# General purpose amplification (–12V, –1.5A)

# QST8

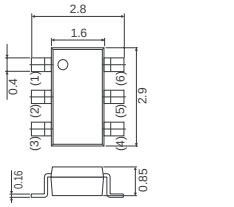
●**Application**

Low frequency amplifier
Driver

●**Features**

1) A collector current is large.
2) Collector saturation voltage is low.
   $V_{CE\ (sat)}$ : max. −200mV
   At $I_C$ = −500mA / $I_B$ = −25mA

●**External dimensions** (Unit : mm)




Each lead has same dimensions

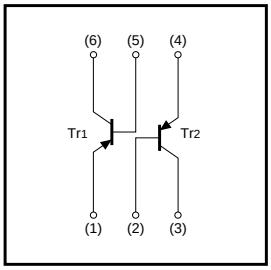
ROHM : TSMT6 Abbreviated symbol : T08

●**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 | $I_C$ | –1.5 | A |
| | $I_{CP}$ | –3 | A *1 |
| Power dissipation | $P_C$ | 500 | mW/TOTAL *2 |
| | | 1.25 | W/TOTAL *3 |
| | | 0.9 | W/ELEMENT *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 | $V_{CE(sat)}$ | – | –85 | –200 | mV | $I_C$= –500mA, $I_B$= –25mA |
| DC current gain | $h_{FE}$ | 270 | – | 680 | – | $V_{CE}$= –2V, $I_C$= –200mA * |
| Transition frequency | $f_T$ | – | 400 | – | MHz | $V_{CE}$= –2V, $I_E$=200mA, f=100MHz * |
| Corrector output capacitance | Cob | – | 12 | – | pF | $V_{CB}$= –10V, $I_E$=0A, f=1MHz |

*Pulsed

## ●Packaging specifications

| | | |
|---|---|---|
| Type | Package | Taping |
| | Code | TR |
| | Basic ordering unit (pieces) | 3000 |
| QST8 | | ○ |

## ●Electrical characteristic curves

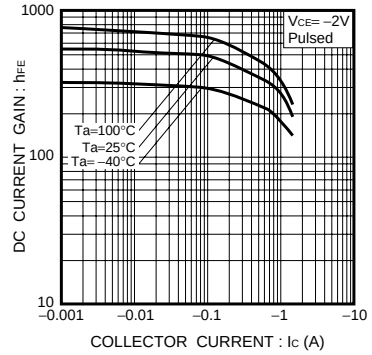



Fig.1 DC current gain vs. collector current

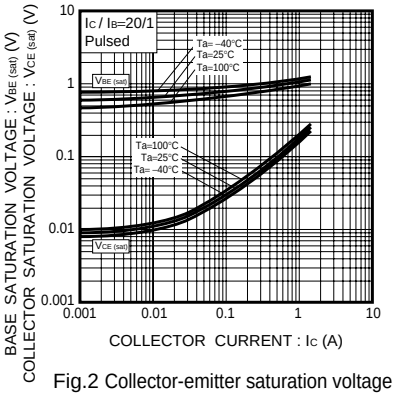



Fig.2 Collector-emitter saturation voltage base-emitter saturation voltage vs. collector current

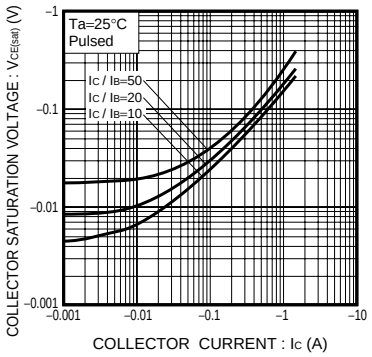



Fig.3 Collector-emitter saturation voltage vs. collector current

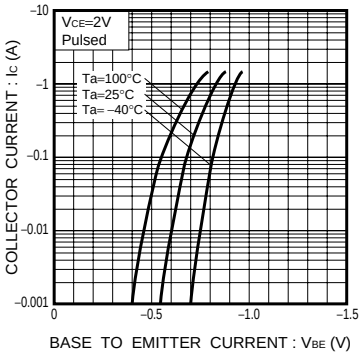



Fig.4 Grounded emitter propagation characteristics

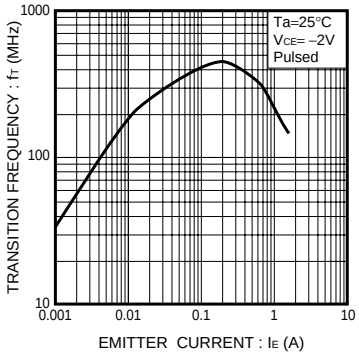



Fig.5 Gain bandwidth product vs. emitter current

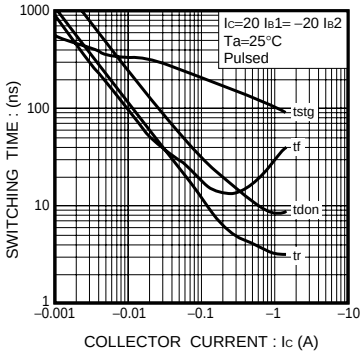



Fig.6 Switching time

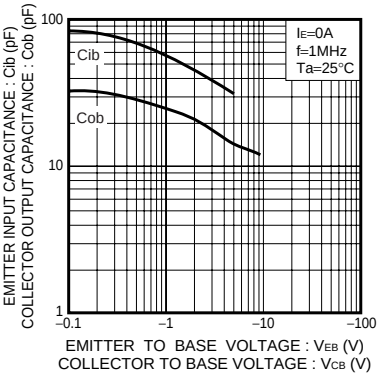



Fig.7 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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