

6367255 MOTOROLA SC (DIODES/OPTO)

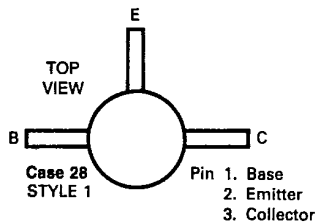
34C 38223 D

MICRO-T (continued)

T-31-17

MMT3798,99 — PNP

LOW CURRENT AMPLIFIER TRANSISTOR



• designed for low-level, low-noise amplifier applications.

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|--|------------------|-------------|-------------|
| Collector-Emitter Voltage | V_{CEO} | 60 | Vdc |
| Collector-Base Voltage | V_{CB} | 60 | Vdc |
| Emitter-Base Voltage | V_{EB} | 3.0 | Vdc |
| Collector Current — Continuous Peak | I_C | 50 100 | mAdc |
| Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 250 2.0 | mW mW/°C |
| Operating and Storage Junction Temperature Range | T_{J}, T_{stg} | -55 to +150 | °C |

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|---|-----------------|------|-------|
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 0.50 | °C/mW |

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Parameter | Test Conditions | Min | Typ | Max | Unit |
|-----------|-----------------|-----|-----|-----|------|
|-----------|-----------------|-----|-----|-----|------|

OFF CHARACTERISTICS

| | | | | | |
|------------|---|----|---|----|------|
| BV_{CEO} | $I_C = 10 \text{ mAdc}, I_B = 0$ | 60 | — | — | Vdc |
| BV_{CBO} | $I_C = 10 \text{ }\mu\text{Adc}, I_E = 0$ | 60 | — | — | Vdc |
| I_{CBO} | $V_{CB} = 50 \text{ Vdc}, I_E = 0$ | — | — | 50 | nAdc |
| I_{EBO} | $V_{BE} = 3.0 \text{ Vdc}, I_C = 0$ | — | — | 50 | nAdc |

ON CHARACTERISTICS

| | | | | | | |
|--|---|---------|-----|------|-----|---|
| h_{FE} | $I_C = 10 \text{ }\mu\text{Adc}, V_{CE} = 5.0 \text{ Vdc}$ | MMT3798 | 75 | — | — | — |
| | | MMT3799 | 150 | — | — | — |
| | $I_C = 100 \text{ }\mu\text{Adc}, V_{CE} = 5.0 \text{ Vdc}$ | MMT3798 | 150 | — | 450 | — |
| | | MMT3799 | 300 | — | 900 | — |
| $I_C = 1.0 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}$ | MMT3798 | 150 | — | — | — | |
| | MMT3799 | 300 | — | — | — | |
| $I_C = 10 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}$ | MMT3798 | 125 | — | — | — | |
| | MMT3799 | 250 | — | — | — | |
| $V_{CE(sat)}$ | $I_C = 1.0 \text{ mAdc}, I_B = 100 \text{ }\mu\text{Adc}$ | — | — | 0.25 | Vdc | |
| $V_{BE(sat)}$ | $I_C = 1.0 \text{ mAdc}, I_B = 100 \text{ }\mu\text{Adc}$ | — | — | 0.8 | Vdc | |

continued

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34C 38224 D

MICRO-T. (continued)

MMT3798,99 (continued)

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SMALL-SIGNAL CHARACTERISTICS

| | | | | | | |
|----------|--|---------|----|-----|-----|-----|
| f_T | $I_C = 500 \mu\text{A dc}, V_{CE} = 5.0 \text{ V dc},$ $f = 20 \text{ MHz}$ | MMT3798 | 40 | 120 | — | MHz |
| | | MMT3799 | 40 | 150 | — | |
| C_{ob} | $V_{CB} = 5.0 \text{ V dc}, I_E = 0, f = 100 \text{ kHz}$ | | — | 2.0 | 4.0 | pF |
| C_{ib} | $V_{BE} = 0.5 \text{ V dc}, I_C = 0, f = 100 \text{ kHz}$ | | — | — | 12 | pF |
| NF | $I_C = 100 \mu\text{A dc}, V_{CE} = 10 \text{ V dc},$ $R_S = 3.0 \text{ k}\Omega, f = 1.0 \text{ kHz}$ | MMT3798 | — | 1.5 | — | dB |
| | | MMT3799 | — | 0.8 | — | |
| | $I_C = 100 \mu\text{A dc}, V_{CE} = 10 \text{ V dc},$ $R_S = 3.0 \text{ k}\Omega, f = 10 \text{ kHz}$ | MMT3798 | — | 1.0 | — | |
| | | MMT3799 | — | 0.8 | — | |
| | $I_C = 100 \mu\text{A dc}, V_{CE} = 10 \text{ V dc},$ $R_S = 3.0 \text{ k}\Omega, \text{BW} = 10 \text{ Hz to } 15.7 \text{ kHz}$ | MMT3798 | — | 2.5 | 3.5 | |
| | | MMT3799 | — | 1.5 | 2.5 | |