

# US6X8

### Low frequency amplifier

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

ROHM : TUMT6      Abbreviated symbol : X08

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CBO</sub>	30	V
Collector-emitter voltage	V <sub>CEO</sub>	30	V
Emitter-base voltage	V <sub>EBO</sub>	6	V
Collector current	I <sub>C</sub>	1	A
	I <sub>CP</sub>	2	A *1
Power dissipation	P <sub>C</sub>	0.4	W/TOTAL *2
		1.0	W/TOTAL *3
		0.7	W/ELEMENT *3
Junction temperature	T <sub>j</sub>	150	°C
Range of storage temperature	T <sub>stg</sub>	-55 to +150	°C

\*1 Single pulse,  $P_w=1\text{ms}$

\*2 Each Terminal Mounted on a Recommended

\*3 Mounted on a 25mm×25mm×0.8mm ceramic substrate

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	$V_{CE(sat)}$	—	120	350	mV	$I_C/I_B=500mA/25mA$
DC current gain	$h_{FE}$	270	—	680	—	$V_{CE}/I_C=2V/100mA$ *
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	
	Code	TR
	Basic ordering unit (pieces)	3000
US6X8		○

## ●Electrical characteristic curves

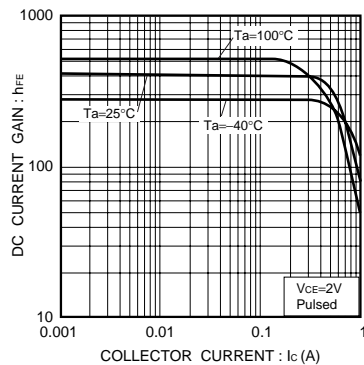


Fig.1 DC current gain vs. collector current

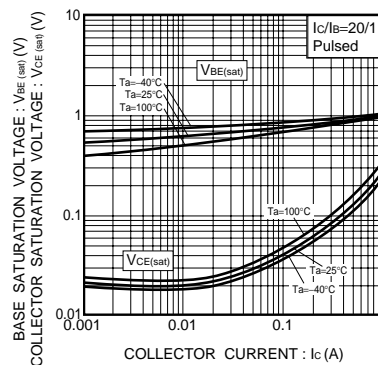


Fig.2 Collector-emitter saturation voltage base-emitter saturation voltage vs. collector current

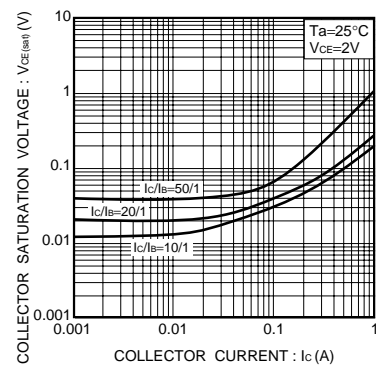


Fig.3 Collector-emitter saturation voltage vs. collector current

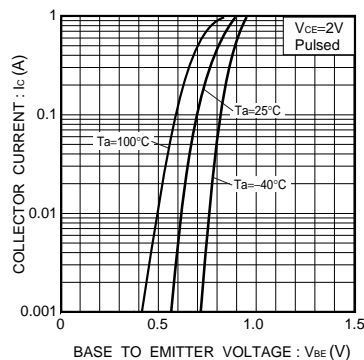


Fig.4 Grounded emitter propagation characteristics

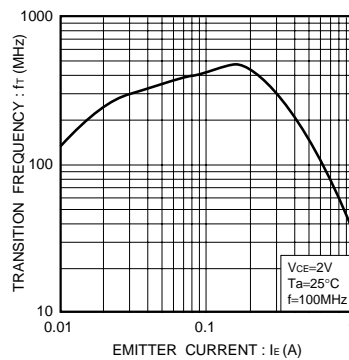


Fig.5 Gain bandwidth product vs. emitter current

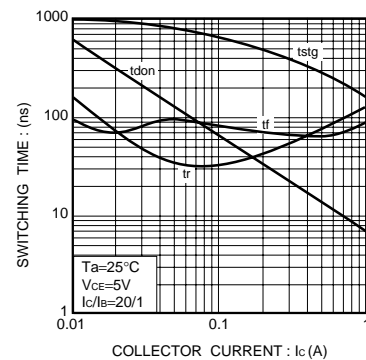
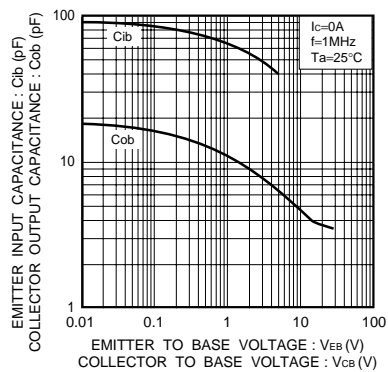


Fig.6 Switching time

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

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