

Transistors

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

QST9

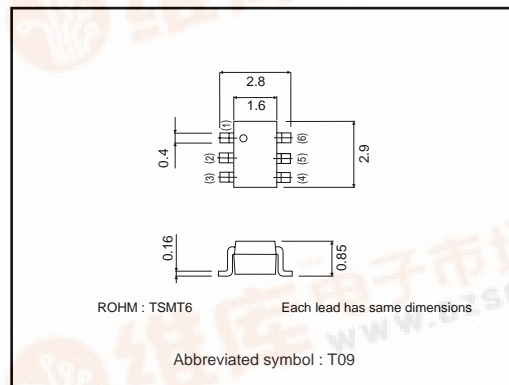
●Application

Low frequency amplifier
Driver

●Features

- 1) Collector current is large.
 - 2) Collector saturation voltage is low.
- $V_{CE(sat)}$: max. -350mV
At $I_c = -500mA / I_B = -25mA$

●External dimensions (Unit : mm)

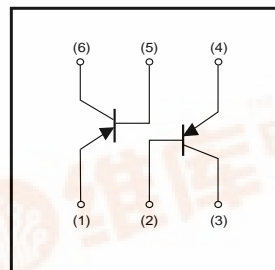


●Absolute maximum ratings (Ta=25°C)

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	-1	A
	I_{CP}	-2	A *1
Power dissipation	P_c	500	mW/TOTAL *2
		1.25	W/TOTAL *3
		0.9	W/ELEMENT *3
Junction temperature	T_j	150	°C
Range of storage temperature	T_{stg}	-55 to +150	°C

*1 Single pulse, $P_w=1ms$
*2 Each Terminal Mounted on a Recommended
*3 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_{CBO}	-30	-	-	V	$I_c=-10\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	-30	-	-	V	$I_c=-1mA$
Emitter-base breakdown voltage	BV_{EBO}	-6	-	-	V	$I_E=-10\mu A$
Collector cutoff current	I_{cBO}	-	-	-100	nA	$V_{CB}=-30V$
Emitter cutoff current	I_{EBO}	-	-	-100	nA	$V_{EB}=-6V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-150	-350	mV	$I_c=-500mA, I_B=-25mA$
DC current gain	h_{FE}	270	-	680	-	$V_{CE}=-2V, I_c=-100mA$ *
Transition frequency	f_T	-	320	-	MHz	$V_{CE}=-2V, I_E=100mA, f=100MHz$ *
Collector output capacitance	C_{ob}	-	7	-	pF	$V_{CB}=-10V, I_E=0A, f=1MHz$

* Pulsed

Transistors

●Packaging specifications

Type	Package	Taping
	Code	TR
	Basic ordering unit (pieces)	3000
QST9		○

●Electrical characteristic curves

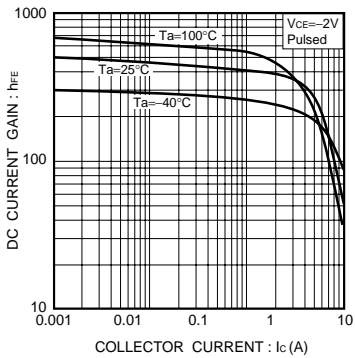


Fig.1 DC current gain vs. collector current

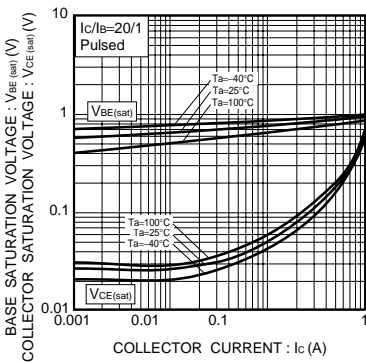


Fig.2 Collector-emitter saturation voltage base-emitter saturation voltage vs. collector current

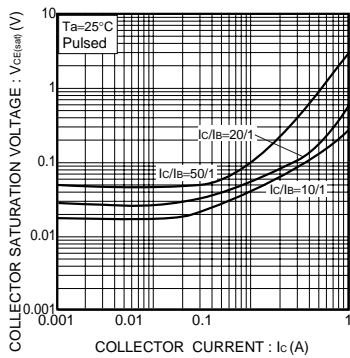


Fig.3 Collector-emitter saturation voltage vs. collector current

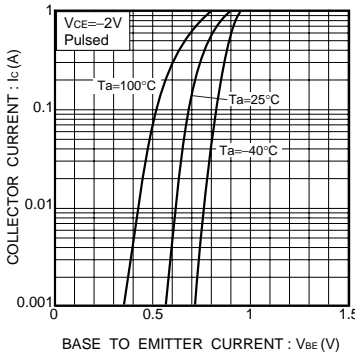


Fig.4 Grounded emitter propagation characteristics

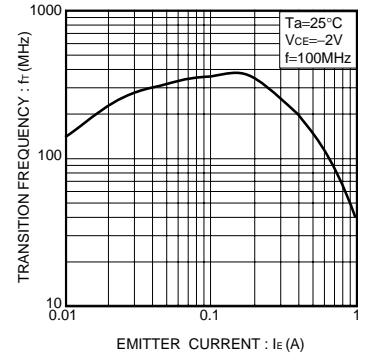


Fig.5 Gain bandwidth product vs. emitter current

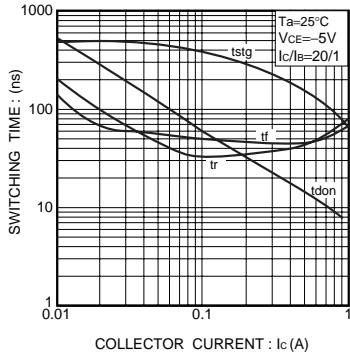


Fig.6 Switching time

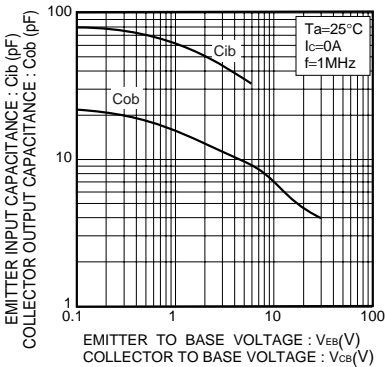


Fig.7 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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