Transistors

Low frequency amplifier
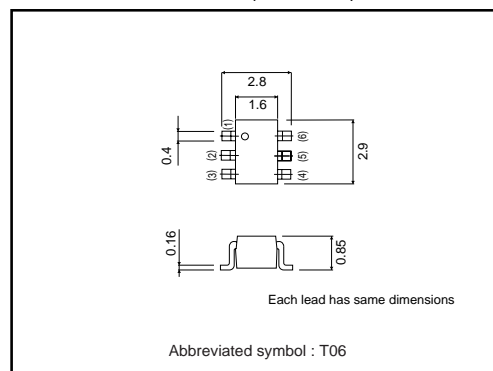
QST6

●**Application**

Low frequency amplifier
Driver

●**Features**

1) A collector current is large.
2) $V_{CE(sat)}$: max. −180mV
   At I_C= −1A / I_B= −50mA

●**External dimensions** (Unit : mm)

Each lead has same dimensions

Abbreviated symbol : T06

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−15	V
Collector-emitter voltage	V_{CEO}	−12	V
Emitter-base voltage	V_{EBO}	−6	V
Collector current	I_C	−2	A
	I_{CP}	−4	A *1
Power dissipation	P_C	500	mW *2
		1.25	W *3
Junction temperature	Tj	150	°C
Range of storage temperature	Tstg	−55 to +150	°C

*1 Single pulse, Pw=1ms
*2 Each Termminal Mounted on a Recommended
*3 Mounted on a 25mm×25mm×^{t}0.8mm ceramic substrate

●**Equivalent circuit**
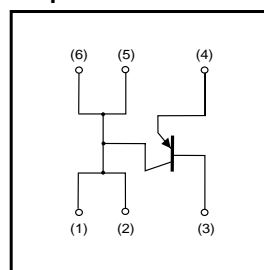
●**Electrical characteristics** (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−15	–	–	V	I_C=−10μA
Collector-emitter breakdown voltage	BV_{CEO}	−12	–	–	V	I_C=−1mA
Emitter-base breakdown voltage	BV_{EBO}	−6	–	–	V	I_E=−10μA
Collector cutoff current	I_{CBO}	–	–	−100	nA	V_{CB}=−15V
Emitter cutoff current	I_{EBO}	–	–	−100	nA	V_{EB}=−6V
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	−120	−180	mV	I_C=−1A, I_B=−50mA
DC current gain	h_{FE}	270	–	680	–	V_{CE}=−2V, I_C=−200mA *
Transition frequency	f_T	–	360	–	MHz	V_{CE}=−2V, I_E=200mA, f=100MHz *
Collector output capacitance	Cob	–	15	–	pF	V_{CB}=−10V, I_E=0A, f=1MHz

* Pulsed

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●**Packaging specifications**

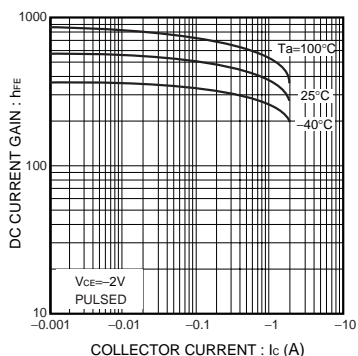| Type	Package	Taping
	Code	TR
	Basic ordering unit (pieces)	3000
QST6		○

●**Electrical characteristic curves**

Fig1. DC current gain
vs.collector current
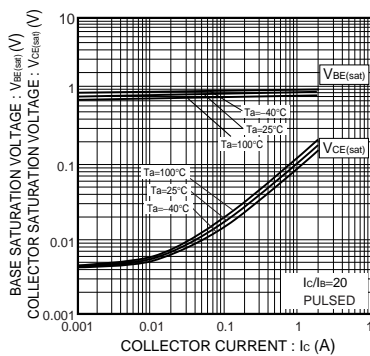

Fig.2 Collector-emitter saturation voltage
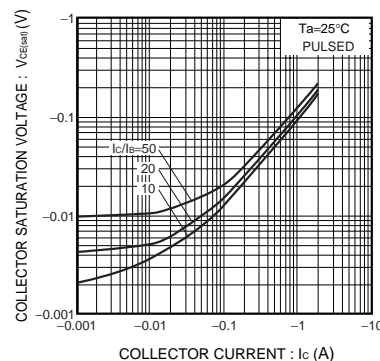base-emitter saturation voltage
vs.collector current

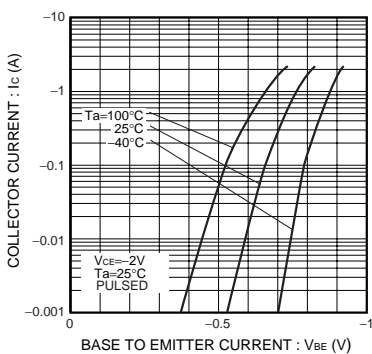Fig.3 Collector-emitter saturation voltage
vs.collector current

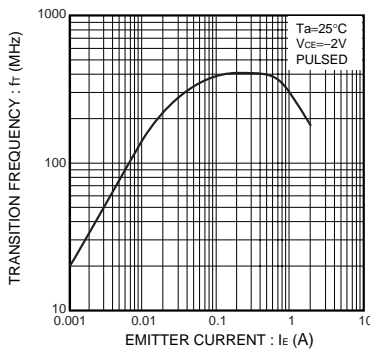
Fig.4 Grounded emitter propagation characteristics
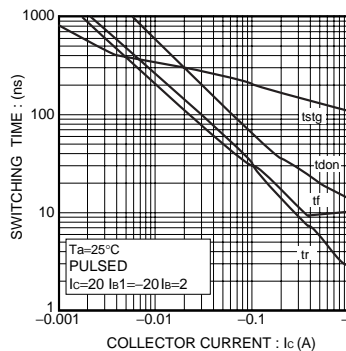

Fig.5 Gain bandwidth product
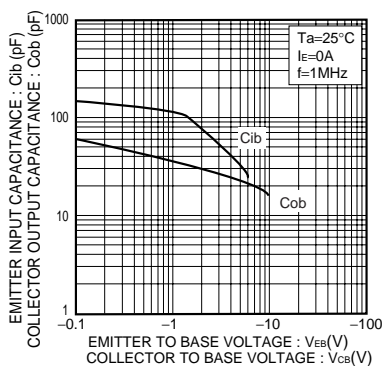vs.emitter current

Fig.6 Switching time

Fig7. Collector output capacitance vs.collector-base voltage
Emitter input capacitance vs.emitter-base voltage

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