

**TO-126 Plastic-Encapsulate Transistors****2SD669****2SD669A**

TRANSISTOR (NPN)

FEATURES

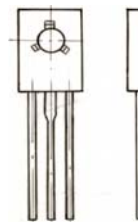
Low frequency power amplifier complementary pair
with 2SB649/A

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector- Base Voltage	180	V
V_{CEO}	Collector-Emitter Voltage 2SD669 2SD669A	120 160	V
V_{EBO}	Emitter-Base Voltage	5	V
I_{C}	Collector Current -Continuous	1.5	A
P_{C}	Collector Dissipation	1	W
T_{J}	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55-150	$^{\circ}\text{C}$

TO-126

1. EMITTER
2. COLLECTOR
3. BASE



1 2 3

ELECTRICAL CHARACTERISTICS ($T_{\text{amb}}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	$I_{\text{C}}=1\text{mA}$, $I_{\text{E}}=0$	180			V
Collector-emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	$I_{\text{C}}=10\text{mA}$, $I_{\text{B}}=0$ 2SD669 2SD669A	120 160			V
Emitter-base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	$I_{\text{E}}=1\text{mA}$, $I_{\text{C}}=0$	5			V
Collector cut-off current	I_{CBO}	$V_{\text{CB}}=160\text{V}$, $I_{\text{E}}=0$			10	μA
Emitter cut-off current	I_{EBO}	$V_{\text{EB}}=4\text{V}$, $I_{\text{C}}=0$			10	μA
DC current gain	$h_{\text{FE}(1)}$	$V_{\text{CE}}=5\text{V}$, $I_{\text{C}}=150\text{mA}$ 2SD669 2SD669A	60 60		320 200	
	$h_{\text{FE}(2)}$	$V_{\text{CE}}=5\text{V}$, $I_{\text{C}}=500\text{mA}$	30			
Collector-emitter saturation voltage	$V_{\text{CE(sat)}}$	$I_{\text{C}}=500\text{mA}$, $I_{\text{B}}=50\text{mA}$			1	V
Base-emitter voltage	V_{BE}	$V_{\text{CE}}=5\text{V}$, $I_{\text{C}}=150\text{mA}$			1.5	V
Transition frequency	f_{T}	$V_{\text{CE}}=5\text{V}$, $I_{\text{C}}=150\text{mA}$		140		MHz
Collector output capacitance	C_{ob}	$V_{\text{CB}}=10\text{V}$, $I_{\text{E}}=0$, $f=1\text{MHz}$		14		pF

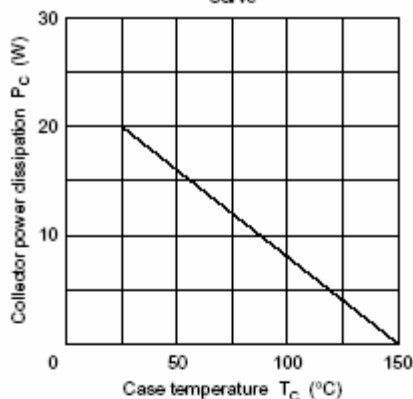
CLASSIFICATION OF $h_{\text{FE}(1)}$

Rank		B	C	D
Range	2SD669	60-120	100-200	160-320
	2SD669A	60-120	100-200	

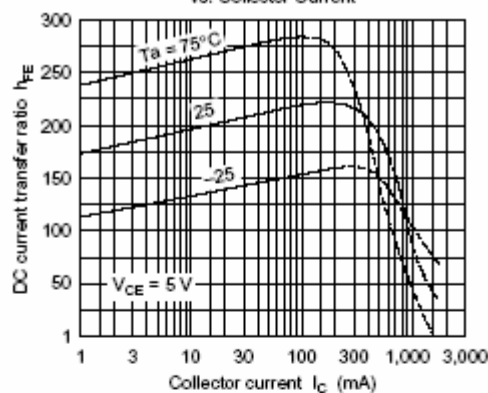
Typical Characteristics

2SD669/2SD669A

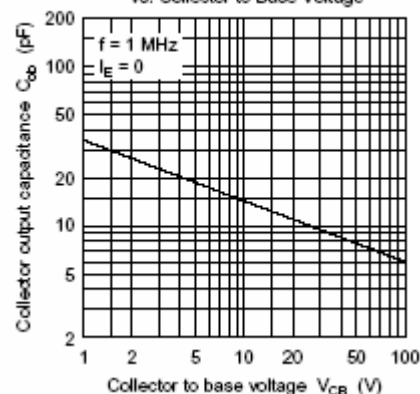
Maximum Collector Dissipation Curve



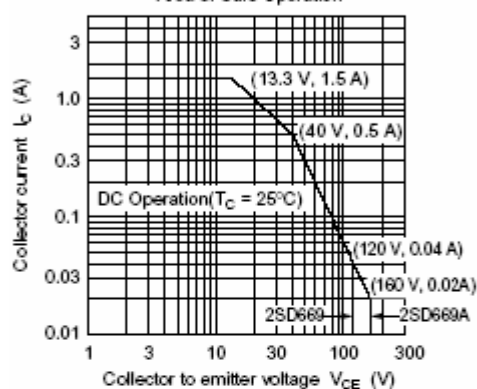
DC Current Transfer Ratio vs. Collector Current



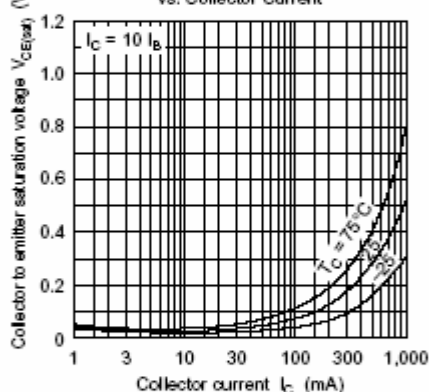
Collector Output Capacitance vs. Collector to Base Voltage



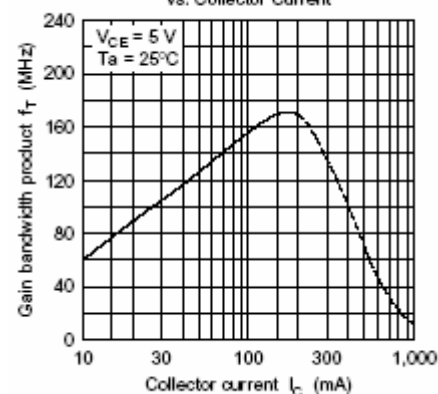
Area of Safe Operation



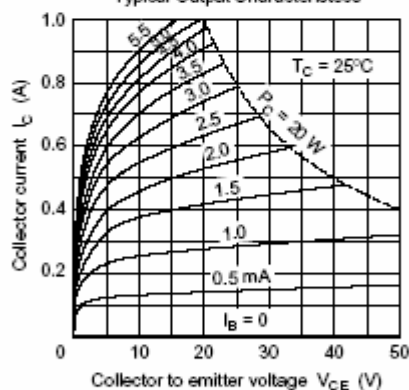
Collector to Emitter Saturation Voltage vs. Collector Current



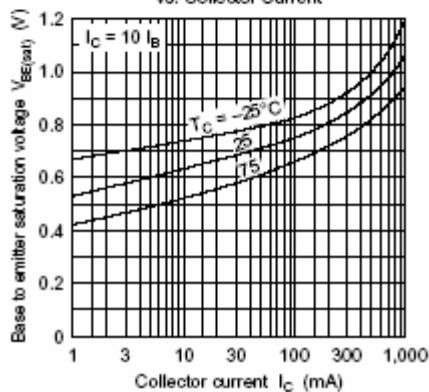
Gain Bandwidth Product vs. Collector Current



Typical Output Characteristics



Base to Emitter Saturation Voltage vs. Collector Current



Typical Transfer Characteristics

