



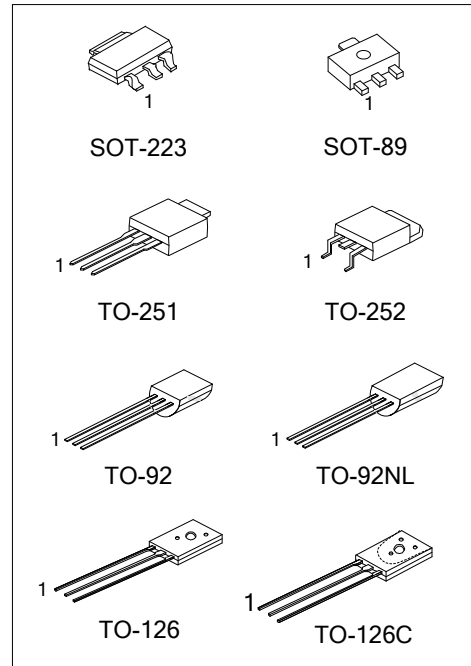
# 2SD669/A

## NPN SILICON TRANSISTOR

### BIPOLAR POWER GENERAL PURPOSE TRANSISTOR

■ APPLICATIONS

\* Low frequency power amplifier complementary pair with UTC 2SB649/A



■ ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free	Halogen Free		1	2	3	
2SD669x-x-AA3-R	2SD669xL-x-AA3-R	2SD669xG-x-AA3-R	SOT-223	B	C	E	Tape Reel
2SD669x-x-AB3-R	2SD669xL-x-AB3-R	2SD669xG-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SD669x-x-T60-K	2SD669xL-x-T60-K	2SD669xG-x-T60-K	TO-126	E	C	B	Bulk
2SD669x-x-T6C-K	2SD669xL-x-T6C-K	2SD669xG-x-T6C-K	TO-126C	E	C	B	Bulk
2SD669x-x-T92-B	2SD669xL-x-T92-B	2SD669xG-x-T92-B	TO-92	E	C	B	Tape Box
2SD669x-x-T92-K	2SD669xL-x-T92-K	2SD669xG-x-T92-K	TO-92	E	C	B	Bulk
2SD669x-x-T92-R	2SD669xL-x-T92-R	2SD669xG-x-T92-R	TO-92	E	C	B	Tape Reel
2SD669x-x-T9N-B	2SD669xL-x-T9N-B	2SD669xG-x-T9N-B	TO-92NL	E	C	B	Tape Box
2SD669x-x-T9N-K	2SD669xL-x-T9N-K	2SD669xG-x-T9N-K	TO-92NL	E	C	B	Bulk
2SD669x-x-TM3-T	2SD669xL-x-TM3-T	2SD669xG-x-TM3-T	TO-251	B	C	E	Tube
2SD669x-x-TN3-R	2SD669xL-x-TN3-R	2SD669xG-x-TN3-R	TO-252	B	C	E	Tape Reel

<p>2SD669xL-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) AA3: SOT-223, AB3: SOT-89, T60: TO-126, T6C: TO-126C, TM3: TO-251, TN3: TO-252, T92:TO-92, T9N: TO-92NL (3) x: refer to Classification of <math>h_{FE1}</math> (4) G: Halogen Free, L: Lead Free, Blank: Pb/Sn (5) A: 160V, Blank: 120V</p>
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■ ABSOLUTE MAXIMUM RATING (Ta=25°C unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		$V_{CBO}$	180	V
Collector-Emitter Voltage	2SD669	$V_{CEO}$	120	V
	2SD669A		160	
Emitter-Base Voltage		$V_{EBO}$	5	V
Collector Current		$I_C$	1.5	A
Collector Peak Current		$I_{C(PK)}$	3	A
Power Dissipation	SOT-223/ SOT-89	$P_D$	0.5	W
	TO-126		1.3	W
	TO-126C		1	W
	TO-92/TO-92NL		0.6	W
	TO-251		1	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.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Case	SOT-89	$\theta_{JC}$	38	°C/W
	SOT-223		14	
	TO-92/ TO-92NL		80	
	TO-126		6.25	
	TO-126C		10	
	TO-251/ TO-252		4.5	

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

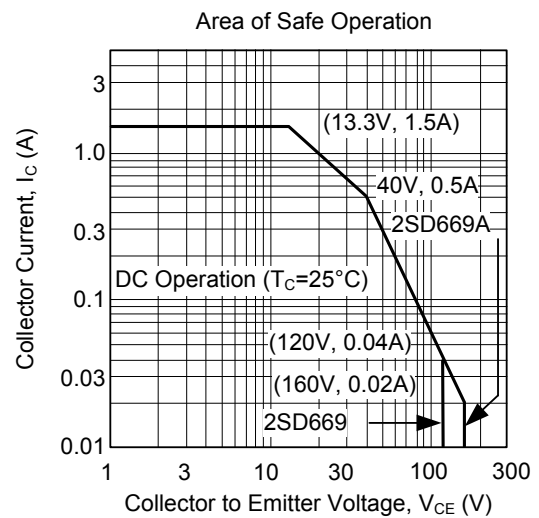
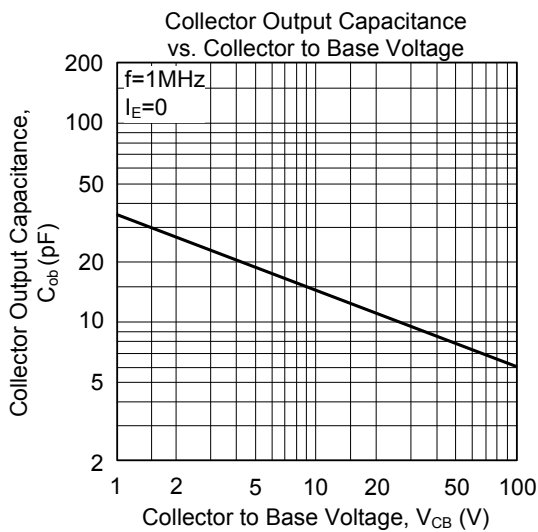
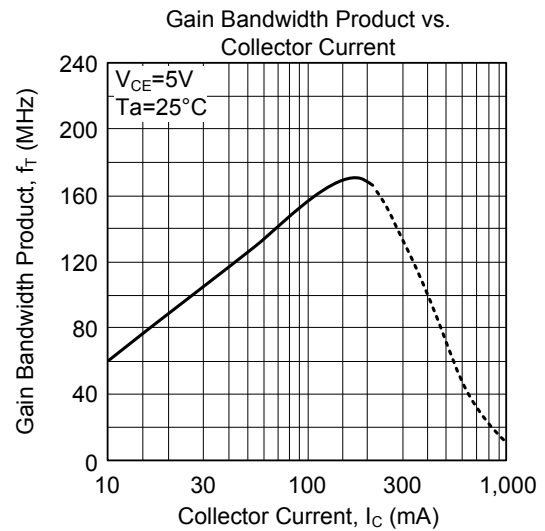
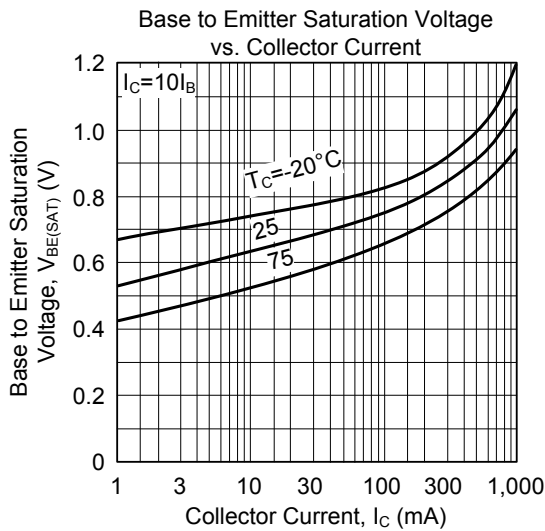
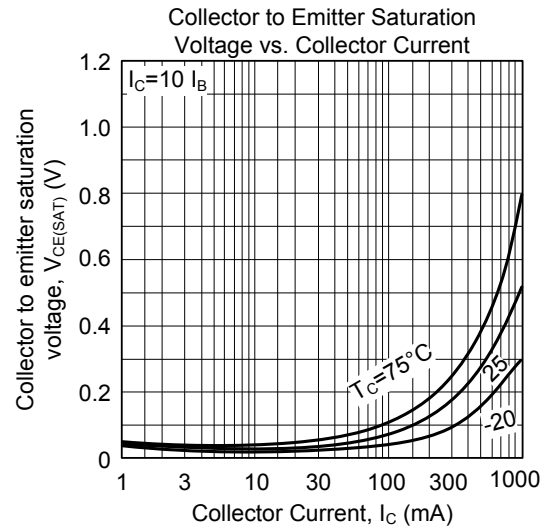
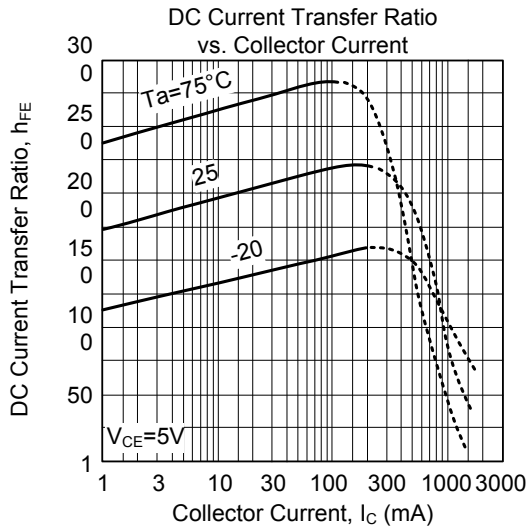
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector to Base Breakdown Voltage	$BV_{CBO}$	$I_C=1mA, I_E=0$	180			V
Collector to Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=10mA, R_{BE}=\infty$	120			V
			160			
Emitter to Base Breakdown Voltage	$BV_{EBO}$	$I_E=1mA, I_C=0$	5			V
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=160V, I_E=0$			10	μA
DC Current Gain	$h_{FE1}$	$V_{CE}=5V, I_C=150mA$ (Note)	60		320	
	$h_{FE2}$	$V_{CE}=5V, I_C=500mA$ (Note)	30			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=600mA, I_B=50mA$ (Note)			1	V
Base-Emitter Voltage	$V_{BE}$	$V_{CE}=5V, I_C=150mA$ (Note)			1.5	V
Current Gain Bandwidth Product	$f_T$	$V_{CE}=5V, I_C=150mA$ (Note)		140		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$		14		pF

Note: Pulse test.

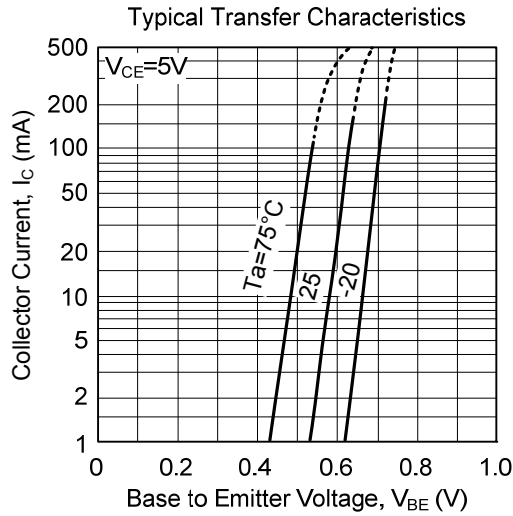
■ CLASSIFICATION OF  $h_{FE1}$

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

## TYPICAL CHARACTERISTICS



## ■ TYPICAL CHARACTERISTICS(Cont.)



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