# General purpose amplification (-30V, -1A) QST9

# Application

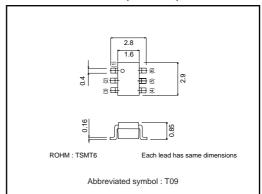
Low frequency amplifier Driver

#### ●Features

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

VcE(sat): max. -350mV At  $I_C = -500 \text{mA} / I_B = -25 \text{mA}$ 

# ●External dimensions (Unit: mm)

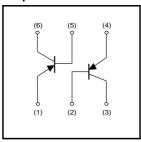


# ● Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	Vсво –30		V
Collector-emitter voltage	Vceo	-30	V
Emitter-base voltage	Vево	-6	V
Collector current	lc	-1	Α
Collector current	ICP -		A *1
	Pc	500	mW/TOTAL *2
Power dissipation		1.25	W/TOTAL *3
		0.9	W/ELEMENT *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×<sup>t</sup>0.8mm ceramic substrate

# Equivalent circuit



# ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Collector-base breakdown voltage	ВУсво	-30	_	_	V	Ic=-10μA
Collector-emitter breakdown voltage	BVceo	-30	_	_	V	Ic=-1mA
Emitter-base breakdown voltage	ВVево	-6	_	_	V	Iε=-10μA
Collector cutoff current	Ісво	_	-	-100	nA	VcB=-30V
Emitter cutoff current	ІЕВО	_	_	-100	nA	V <sub>EB</sub> =-6V
Collector-emitter saturation voltage	VCE(sat)	_	-150	-350	mV	Ic=-500mA, Iв=-25mA
DC current gain	hfe	270	_	680	_	Vce=-2V, Ic=-100mA *
Transition frequency	f⊤	_	320	_	MHz	Vce=-2V, Ie=100mA, f=100MHz *
Collector output capacitance	Cob	_	7	_	pF	Vсв=-10V, Ie=0A, f=1МНz

<sup>\*</sup> Pulsed

### Packaging specifications

	Package	Taping
Туре	Code	TR
	Basic ordering unit (pieces)	3000
QST9		0

#### •Electrical characteristic curves

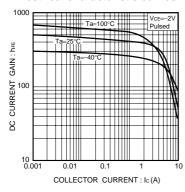


Fig.1 DC current gain vs. collector current

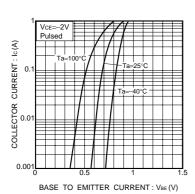


Fig.4 Grounded emitter propagation characteristics

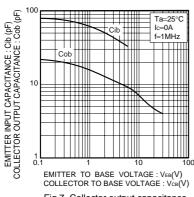


Fig.7 Collector output capacitance vs. collector-base voltage Emitter input capacitance vs. emitter-base voltage

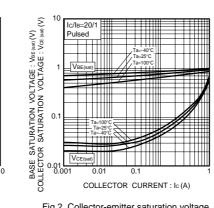


Fig.2 Collector-emitter saturation voltage base-emitter saturation voltage vs. collector current

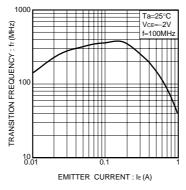


Fig.5 Gain bandwidth product vs. emitter current

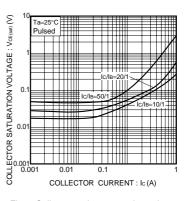


Fig.3 Collector-emitter saturation voltage vs. collector current

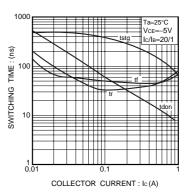


Fig.6 Switching time

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