

# General purpose amplification (30V, 1A)

## 2SD2656

### ●Application

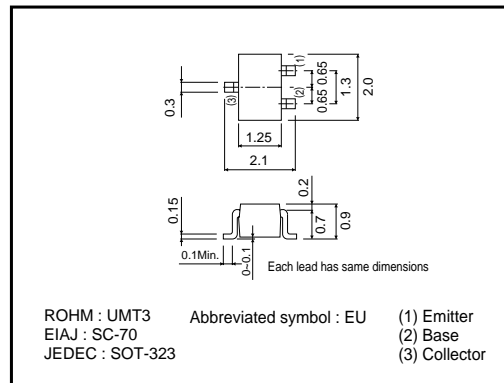
Low frequency amplifier

### ●Features

- 1) A collector current is large.
- 2) Collector saturation voltage is low.

$$V_{CE(sat)} \leq 350\text{mV}$$

$$\text{At } I_c = 500\text{mA} / I_B = 25\text{mA}$$



### ●External dimensions (Units : mm)

### ●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CB0}$	30	V
Collector-emitter voltage	$V_{CE0}$	30	V
Emitter-base voltage	$V_{EB0}$	6	V
Collector current	$I_c$	1	A
	$I_{CP}$	2	A *
Power dissipation	$P_C$	200	mW
Junction temperature	$T_J$	150	°C
Range of storage temperature	$T_{stg}$	-55~+150	°C

\*Single pulse,  $P_w=1\text{ms}$

### ●Packaging specifications

Type	Package	Taping
	2SD2656	Code
	Basic ordering unit (pieces)	3000
		○

### ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CB0}$	30	-	-	V	$I_c=10\mu\text{A}$
Collector-emitter breakdown voltage	$BV_{CE0}$	30	-	-	V	$I_c=1\text{mA}$
Emitter-base breakdown voltage	$BV_{EB0}$	6	-	-	V	$I_E=10\mu\text{A}$
Collector cutoff current	$I_{CB0}$	-	-	100	nA	$V_{CB}=30\text{V}$
Emitter cutoff current	$I_{EB0}$	-	-	100	nA	$V_{EB}=6\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	140	350	mV	$I_c/I_B=500\text{mA}/25\text{mA}$
DC current gain	$h_{FE}$	270	-	680	-	$V_{CE}/I_c=2\text{V}/100\text{mA}$ *1
Transition frequency	$f_r$	-	400	-	MHz	$V_{CE}=2\text{V}, I_E=-100\text{mA}, f=100\text{MHz}$ *1
Corrector output capacitance	$C_{ob}$	-	5	-	pF	$V_{CB}=10\text{V}, I_E=0\text{A}, f=1\text{MHz}$

\*1 Pulsed

Transistors

●Electrical characteristic curves

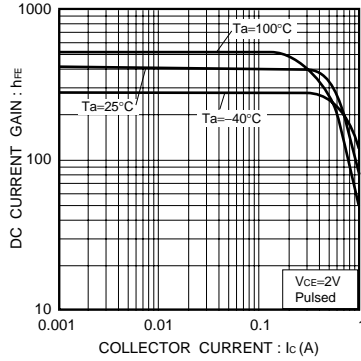


Fig.1 DC current gain vs. collector current

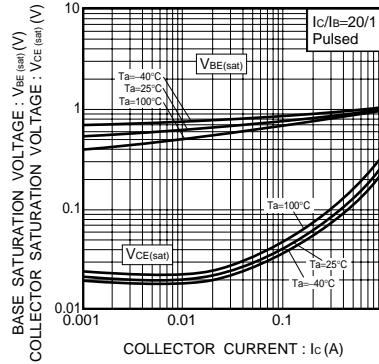


Fig.2 Collector-emitter saturation voltage base-emitter saturation voltage vs. collector current

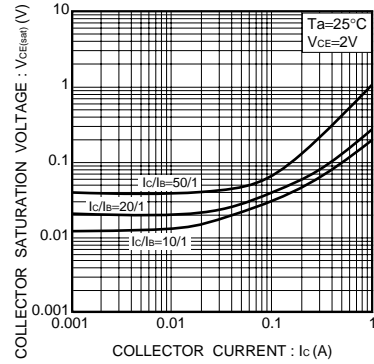


Fig.3 Collector-emitter saturation voltage vs. collector current

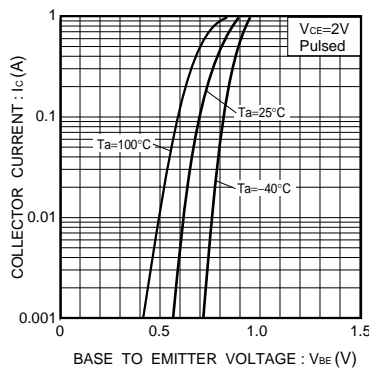


Fig.4 Grounded emitter propagation characteristics

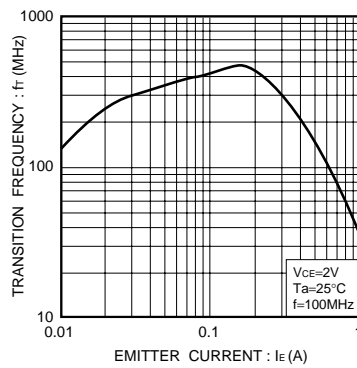


Fig.5 Gain bandwidth product vs. emitter current

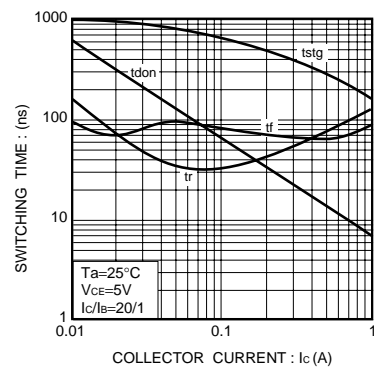


Fig.6 Switching time

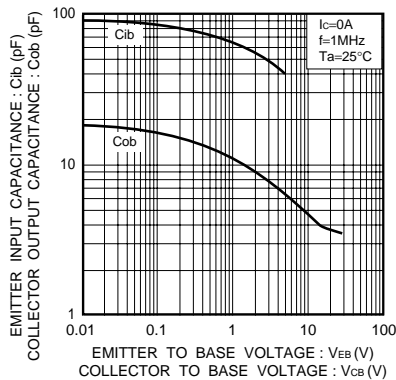


Fig.7 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

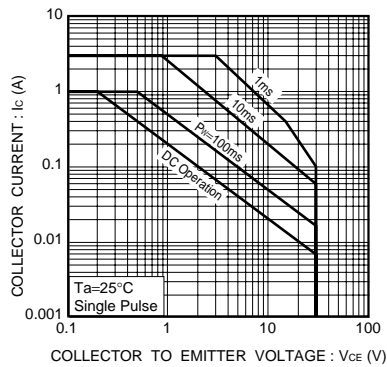


Fig.8 Safe Operating Area

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