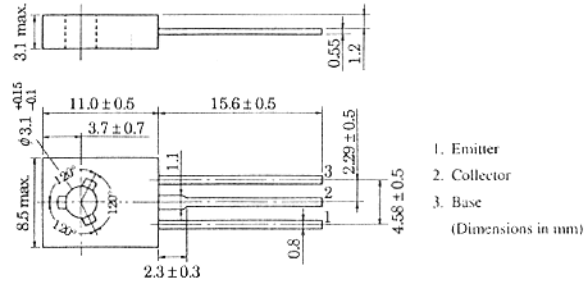


## 2SD668, 2SD668A

SILICON NPN EPITAXIAL

LOW FREQUENCY HIGH VOLTAGE AMPLIFIER  
COMPLEMENTARY PAIR WITH 2SB648/A



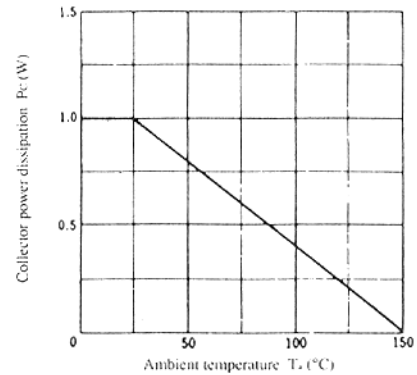
1. Emitter
  2. Collector
  3. Base
- (Dimensions in mm)

(JEDEC TO-126 MOD.)

### ■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SD668	2SD668A	Unit
Collector to base voltage	VCBO	180	180	V
Collector to emitter voltage	VCEO	120	160	V
Emitter to base voltage	VEBO	5	5	V
Collector current	IC	50	50	mA
Collector peak current	iC(peak)	100	100	mA
Collector power dissipation	PC	1	1	W
Junction temperature	Tj	150	150	°C
Storage temperature	Tstg	-55 to +150	-55 to +150	°C

### MAXIMUM COLLECTOR DISSIPATION CURVE



### ■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

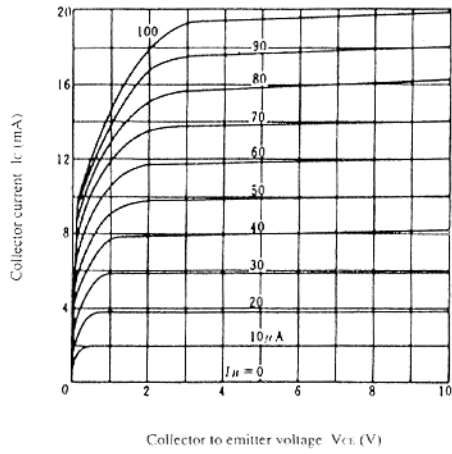
Item	Symbol	Test Condition	2SD668			2SD668A			Unit
			min.	typ.	max.	min.	typ.	max.	
Collector to base breakdown voltage	V(BR)CBO	IC = 10μA, IE = 0	180	—	—	180	—	—	V
Collector to emitter breakdown voltage	V(BR)CEO	IC = 1mA, RBE = ∞	120	—	—	160	—	—	V
Emitter to base breakdown voltage	V(BR)EBO	IE = 10μA, IC = 0	5	—	—	5	—	—	V
Collector cutoff current	ICBO	VCE = 160V, IE = 0	—	—	10	—	—	10	μA
DC current transfer ratio	hFE1*	VCE = 5V, IC = 10mA	60	—	320	60	—	200	
	hFE2	VCE = 5V, IC = 1mA	30	—	—	30	—	—	
Collector to emitter saturation voltage	VCE(sat)	IC = 30mA, IB = 3mA	—	—	2	—	—	2	V
Base to emitter voltage	VBE	VCE = 5V, IC = 10mA	—	—	1.5	—	—	1.5	V
Gain bandwidth product	fT	VCE = 10V, IC = 10mA	—	140	—	—	140	—	MHz
Collector output capacitance	Cob	VCE = 10V, IE = 0, f = 1MHz	—	3.5	—	—	3.5	—	pF

\* The 2SD668 and 2SD668A are grouped by hFE1 as follows.

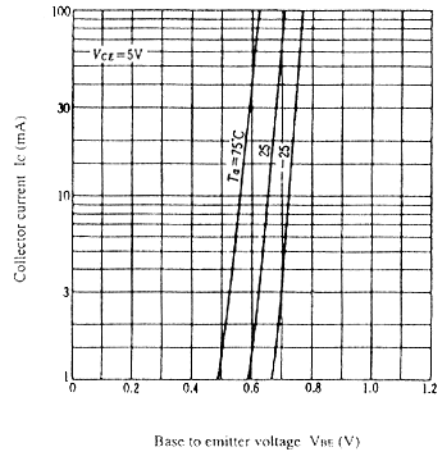
	B	C	D
2SD668	60 to 120	100 to 200	160 to 320
2SD668A	60 to 120	100 to 200	—

## 2SD668, 2SD668A

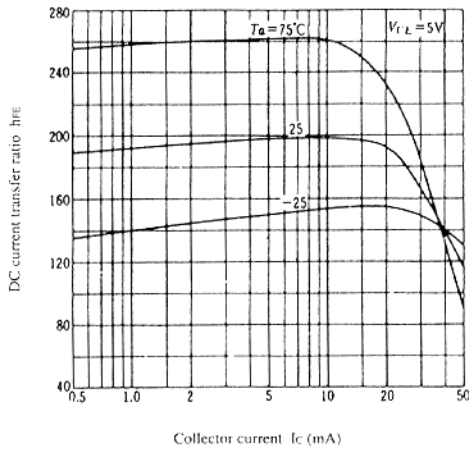
TYPICAL OUTPUT CHARACTERISTICS



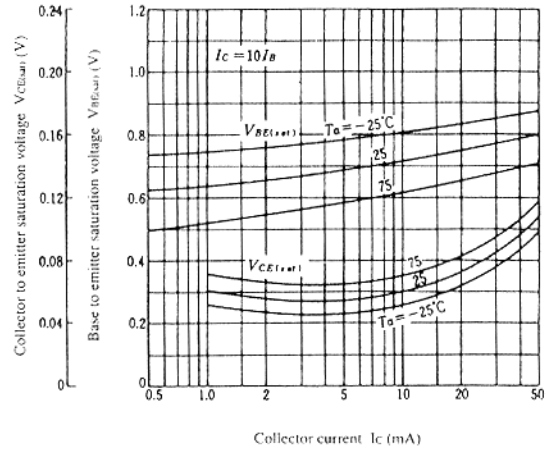
TYPICAL TRANSFER CHARACTERISTICS



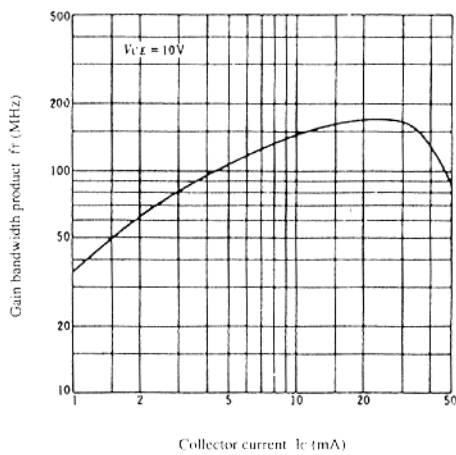
DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT



SATURATION VOLTAGE VS. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT VS. COLLECTOR CURRENT



COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE

