

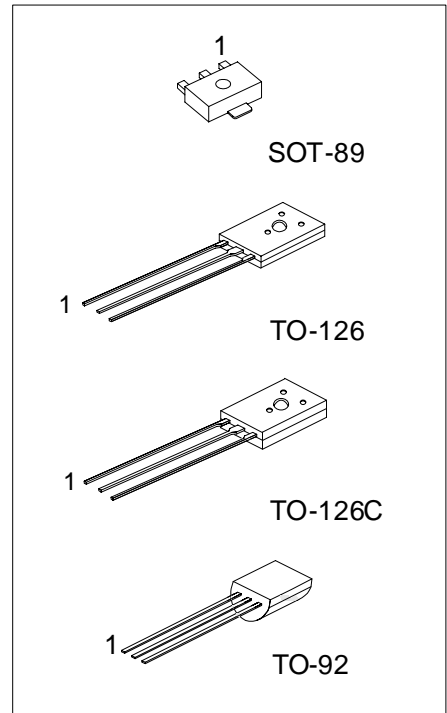
**2SB649/A**

**PNP SILICON TRANSISTOR**

**BIPOLAR POWER GENERAL PURPOSE TRANSISTOR**

■ APPLICATIONS

\* Low frequency power amplifier complementary pair with UTC 2SB669/A



\*Pb-free plating product number:  
2SB649L/2SB649AL

■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
2SB649-x-AB3-R	2SB649L-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SB649-x-T6C-K	2SB649L-x-T6C-K	TO-126C	E	C	B	Bulk
2SB649-x-T60-K	2SB649L-x-T60-K	TO-126	E	C	B	Bulk
2SB649-x-T92-B	2SB649L-x-T92-B	TO-92	E	C	B	Tape Box
2SB649-x-T92-K	2SB649L-x-T92-K	TO-92	E	C	B	Bulk
2SB649A-x-AB3-R	2SB649AL-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SB649A-x-T6C-K	2SB649AL-x-T6C-K	TO-126C	E	C	B	Bulk
2SB649A-x-T60-K	2SB649AL-x-T60-K	TO-126	E	C	B	Bulk
2SB649A-x-T92-B	2SB649AL-x-T92-B	TO-92	E	C	B	Tape Box
2SB649A-x-T92-K	2SB649AL-x-T92-K	TO-92	E	C	B	Bulk

<p>2SB649L-x-AB3-R</p>	<p>(1) Packing Type (2) Package Type (3) Rank (4) Lead Plating</p> <p>(1) B: Tape Box, K: Bulk, R: Tape Reel (2) AB3: SOT-89, T6C: TO-126C, T60: TO-126, T92: TO-92 (3) x: refer to Classification of <math>h_{FE}</math> (4) L: Lead Free Plating, Blank: Pb/Sn</p>
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■ ABSOLUTE MAXIMUM RATING (Ta=25 , unless otherwise specified)

PARAMETER		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CBO}$	-180	V
Collector-Emitter Voltage	2SB649	$V_{CEO}$	-120	V
	2SB649A		-160	
Emitter-Base Voltage		$V_{EBO}$	-5	V
Collector Current		$I_C$	-1.5	A
Collector Peak Current		$I_{C(PEAK)}$	-3	A
Collector Power Dissipation	TO-126/TO-126C	$P_D$	1.4	W
	TO-92		1	W
	SOT-89		500	mW
Junction Temperature		$T_J$	+150	°C
Storage Temperature		$T_{STG}$	-40 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (Ta=25 , unless otherwise specified)

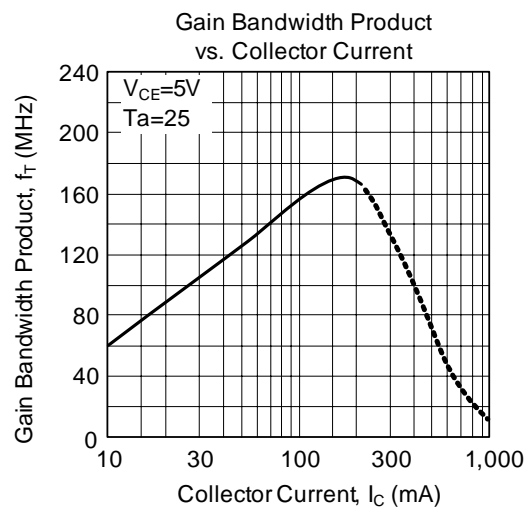
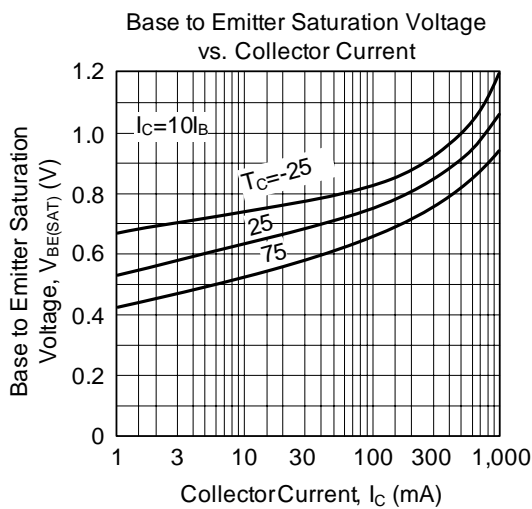
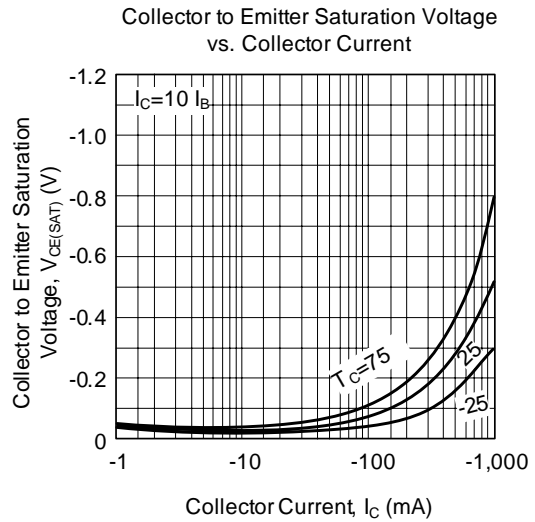
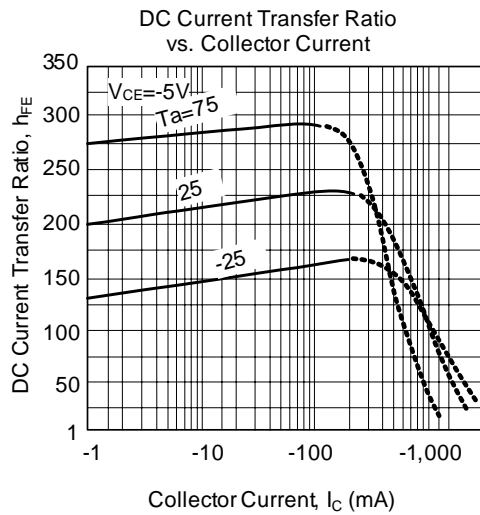
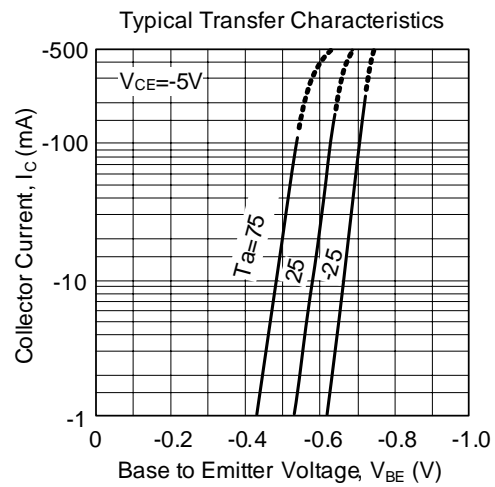
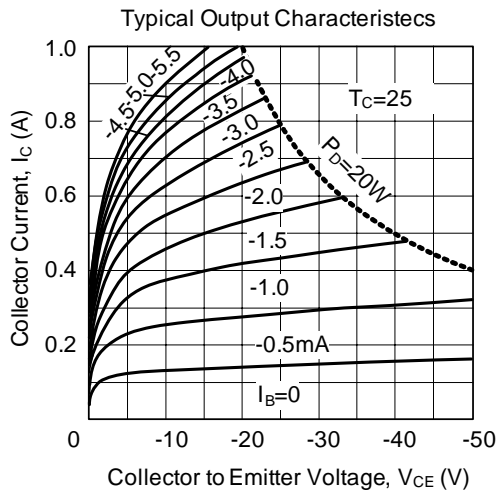
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector to Base Breakdown Voltage		$BV_{CBO}$	$I_C=-1mA, I_E=0$	-180			V
Collector to Emitter Breakdown Voltage	2SB649	$BV_{CEO}$	$I_C=-10mA, R_{BE}=\infty$	-120			V
	2SB649A			-160			
Emitter to Base Breakdown Voltage		$BV_{EBO}$	$I_E=-1mA, I_C=0$	-5			V
Collector Cut-off Current		$I_{CBO}$	$V_{CB}=-160V, I_E=0$			-10	$\mu A$
DC Current Gain	2SB649	$h_{FE1}$	$V_{CE}=-5V, I_C=-150mA$ (note)	60		320	
		$h_{FE2}$	$V_{CE}=-5V, I_C=-500mA$ (note)	30			
	2SB649A	$h_{FE1}$	$V_{CE}=-5V, I_C=-150mA$ (note)	60		200	
		$h_{FE2}$	$V_{CE}=-5V, I_C=-500mA$ (note)	30			
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$	$I_C=-600mA, I_B=-50mA$			-1	V
Base-Emitter Voltage		$V_{BE}$	$V_{CE}=-5V, I_C=-150mA$			-1.5	V
Current Gain Bandwidth Product		$f_T$	$V_{CE}=-5V, I_C=-150mA$		140		MHz
Output Capacitance		$C_{ob}$	$V_{CB}=-10V, I_E=0, f=1MHz$		27		pF

Note: Pulse test.

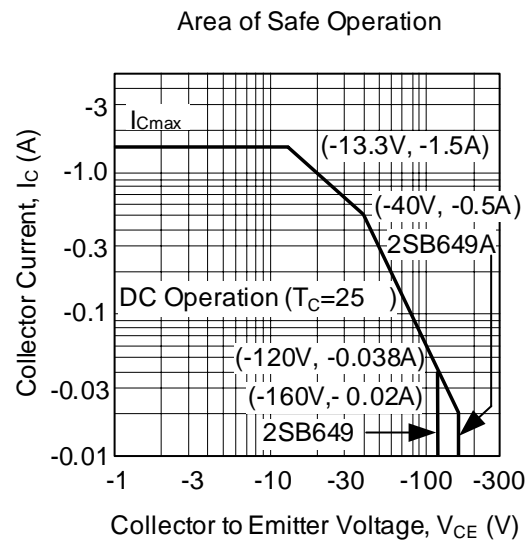
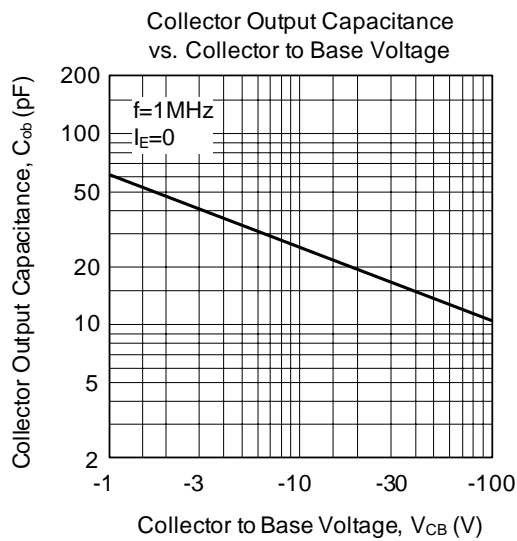
■ CLASSIFICATION OF  $h_{FE}$

RANK	B	C	D
RANGE	60-120	100-200	160-320

### TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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