



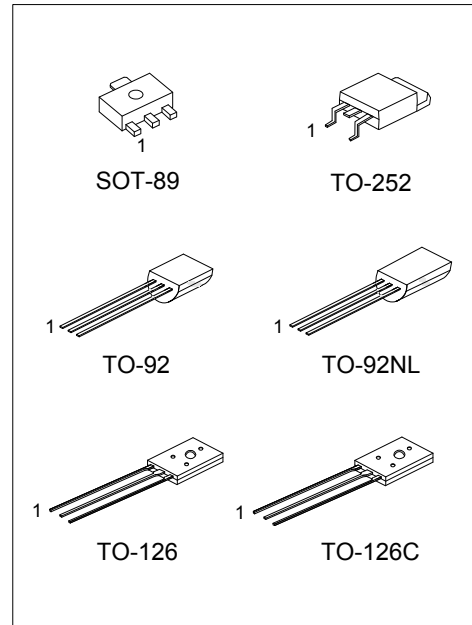
2SB649/A

PNP SILICON TRANSISTOR

BIPOLAR POWER GENERAL PURPOSE TRANSISTOR

■ APPLICATIONS

* Low frequency power amplifier complementary pair with UTC 2SD669/A



Lead-free: 2SB649L/2SB649AL
Halogen-free: 2SB649G/2SB649AG

■ ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free	Halogen Free		1	2	3	
2SB649x-x-AB3-R	2SB649xL-x-AB3-R	2SB649xG-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SB649x-x-T6C-K	2SB649xL-x-T6C-K	2SB649xG-x-T6C-K	TO-126C	E	C	B	Bulk
2SB649x-x-T60-K	2SB649xL-x-T60-K	2SB649xG-x-T60-K	TO-126	E	C	B	Bulk
2SB649x-x-T92-B	2SB649xL-x-T92-B	2SB649xG-x-T92-B	TO-92	E	C	B	Tape Box
2SB649x-x-T92-K	2SB649xL-x-T92-K	2SB649xG-x-T92-K	TO-92	E	C	B	Bulk
2SB649x-x-T9N-B	2SB649xL-x-T9N-B	2SB649xG-x-T9N-B	TO-92NL	E	C	B	Tape Box
2SB649x-x-T9N-K	2SB649xL-x-T9N-K	2SB649xG-x-T9N-K	TO-92NL	E	C	B	Bulk
2SB649x-x-TN3-R	2SB649xL-x-TN3-R	2SB649xG-x-TN3-R	TO-252	B	C	E	Tape Reel

<p>2SB649xL-x-AB3-R</p> <p>(1)Packing Type (2)Package Type (3)Rank (4)Lead Plating (5) Collector-Emitter Voltage</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel (2) AB3: SOT-89, T6C: TO-126C, T60: TO-126, T92: TO-92, T9N: TO-92NL, TN3: TO-252 (3) x: refer to Classification of h_{FE1} (4) G: Halogen Free, L: Lead Free, Blank: Pb/Sn (5) A: -160V, Blank: -120V</p>
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■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	-180	V
Collector-Emitter Voltage	2SB649	V_{CEO}	-120	V
	2SB649A		-160	V
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_C	1	W
	TO-92/TO-92NL		0.6	W
	SOT-89		0.5	W
	TO-252		2	W
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°C, unless otherwise specified)

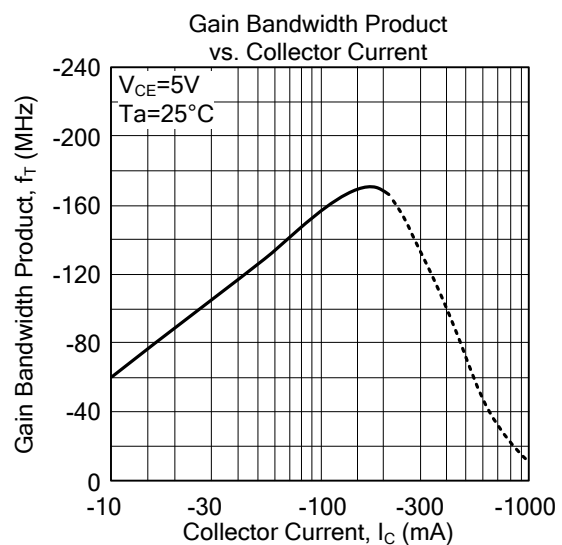
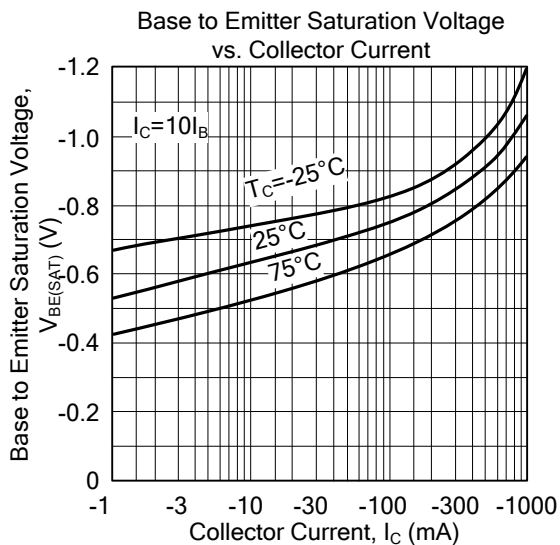
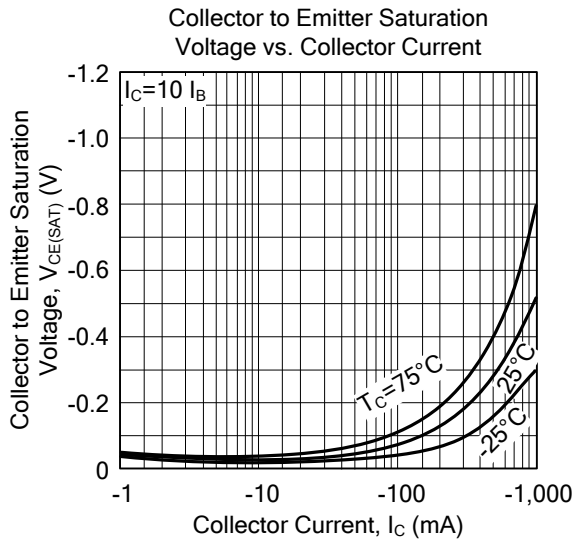
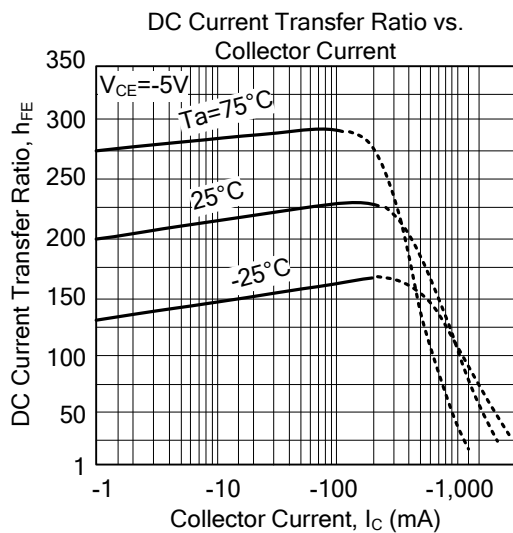
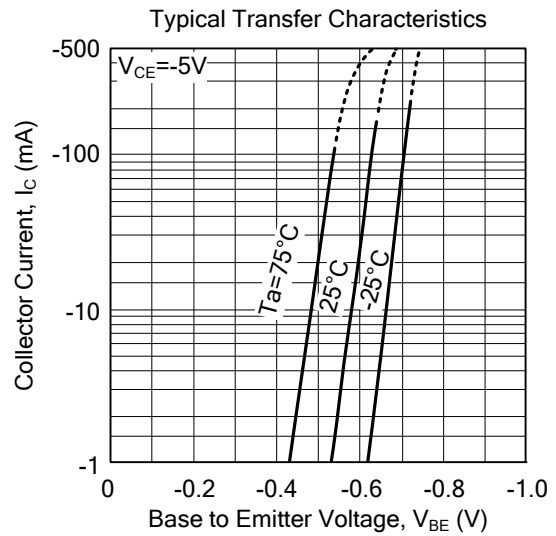
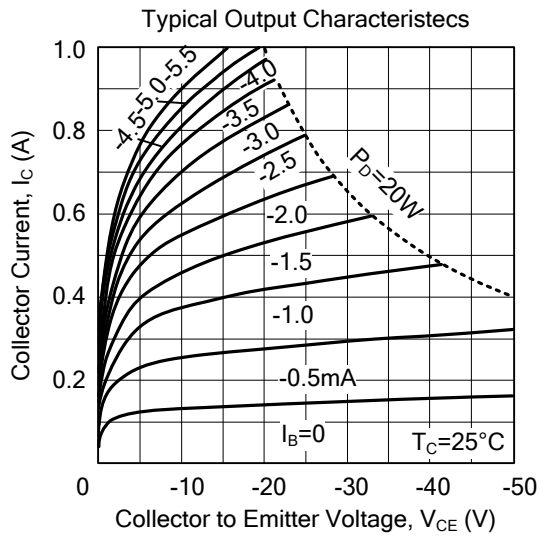
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector to Base Breakdown Voltage		BV_{CBO}	$I_C = -1mA, I_E = 0$	-180			V
Collector to Emitter Breakdown Voltage	2SB649	BV_{CEO}	$I_C = -10mA, R_{BE} = \infty$	-120			V
	2SB649A			-160			
Emitter to Base Breakdown Voltage		BV_{EBO}	$I_E = -1mA, I_C = 0$	-5			V
Collector Cut-off Current		I_{CBO}	$V_{CB} = -160V, I_E = 0$			-10	μA
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.

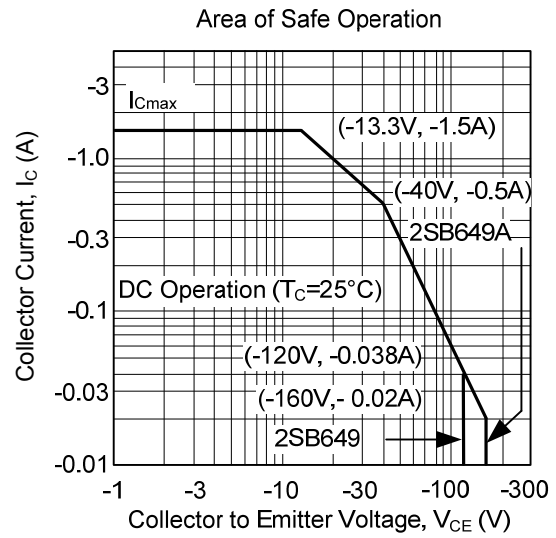
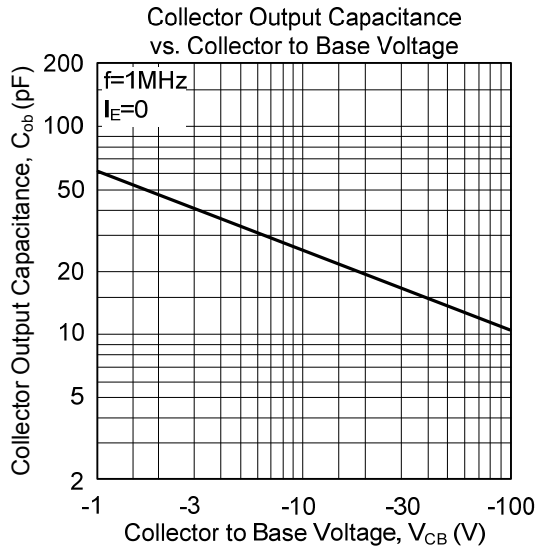
■ CLASSIFICATION OF h_{FE1}

RANGE	RANK		
	B	C	D
2SB649	60-120	100-200	160-320
2SB649A	60-120	100-200	-

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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