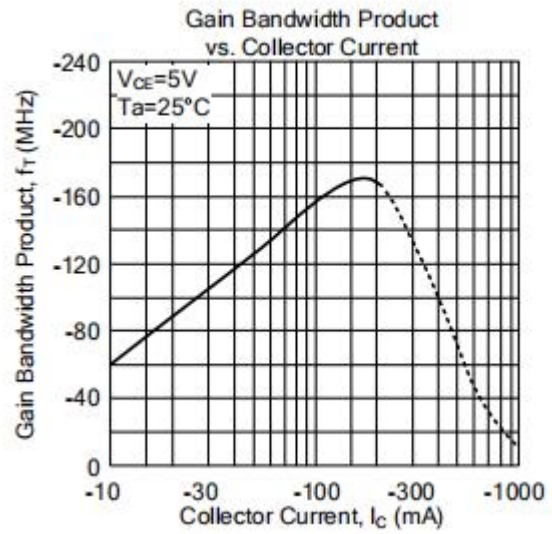
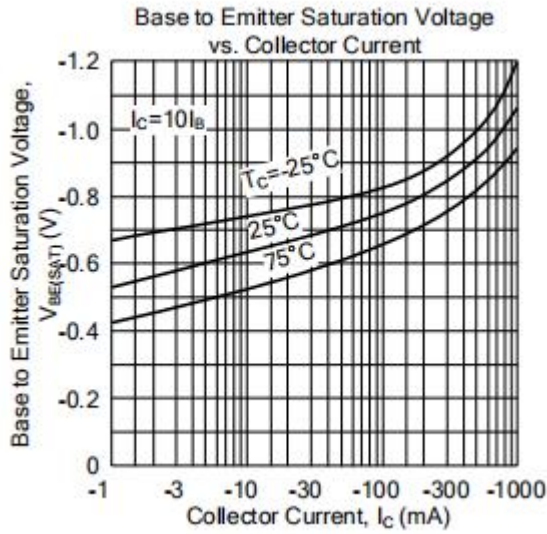
h_{FE} Classification

Rank		B	C	D
Range	2SB649	60-120	100-200	160-320
	2SB649A	60-120	100-200	

Typical Characteristics



Typical Characteristics



Ordering information

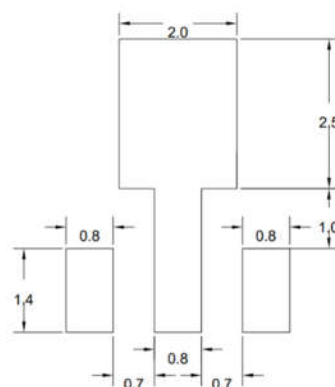
Package	Packing Description	Base Quantity	Packing Quantity
SOT-89	Tape/Reel,7"reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton

Package Dimensions

SOT-89

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.40	1.60	0.055	0.063
b	0.32	0.52	0.013	0.020
b1	0.38	0.58	0.015	0.023
c	0.35	0.45	0.014	0.018
D	4.40	4.60	0.173	0.181
D1	1.45	1.65	0.057	0.065
D2	1.70	1.80	0.067	0.071
E	2.30	2.60	0.091	0.102
E1	3.95	4.25	0.156	0.167
E2	1.80	2.00	0.071	0.079
e	1.40	1.60	0.055	0.063
e1	2.80	3.20	0.110	0.126
L	0.90	1.20	0.035	0.047

The recommended mounting pad size



UNIT:MM

Disclaimer

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