General purpose amplification (15V, 6A)

QSX1

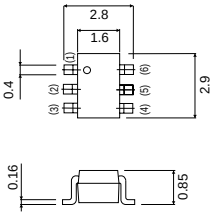
●**Application**

Low frequency amplifier

●**Features**

1) Collector current is large.
2) Collector saturation voltage is low.
   $V_{CE(sat)} \leqq 200mV$
   at $I_C = 3A / I_B = 60mA$

●**External dimensions** (Unit : mm)



ROHM : TSMT6

Each lead has same dimensions

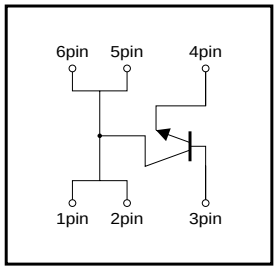
Abbreviated symbol : X01

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	15	V
Collector-emitter voltage	V_{CEO}	12	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	6	A
	I_{CP}	10	A *1
Power dissipation	P_C	500	mW *2
		1.25	W *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×t0.8mm Ceramic substrate

●**Equivalent Circuit**



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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	15	–	–	V	I_C=10μA
Collector-emitter breakdown voltage	BV_{CEO}	12	–	–	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	6	–	–	V	I_E=10μA
Collector cutoff current	I_{CBO}	–	–	100	nA	V_{CB}=15V
Emitter cutoff current	I_{EBO}	–	–	100	nA	V_{EB}=6V
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	–	80	200	mV	I_C/I_B=3A/60mA
DC current gain	h_{FE}	270	–	680	–	V_{CE}/I_C=2V/500mA *
Transition frequency	f_T	–	250	–	MHz	V_{CE}=2V, I_E= −500mA, f=100MHz*
Collector output capacitance	Cob	–	80	–	pF	V_{CB}=10V, I_E=0A, f=1MHz

* Pulsed

●Packaging specifications

	Package	Taping
Type	Code	TR
	Basic ordering unit (pieces)	3000
QSX1		○

●Electrical characteristic curves

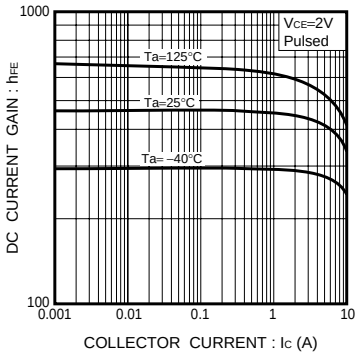


Fig.1 DC current gain vs. collector current

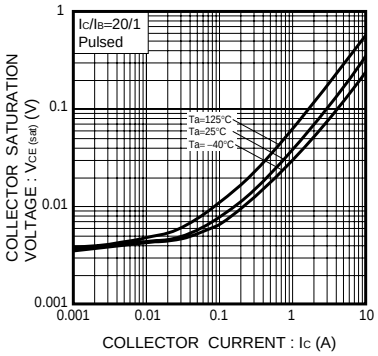


Fig.2 Collector-emitter saturation voltage vs. collector current

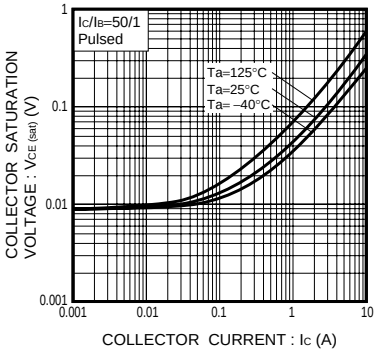


Fig.3 Collector-emitter saturation voltage vs. collector current

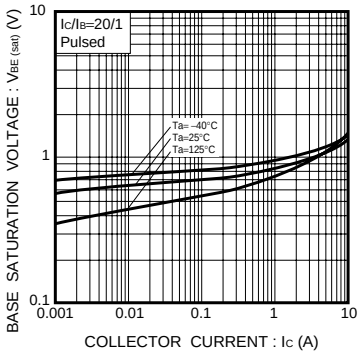


Fig.4 Base-emitter saturation voltage vs. collector current

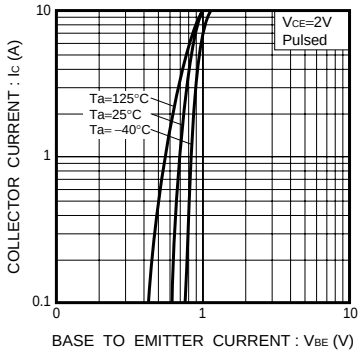


Fig.5 Grounded emitter propagation characteristics

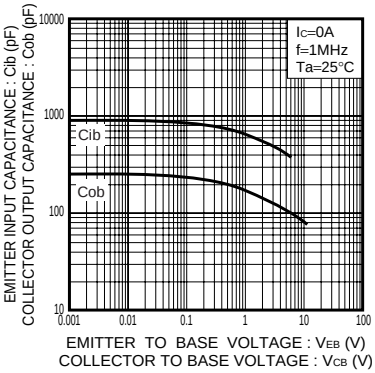


Fig.6 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

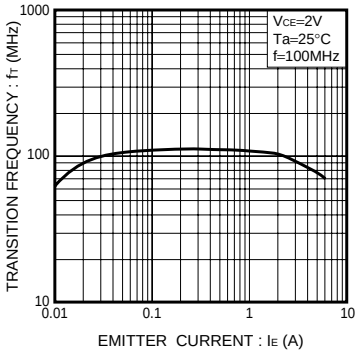


Fig.7 Gain bandwidth product vs. emitter current

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