



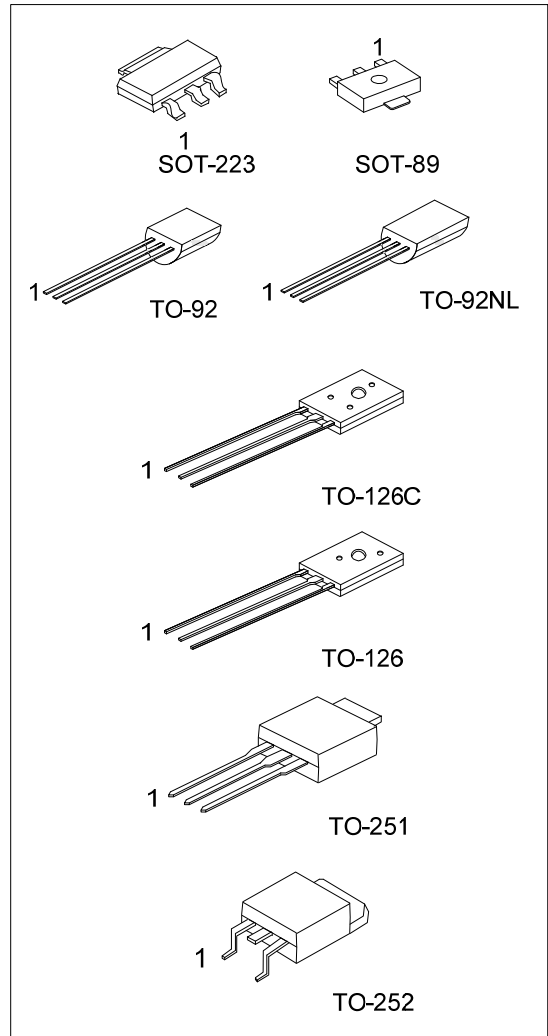
2SD669/A

NPN SILICON TRANSISTOR

BIPOLAR POWER GENERAL PURPOSE TRANSISTOR

■ APPLICATIONS

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



Lead-free: 2SD669L/2SD669AL

Halogen-free: 2SD669G/2SD669AG

■ ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free Plating	Halogen-Free		1	2	3	
2SD669-x-AA3-R	2SD669L-x-AA3-R	2SD669G-x-AA3-R	SOT-223	B	C	E	Tape Reel
2SD669-x-AB3-R	2SD669L-x-AB3-R	2SD669G-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SD669-x-T60-K	2SD669L-x-T60-K	2SD669G-x-T60-K	TO-126	E	C	B	Bulk
2SD669-x-T6C-K	2SD669L-x-T6C-K	2SD669G-x-T6C-K	TO-126C	E	C	B	Bulk
2SD669-x-T92-B	2SD669L-x-T92-B	2SD669G-x-T92-B	TO-92	E	C	B	Tape Box
2SD669-x-T92-K	2SD669L-x-T92-K	2SD669G-x-T92-K	TO-92	E	C	B	Bulk
2SD669-x-T9N-B	2SD669L-x-T9N-B	2SD669G-x-T9N-B	TO-92NL	E	C	B	Tape Box
2SD669-x-T9N-K	2SD669L-x-T9N-K	2SD669G-x-T9N-K	TO-92NL	E	C	B	Bulk
2SD669-x-T9N-R	2SD669L-x-T9N-R	2SD669G-x-T9N-R	TO-92NL	E	C	B	Tape Reel
2SD669-x-TM3-T	2SD669L-x-TM3-T	2SD669G-x-TM3-T	TO-251	E	C	B	Tube
2SD669-x-TN3-R	2SD669L-x-TN3-R	2SD669G-x-TN3-R	TO-252	B	C	E	Tape Reel
2SD669-x-TN3-T	2SD669L-x-TN3-T	2SD669G-x-TN3-T	TO-252	B	C	E	Tube

■ ORDERING INFORMATION(Cont.)

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free Plating	Halogen-Free Plating		1	2	3	
2SD669A-x-AA3-R	2SD669AL-x-AA3-R	2SD669AG-x-AA3-R	SOT-223	B	C	E	Tape Reel
2SD669A-x-AB3-R	2SD669AL-x-AB3-R	2SD669AG-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SD669A-x-T60-K	2SD669AL-x-T60-K	2SD669AG-x-T60-K	TO-126	E	C	B	Bulk
2SD669A-x-T6C-R	2SD669AL-x-T6C-R	2SD669AG-x-T6C-R	TO-126C	E	C	B	Bulk
2SD669A-x-T92-B	2SD669AL-x-T92-B	2SD669AG-x-T92-B	TO-92	E	C	B	Tape Box
2SD669A-x-T92-K	2SD669AL-x-T92-K	2SD669AG-x-T92-K	TO-92	E	C	B	Bulk
2SD669A-x-T9N-B	2SD669AL-x-T9N-B	2SD669AG-x-T9N-B	TO-92NL	E	C	B	Tape Box
2SD669A-x-T9N-K	2SD669AL-x-T9N-K	2SD669AG-x-T9N-K	TO-92NL	E	C	B	Bulk
2SD669A-x-T9N-R	2SD669AL-x-T9N-R	2SD669AG-x-T9N-R	TO-92NL	E	C	B	Tape Reel
2SD669A-x-TM3-T	2SD669AL-x-TM3-T	2SD669AG-x-TM3-T	TO-251	E	C	B	Tube
2SD669A-x-TN3-R	2SD669AL-x-TN3-R	2SD669AG-x-TN3-R	TO-252	B	C	E	Tape Reel
2SD669A-x-TN3-T	2SD669AL-x-TN3-T	2SD669AG-x-TN3-T	TO-252	B	C	E	Tube

<p>2SD669L-x-AB3-R</p> <p>(1)Packing Type (2)Package Type (3)Rank (4)Lead Plating</p>	<p>(1) K: Bulk, R: Tape Reel, T: Tube (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 h_{FE1} (4) G: Halogen Free, L: Lead Free Plating, Blank: Pb/Sn</p>
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■ ABSOLUTE MAXIMUM RATING (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V _{CB0}	180	V
Collector-Emitter Voltage	V _{CEO}	2SD669 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
Collector Power Dissipation	P _D	SOT-223 0.5	W
Collector Power Dissipation		TO-126 1	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 _{CB0}	I _C =1mA, I _E =0	180			V
Collector to Emitter Breakdown Voltage	BV _{CEO}	I _C =10mA, R _{BE} =∞	2SD669 120			V
			2SD669A 160			
Emitter to Base Breakdown Voltage	BV _{EBO}	I _E =1mA, I _C =0	5			V
Collector Cut-off Current	I _{CB0}	V _{CB} =160V, I _E =0			10	μA
DC Current Gain	h _{FE1}	V _{CE} =5V, I _C =150mA (Note)	60		320	
		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

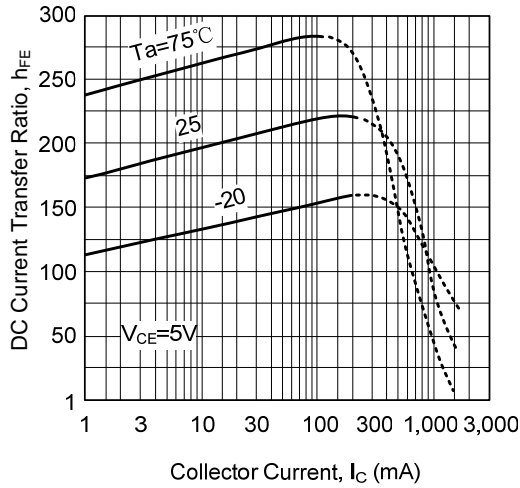
Note: Pulse test.

■ CLASSIFICATION OF h_{FE1}

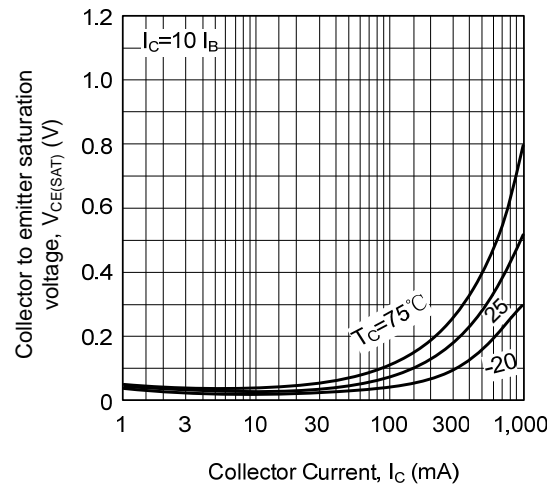
RANK	B	C	D
RANGE	60-120	100-200	160-320

TYPICAL CHARACTERISTICS

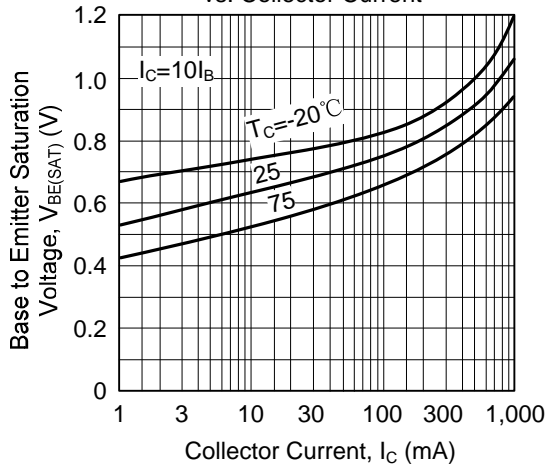
DC Current Transfer Ratio vs. Collector Current



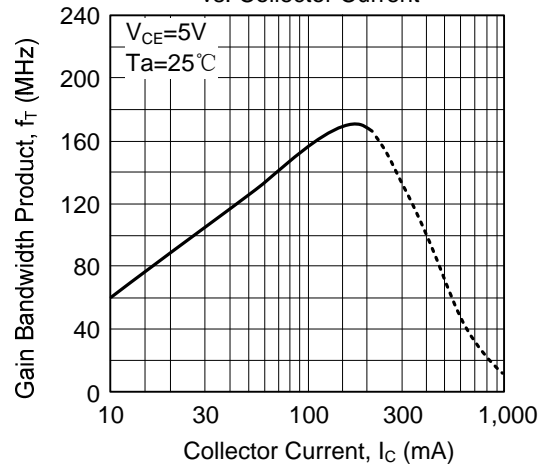
Collector to Emitter Saturation Voltage vs. Collector Current



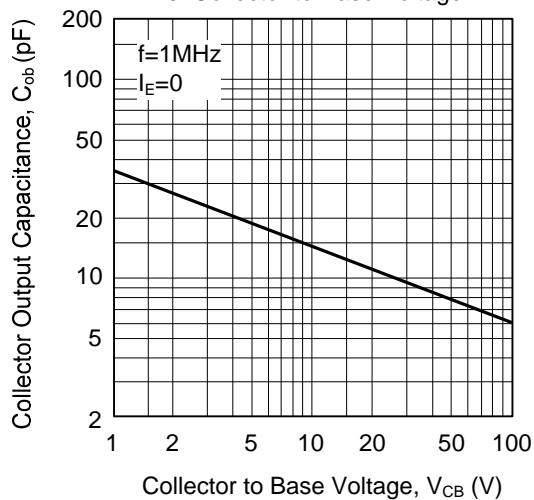
Base to Emitter Saturation Voltage vs. Collector Current



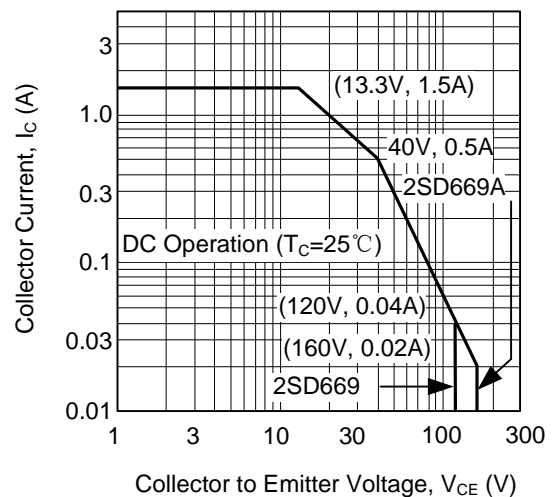
Gain Bandwidth Product vs. Collector Current



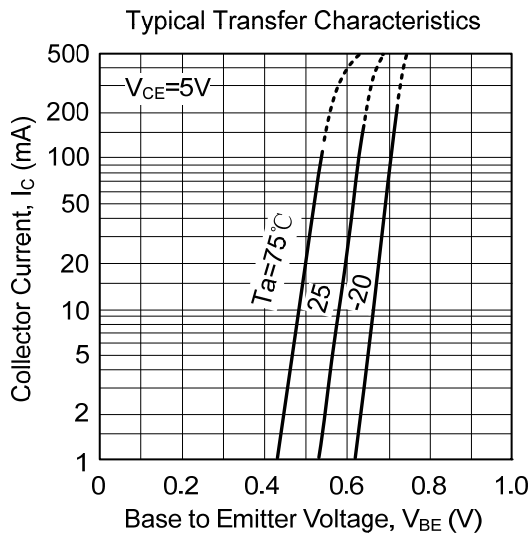
Collector Output Capacitance vs. Collector to Base Voltage



Area of Safe Operation



■ TYPICAL CHARACTERISTICS(Cont.)



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