

Low frequency amplifier

US6T6

●Application

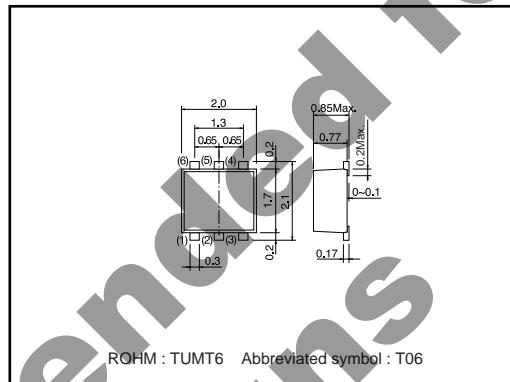
Low frequency amplifier

Driver

●Features

- 1) A collector current is large.
- 2) $V_{CE(sat)} \leq -180mV$
At $I_c = -1A$ / $I_b = -50mA$

●Dimensions (Unit : mm)



●Absolute maximum ratings ($T_a=25^\circ C$)

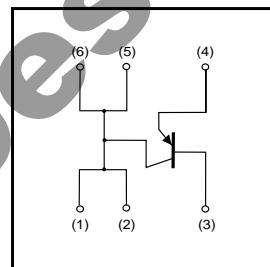
Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	-30	V
Collector-emitter voltage	V_{CEO}	-30	V
Emitter-base voltage	V_{EBO}	-6	V
Collector current	I_c	-2	A
	I_{CP}	-4	A *1
Power dissipation	P_c	400 1.0	mW *2 W *3
Junction temperature	T_j	150	°C
Range of storage temperature	T_{stg}	-55 to +150	°C

*1 Single pulse, $P_w=1ms$

*2 Each terminal mounted on a recommended

*3 Mounted on a 25mm×25mm×¹0.8mm Ceramic substrate.

●Equivalent circuit



●Electrical characteristics ($T_a=25^\circ C$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	-15	—	—	V	$I_c=-10\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	-12	—	—	V	$I_c=-1mA$
Emitter-base breakdown voltage	BV_{EBO}	-6	—	—	V	$I_e=-10\mu A$
Collector cutoff current	I_{CBO}	—	—	-100	nA	$V_{CB}=-15V$
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	C_{ob}	—	15	—	pF	$V_{CB}=-10V$, $I_e=0A$, $f=1MHz$

* Pulsed

Transistors

●Packaging specifications

Type	Package	Taping
	Code	TR
	Basic ordering unit (pieces)	3000
US6T6		○

●Electrical characteristic curves

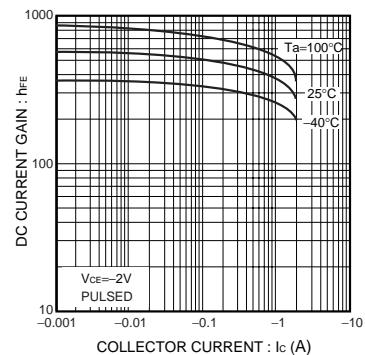


Fig.1. DC current gain vs.collector current

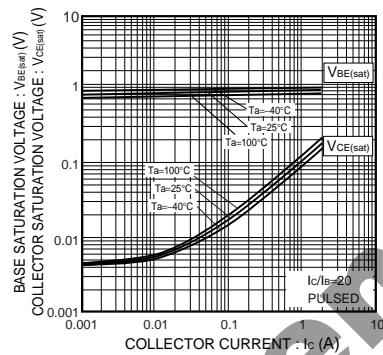


Fig.2. Collector-emitter saturation voltage base-emitter saturation voltage vs.collector current

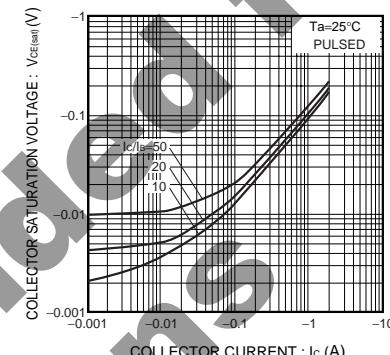


Fig.3. Collector-emitter saturation voltage vs.collector current

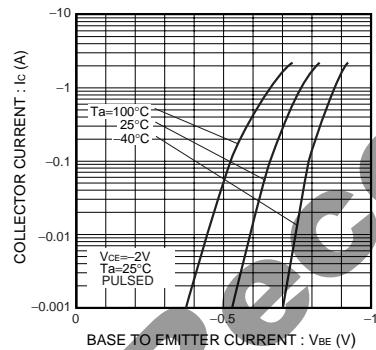


Fig.4. Grounded emitter propagation characteristics

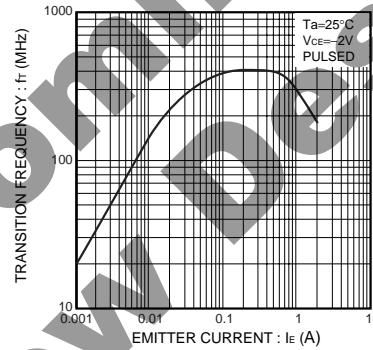


Fig.5. Gain bandwidth product vs.emitter current

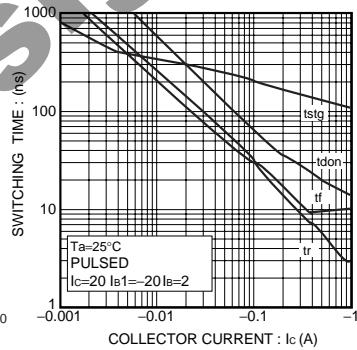
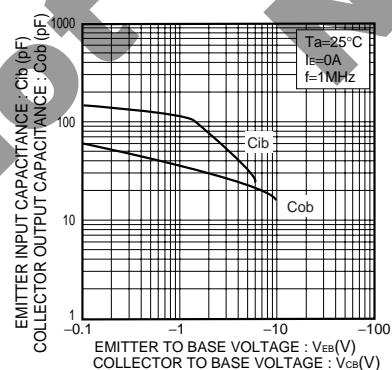


Fig.6. Switching time

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

Appendix

Notes

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