Low frequency amplifier

QST5

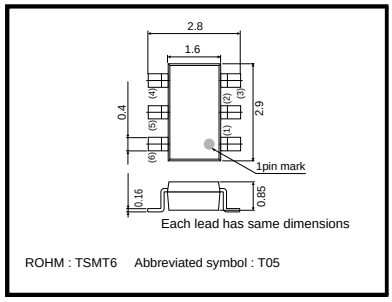
●Application

Low frequency amplifier
Driver

●Features

1) A collector current is large.
2) $V_{CE(sat)}$: max. −370mV
At Ic= −1.5A / I_B= −75mA

●External dimensions (Unit : mm)

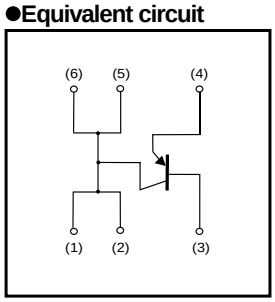


●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−30	V
Collector-emitter voltage	V_{CEO}	−30	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 terminal mounted on a recommended
*3 Mounted on a 25mm×25mm×t0.8mm ceramic substrate

●Equivalent circuit



●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−30	–	–	V	I_C= −10μA
Collector-emitter breakdown voltage	BV_{CEO}	−30	–	–	V	I_C= −1mA
Emitter-base breakdown voltage	BV_{EBO}	−6	–	–	V	I_E= −10μA
Collector cutoff curent	I_{CBO}	–	–	−100	nA	V_{CB}= −30V
Emitter cutoff current	I_{EBO}	–	–	−100	nA	V_{EB}= −6V
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	−180	−370	mV	I_C= −1.5A, I_B= −75mA
DC current gain	h_{FE}	270	–	680	–	V_{CE}= −2V, I_C= −200mA
Transition frequency	f_T	–	280	–	MHz	V_{CE}= −2V, I_E=200mA, f=100MHz
Collector output capacitance	Cob	–	20	–	pF	V_{CB}= −10V, I_E=0A, f=1MHz

●Packaging specifications

Type	package	Taping
	Code	TR
	Basic ordering unit(pieces)	3000
QST5		○

●Electrical characteristic curves

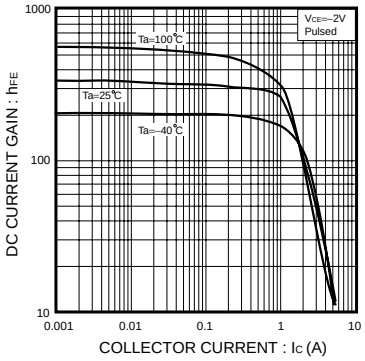


Fig.1 DV current gain vs. collector current

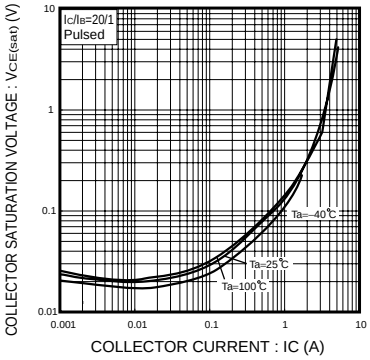


Fig.2 Collector-emitter saturation voltage vs. collector current

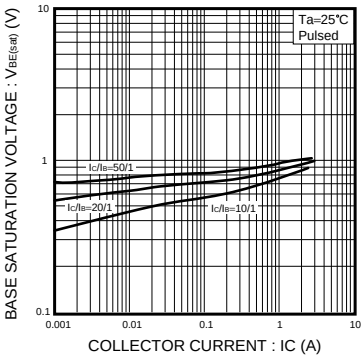


Fig.3 Base-emitter saturation voltage vs. collector current

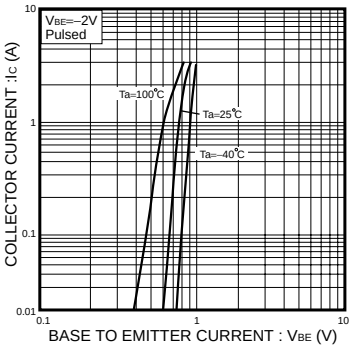


Fig.4 Grounded emitter propagation characteristics

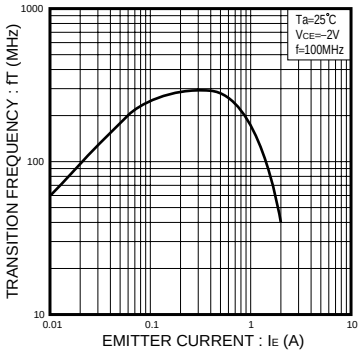


Fig.5 Gain bandwidth product vs. emitter curent

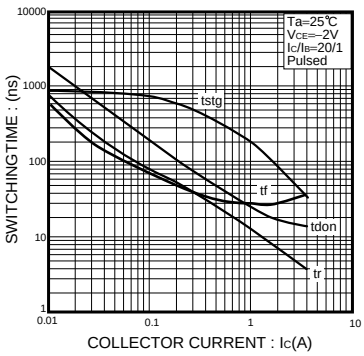


Fig.6 Switching time

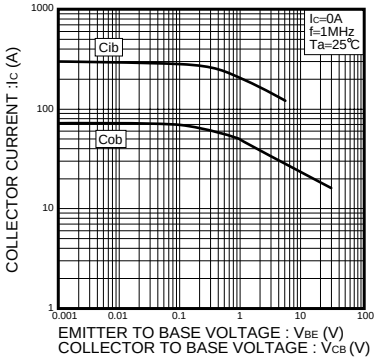


Fig.7 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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