

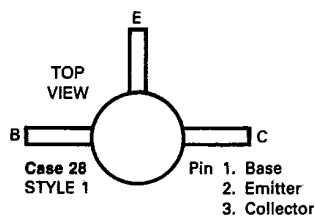
6367255 MOTOROLA SC (DIODES/OPTO)

34C 38206 D

T-31-17

MICRO-T (continued)

## MMT918 — NPN VHF/UHF TRANSISTOR



- designed for use in VHF and UHF amplifier, mixer and oscillator applications.

### MAXIMUM RATINGS

| Rating                                                                                | Symbol         | Value       | Unit                       |
|---------------------------------------------------------------------------------------|----------------|-------------|----------------------------|
| Collector-Emitter Voltage                                                             | $V_{CEO}$      | 15          | Vdc                        |
| Collector-Base Voltage                                                                | $V_{CB}$       | 30          | Vdc                        |
| Emitter-Base Voltage                                                                  | $V_{EB}$       | 3.0         | Vdc                        |
| Collector Current — Continuous                                                        | $I_C$          | 200         | mAdc                       |
| Total Power Dissipation @ $T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ | $P_D$          | 250<br>2.0  | mW<br>mW/ $^\circ\text{C}$ |
| Operating and Storage Junction<br>Temperature Range                                   | $T_J, T_{stg}$ | -55 to +150 | $^\circ\text{C}$           |

### THERMAL CHARACTERISTICS

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

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

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

#### OFF CHARACTERISTICS

|            |                                    |     |    |      |
|------------|------------------------------------|-----|----|------|
| $BV_{CEO}$ | $I_C = 3.0 \text{ mAdc}, I_B = 0$  | 15  | —  | Vdc  |
| $BV_{CBO}$ | $I_C = 1.0 \mu\text{Adc}, I_E = 0$ | 30  | —  | Vdc  |
| $BV_{EBO}$ | $I_E = 10 \mu\text{Adc}, I_C = 0$  | 3.0 | —  | Vdc  |
| $I_{CBO}$  | $V_{CB} = 15 \text{ Vdc}, I_E = 0$ | —   | 10 | nAdc |

#### ON CHARACTERISTICS

|               |                                                    |    |     |     |
|---------------|----------------------------------------------------|----|-----|-----|
| $h_{FE}$      | $I_C = 3.0 \text{ mAdc}, V_{CE} = 1.0 \text{ Vdc}$ | 20 | —   | —   |
| $V_{CE(sat)}$ | $I_C = 10 \text{ mAdc}, I_B = 1.0 \text{ mAdc}$    | —  | 0.4 | Vdc |
| $V_{BE(sat)}$ | $I_C = 10 \text{ mAdc}, I_B = 1.0 \text{ mAdc}$    | —  | 1.0 | Vdc |

#### DYNAMIC CHARACTERISTICS

|          |                                                                                              |     |     |     |
|----------|----------------------------------------------------------------------------------------------|-----|-----|-----|
| $f_T$    | $I_C = 4.0 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, f = 100 \text{ MHz}$                       | 600 | —   | MHz |
| $C_{ob}$ | $V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 140 \text{ kHz}$                                      | —   | 1.7 | pF  |
| $C_{ib}$ | $V_{EB} = 0.5 \text{ Vdc}, I_C = 0, f = 140 \text{ kHz}$                                     | —   | 2.0 | pF  |
| NF       | $I_C = 1.0 \text{ mAdc}, V_{CE} = 6.0 \text{ Vdc}, f = 60 \text{ MHz}$<br>$R_s = 400 \Omega$ | —   | 6.0 | dB  |

(1) Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .