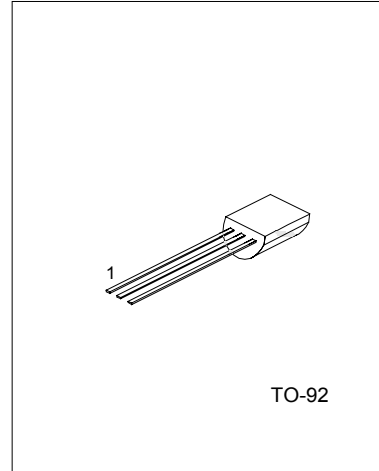


**BIPOLAR POWER GENERAL  
PURPOSE TRANSISTOR**

**APPLICATIONS**

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



TO-92

1:EMITTER 2:COLLECTOR 3:BASE

**ABSOLUTE MAXIMUM RATINGS** (Ta=25°C, unless otherwise specified )

PARAMETER	SYMBOL	RATING	UNIT
Collector-base voltage	V <sub>CB0</sub>	-180	V
Collector-emitter voltage	V <sub>CEO</sub>		V
2SB649		-120	
2SB649A		-160	
Emitter-base voltage	V <sub>EB0</sub>	-5	V
Collector current	I <sub>C</sub>	-1.5	A
Collector peak current	I <sub>C(peak)</sub>	-3	A
Collector power dissipation	P <sub>C</sub>	1	W
Collector power dissipation (T <sub>C</sub> =25°C)	P <sub>C</sub>	20	W
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +150	°C

**ELECTRICAL CHARACTERISTICS** (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector to bse breakdown voltage	V <sub>(BR)CB0</sub>	I <sub>C</sub> =-1mA, I <sub>E</sub> =0	-180			V
Collector to emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =-10mA, R <sub>BE</sub> =∞				V
2SB649			-120			
2SB649A			-160			
Emitter to base breakdown voltage	V <sub>(BR)EB0</sub>	I <sub>E</sub> =-1mA, I <sub>C</sub> =0	-5			V
Collector cut-off current	I <sub>CB0</sub>	V <sub>CB</sub> =-160V, I <sub>E</sub> =0			-10	μA

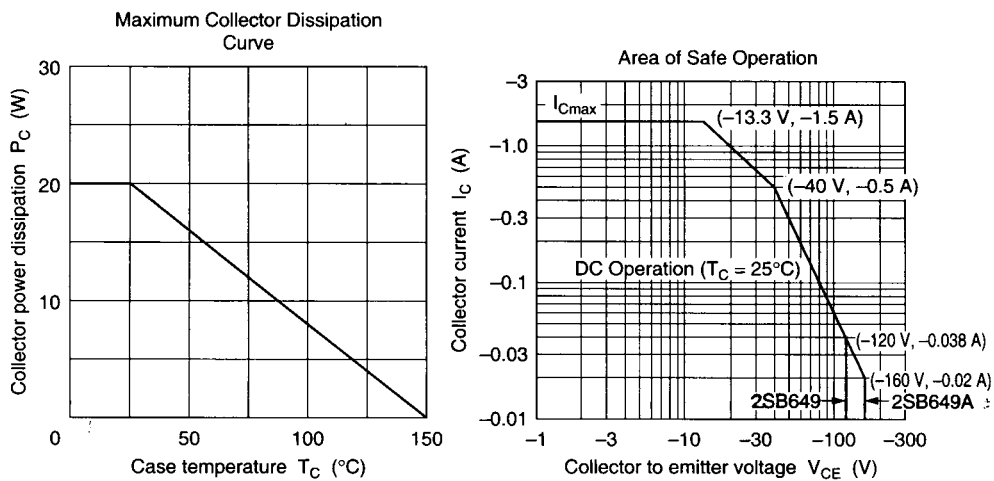
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
DC current gain	2SB649	hFE1	VCE=-5V, Ic=-150mA (note)	60		320	
		hFE2	VCE=-5V, Ic=-500mA (note)	30			
	2SB649A	hFE1	VCE=-5V, Ic=-150mA (note)	60		200	
		hFE2	VCE=-5V, Ic=-500mA (note)	30			
Collector-emitter saturation voltage		VCE(sat)	Ic=-600mA, IB=-50mA			-1	V
Base-emitter voltage		VBE	VCE=-5V, Ic=-150mA			-1.5	V
Current gain bandwidth product		fT	VCE=-5V, Ic=-150mA		140		MHz
Output capacitance		Cob	VCB=-10V, IE=0, f=1MHz		27		pF

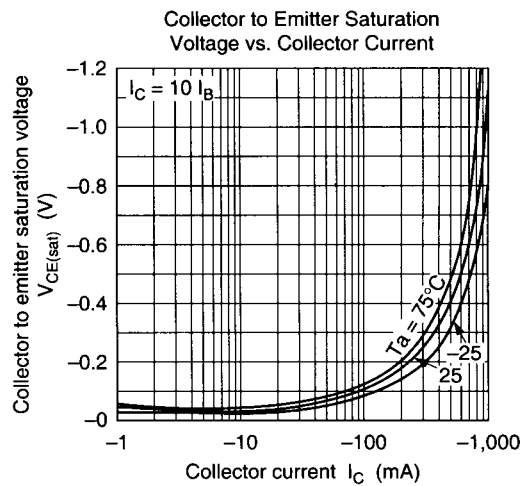
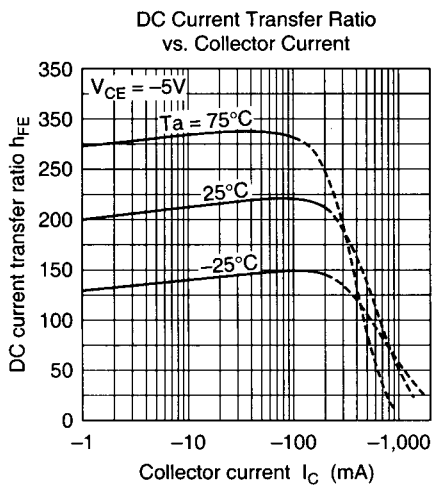
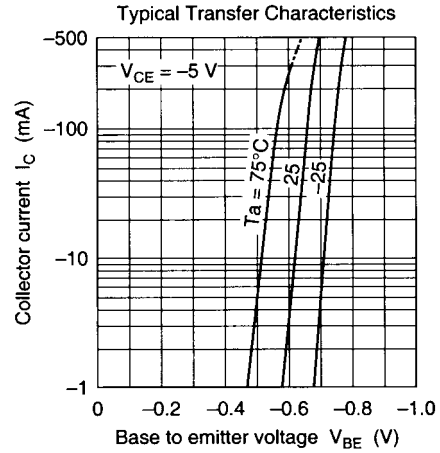
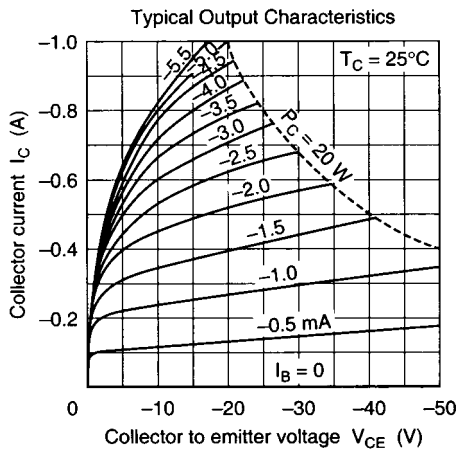
Note: Pulse test.

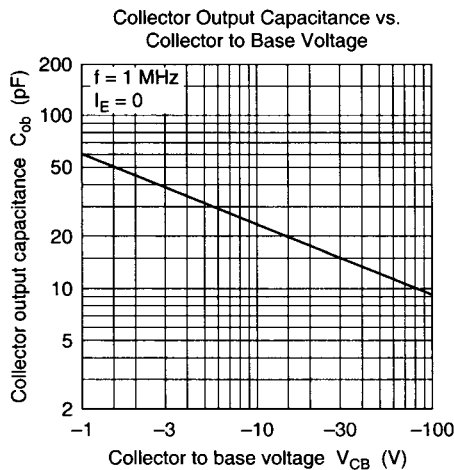
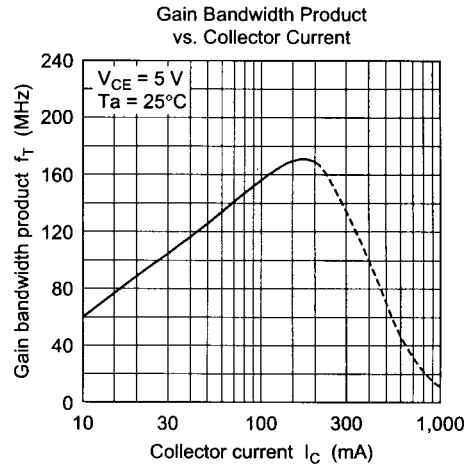
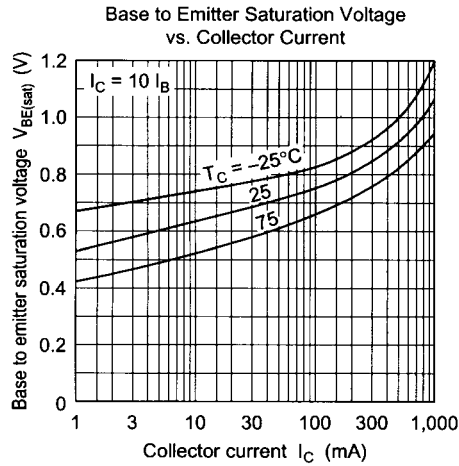
CLASSIFICATION OF hFE1

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

TYPICAL PARAMETERS PERFORMANCE







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