

## Transistors

## Low frequency amplifier

## QST4

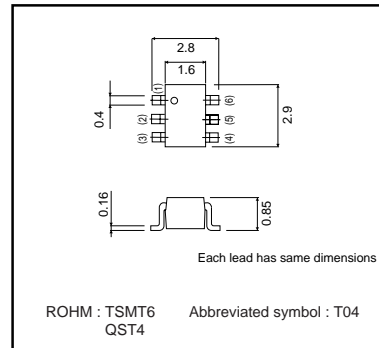
## ●Application

Low frequency amplifier  
Driver

## ●Features

- 1) A collector current is large.
- 2)  $V_{CE(sat)}$  : max.  $-250\text{mV}$   
At  $I_C = -1.5\text{A}$  /  $I_B = -30\text{mA}$

## ●External dimensions (Unit : mm)

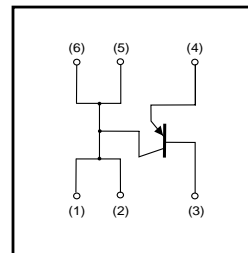


## ●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CB0}$	-15	V
Collector-emitter voltage	$V_{CEO}$	-12	V
Emitter-base voltage	$V_{EBO}$	-6	V
Collector current	$I_C$	-3	A
	$I_{CP}$	-6	A* <sup>1</sup>
Power dissipation	$P_C$	500	mW* <sup>2</sup>
		1.25	W* <sup>3</sup>
Junction temperature	$T_j$	150	°C
Range of storage temperature	$T_{stg}$	-55 to +150	°C

\*<sup>1</sup>Single pulse,  $P_w = 1\text{ms}$ \*<sup>2</sup>Each Terminal Mounted on a Recommended\*<sup>3</sup>Mounted on a 25mm×25mm×1.0.8mm Ceramic substrate

## ●Equivalent circuit



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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CB0}$	-15	-	-	V	$I_C = -10\mu\text{A}$
Collector-emitter breakdown voltage	$BV_{CEO}$	-12	-	-	V	$I_C = -1\text{mA}$
Emitter-base breakdown voltage	$BV_{EBO}$	-6	-	-	V	$I_E = -10\mu\text{A}$
Collector cutoff current	$I_{CBO}$	-	-	-100	nA	$V_{CB} = -15\text{V}$
Emitter cutoff current	$I_{EBO}$	-	-	-100	nA	$V_{EB} = -6\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-120	-250	mV	$I_C = -1.5\text{A}$ , $I_B = -30\text{mA}$
DC current gain	$h_{FE}$	270	-	680	-	$V_{CE} = -2\text{V}$ , $I_C = -500\text{mA}$ *
Transition frequency	$f_T$	-	280	-	MHz	$V_{CE} = -2\text{V}$ , $I_E = 500\text{mA}$ , $f = 100\text{MHz}$ *
Collector output capacitance	$C_{ob}$	-	30	-	pF	$V_{CB} = -10\text{V}$ , $I_E = 0\text{A}$ , $f = 1\text{MHz}$

\* Pulsed

Transistors

●Packaging specifications

Type	Package	Taping
	Code	TR
	Basic ordering unit (pieces)	3000
QST4		○

●Electrical characteristic curves

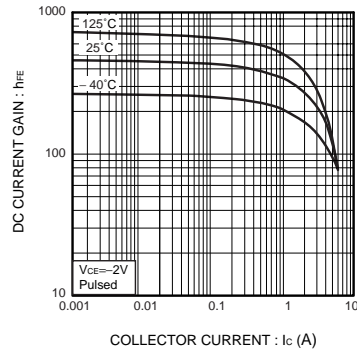


Fig.1. DC current gain vs. collector current

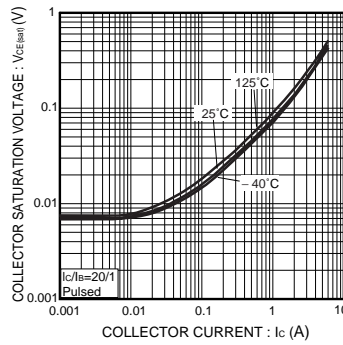


Fig.2. Collector-emitter saturation voltage vs. collector current

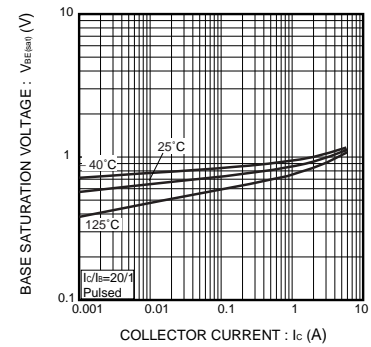


Fig.3. Base-emitter saturation voltage vs. collector current

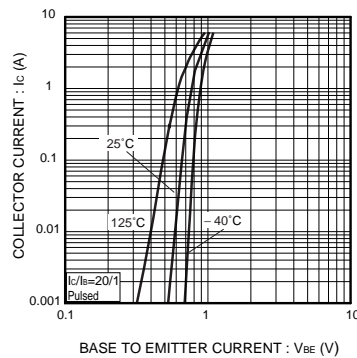


Fig.4. Grounded emitter propagation characteristics

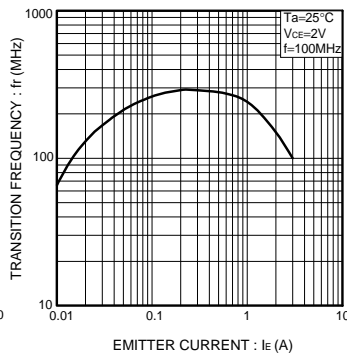


Fig.5. Gain bandwidth product vs. emitter current

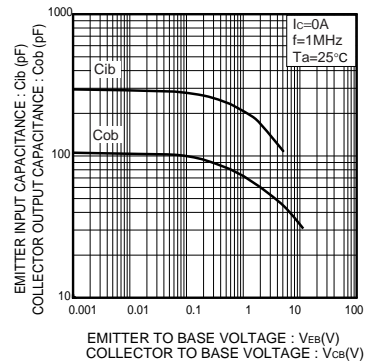


Fig.6. Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

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