

# General purpose amplification (30V, 5A)

## Q5X2

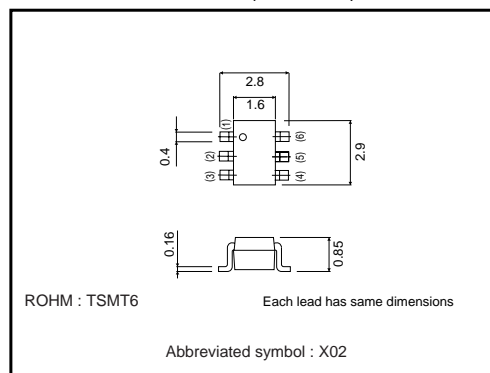
### ●Application

Low frequency amplifier

### ●Features

- 1) Collector current is large.
- 2) Collector saturation voltage is low.  
 $V_{CE(sat)} \leq 250\text{mV}$   
at  $I_C = 2\text{A} / I_B = 40\text{mA}$

### ●External dimensions (Unit : mm)



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

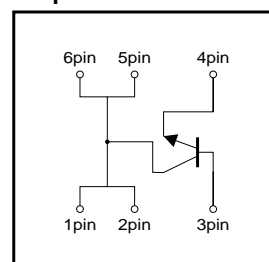
Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CB0}$	30	V
Collector-emitter voltage	$V_{CE0}$	30	V
Emitter-base voltage	$V_{EB0}$	6	V
Collector current	$I_C$	5	A
	$I_{CP}$	8	A *1
Power dissipation	$P_C$	500	mW *2
		1.25	W *3
Junction temperature	$T_j$	150	°C
Range of storage temperature	$T_{stg}$	-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×1.0.8mm Ceramic substrate

### ●Equivalent Circuit



### ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CB0}$	30	—	—	V	$I_C=10\mu\text{A}$
Collector-emitter breakdown voltage	$BV_{CE0}$	30	—	—	V	$I_C=1\text{mA}$
Emitter-base breakdown voltage	$BV_{EB0}$	6	—	—	V	$I_E=10\mu\text{A}$
Collector cutoff current	$I_{CBO}$	—	—	100	nA	$V_{CB}=30\text{V}$
Emitter cutoff current	$I_{EBO}$	—	—	100	nA	$V_{EB}=6\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	110	250	mV	$I_C / I_B=2\text{A}/40\text{mA}$
DC current gain	$h_{FE}$	270	—	680	—	$V_{CE}=2\text{V}, I_E=-500\text{mA}$ *
Transition frequency	$f_T$	—	200	—	MHz	$V_{CE}=2\text{V}, I_E=-500\text{mA}, f=100\text{MHz}$ *
Collector output capacitance	$C_{ob}$	—	60	—	pF	$V_{CB}=10\text{V}, I_E=0\text{A}, f=1\text{MHz}$

\*Pulsed

# Transistors

## ●Packaging specifications

Type	Package	Taping
	Code	TR
	Basic ordering unit (pieces)	3000
QXS2		○

## ●Electrical characteristic curves

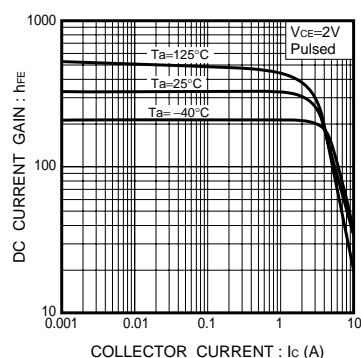


Fig.1 DC current gain vs. collector current

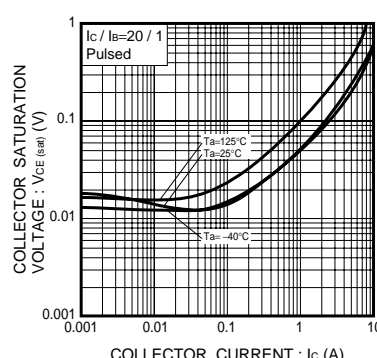


Fig.2 Collector-emitter saturation voltage vs. collector current

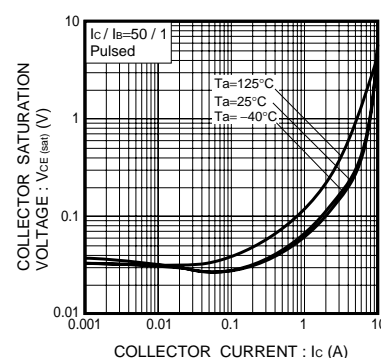


Fig.3 Collector-emitter saturation voltage vs. collector current

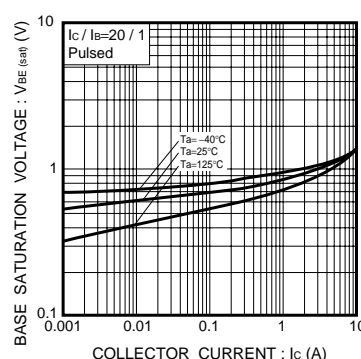


Fig.4 Base-emitter saturation voltage vs. collector current

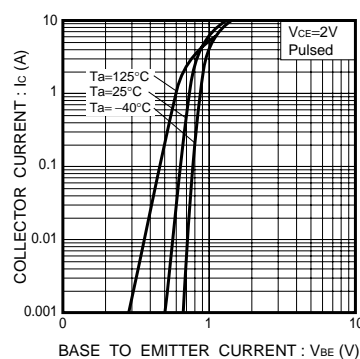


Fig.5 Grounded emitter propagation characteristics

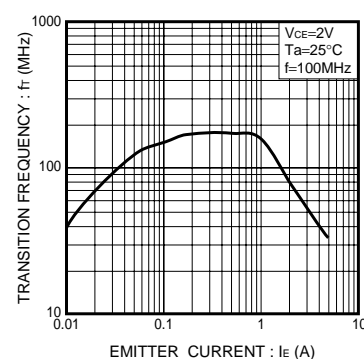


Fig.6 Gain bandwidth product vs. emitter current

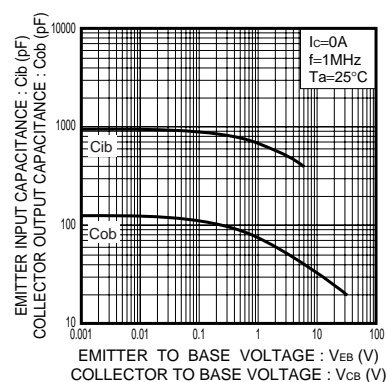


Fig.7 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

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