

# DMMT3906-TP Datasheet

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|                              |  |
|------------------------------|--|
| DiGi Electronics Part Number | DMMT3906-TP-DG   |
| Manufacturer                 | <a href="#">Micro Commercial Co</a>  |
| Manufacturer Product Number  | DMMT3906-TP  |
| Description                  | TRANS 2PNP 40V 0.2A SOT363   |
| Detailed Description         | Bipolar (BJT) Transistor Array 2 PNP (Dual) Matched Pair 40V 200mA 250MHz 200mW Surface Mount SO T-363 |



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## Purchase and inquiry

Manufacturer Product Number:

DMMT3906-TP

Series:

-

Transistor Type:

2 PNP (Dual) Matched Pair

Voltage - Collector Emitter Breakdown (Max):

40V

Current - Collector Cutoff (Max):

-

Power - Max:

200mW

Operating Temperature:

-55°C ~ 150°C (TJ)

Package / Case:

6-TSSOP, SC-88, SOT-363

Base Product Number:

DMMT3906

Manufacturer:

Micro Commercial Co

Product Status:

Active

Current - Collector (Ic) (Max):

200mA

Vce Saturation (Max) @ Ib, Ic:

400mV @ 5mA, 50mA

DC Current Gain (hFE) (Min) @ Ic, Vce:

100 @ 10mA, 1V

Frequency - Transition:

250MHz

Mounting Type:

Surface Mount

Supplier Device Package:

SOT-363

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0075

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

### Features

- Epitaxial Planar Die Construction
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

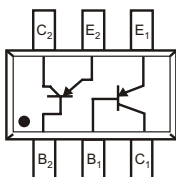
### Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -65°C to +150°C
- Storage Temperature Range: -65°C to +150°C
- Typical Thermal Resistance: 625°C/W Junction to Ambient

| Parameter                   | Symbol    | Rating | Unit |
|-----------------------------|-----------|--------|------|
| Collector-Base Voltage      | $V_{CBO}$ | -40    | V    |
| Collector-Emitter Voltage   | $V_{CEO}$ | -40    | V    |
| Emitter-Base Voltage        | $V_{EBO}$ | -5     | V    |
| Collector Current (2)       | $I_C$     | -200   | mA   |
| Collector Power Dissipation | $P_C$     | 200    | mW   |

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.  
 2. Valid provided that terminals are kept at ambient temperature.

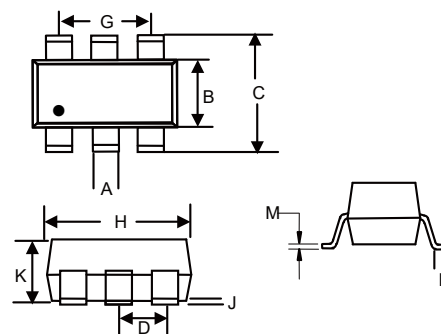
### Internal Structure



Marking: K3Q

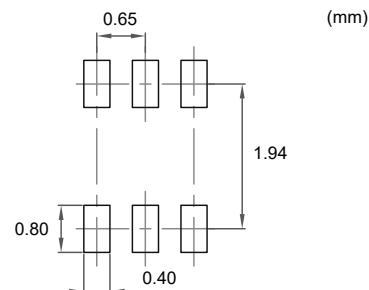
## PNP Plastic Encapsulate Transistors

### SOT-363



| DIM | DIMENSIONS |       |       |      | NOTE |
|-----|------------|-------|-------|------|------|
|     | INCHES     |       | MM    |      |      |
|     | MIN        | MAX   | MIN   | MAX  |      |
| A   | 0.006      | 0.014 | 0.15  | 0.35 |      |
| B   | 0.045      | 0.053 | 1.15  | 1.35 |      |
| C   | 0.079      | 0.096 | 2.00  | 2.45 |      |
| D   | 0.026      |       | 0.65  |      | TYP. |
| G   | 0.047      | 0.055 | 1.20  | 1.40 |      |
| H   | 0.071      | 0.087 | 1.80  | 2.20 |      |
| J   | -----      | 0.004 | ----- | 0.10 |      |
| K   | 0.031      | 0.043 | 0.80  | 1.10 |      |
| L   | 0.010      | 0.018 | 0.26  | 0.46 |      |
| M   | 0.003      | 0.006 | 0.08  | 0.15 |      |

### Suggested Solder Pad Layout



## Electrical Characteristics @ 25°C Unless Otherwise Specified

| Parameter                            | Symbol        | Min   | Typ | Max   | Units | Conditions                         |
|--------------------------------------|---------------|-------|-----|-------|-------|------------------------------------|
| Collector-Base Breakdown Voltage     | $V_{(BR)CBO}$ | -40   |     |       | V     | $I_C=-10\mu A, I_E=0$              |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | -40   |     |       | V     | $I_C=-1mA, I_B=0$                  |
| Emitter-Base Breakdown Voltage       | $V_{(BR)EBO}$ | -5    |     |       | V     | $I_E=-10\mu A, I_C=0$              |
| Emitter-Base Cutoff Current          | $I_{BL}$      |       |     | -50   | nA    | $V_{CE}=-30V, V_{BE(OFF)}=-3V$     |
| Collector Cutoff Current             | $I_{CEX}$     |       |     | -50   | nA    | $V_{CE}=-30V, V_{BE(OFF)}=-3V$     |
| DC Current Gain                      | $h_{FE(1)}$   | 60    |     |       |       | $V_{CE}=-1V, I_C=-0.1mA$           |
|                                      | $h_{FE(2)}$   | 80    |     |       |       | $V_{CE}=-1V, I_C=-1mA$             |
|                                      | $h_{FE(3)}$   | 100   |     | 300   |       | $V_{CE}=-1V, I_C=-10mA$            |
|                                      | $h_{FE(4)}$   | 60    |     |       |       | $V_{CE}=-1V, I_C=-50mA$            |
|                                      | $h_{FE(5)}$   | 30    |     |       |       | $V_{CE}=-1V, I_C=-100mA$           |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ |       |     | -0.25 | V     | $I_C=-10mA, I_B=-1mA$              |
|                                      |               |       |     | -0.4  | V     | $I_C=-50mA, I_B=-5mA$              |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ | -0.65 |     | -0.85 | V     | $I_C=-10mA, I_B=-1mA$              |
|                                      |               |       |     | -0.95 | V     | $I_C=-50mA, I_B=-5mA$              |
| Transition Frequency                 | $f_T$         | 250   |     |       | MHz   | $V_{CE}=-20V, I_C=-10mA, f=100MHz$ |
| Output Capacitance                   | $C_{cbo}$     |       |     | 4.5   | pF    | $V_{CB}=-5V, I_E=0, f=1MHz,$       |
| Delay Time                           | $t_d$         |       |     | 35    | ns    | $V_{CC}=-3V, I_C=-10mA$            |
| Rise Time                            | $t_r$         |       |     | 35    | ns    | $V_{BE}=-0.5V, I_{B1}=-1mA$        |
| Storage Time                         | $t_s$         |       |     | 225   | ns    | $V_{CC}=-3V, I_C=-10mA$            |
| Fall Time                            | $t_f$         |       |     | 75    | ns    | $I_{B1}=-I_{B2}=-1mA$              |

### Curve Characteristics

Fig. 1 - Static Characteristics

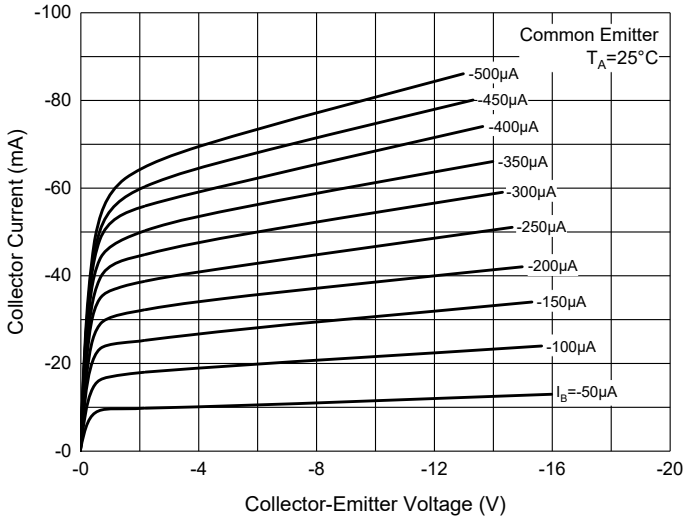


Fig. 2 - DC Current Gain Characteristics

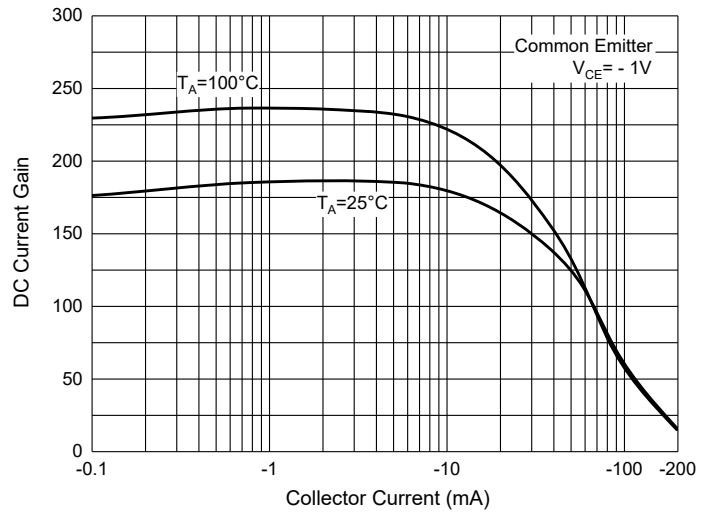


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

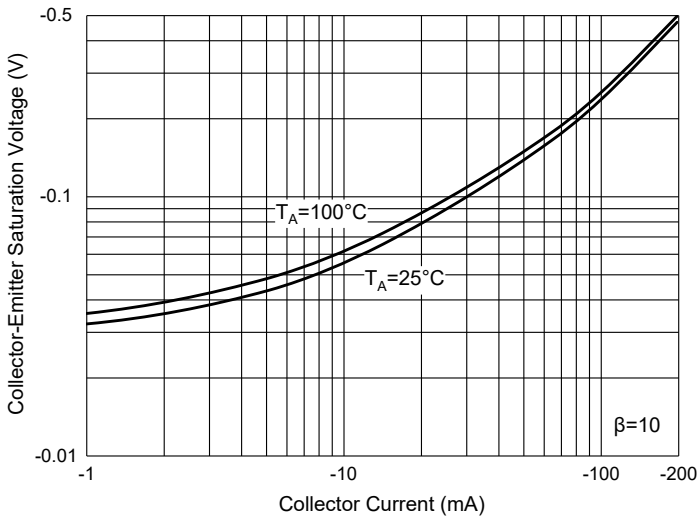


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

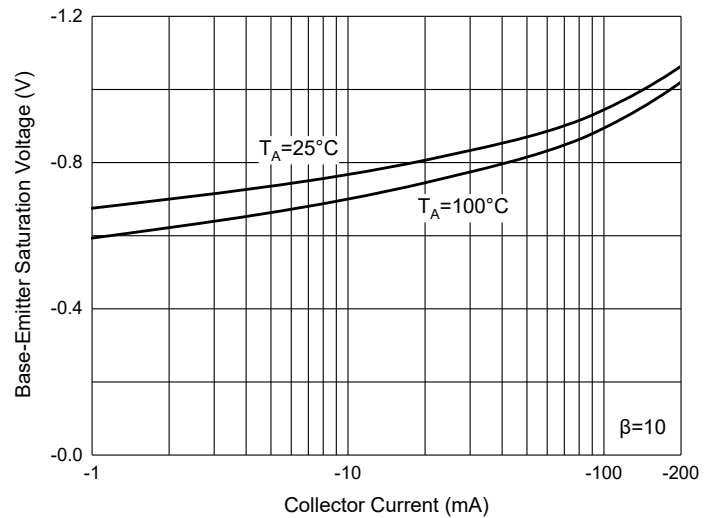


Fig. 5 - Base-Emitter Voltage Characteristics

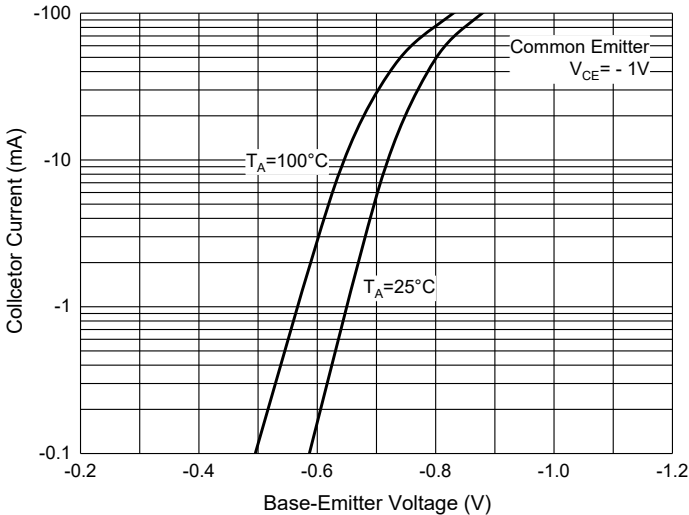
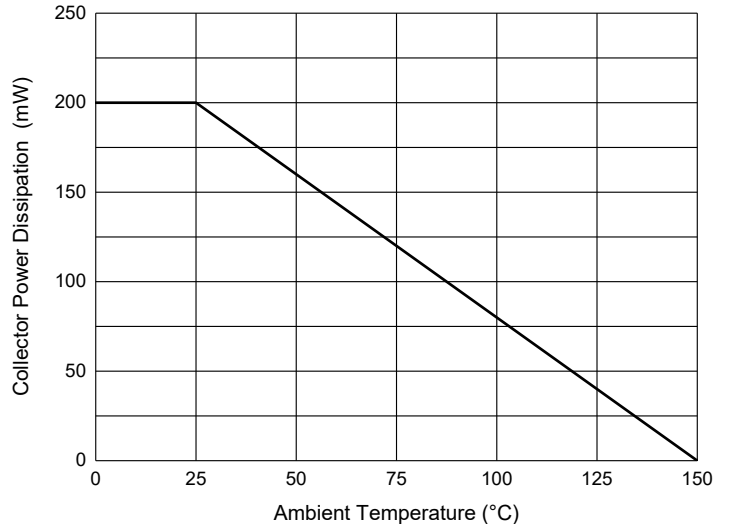


Fig. 6 - Collector Power Derating Curve



## Ordering Information

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

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