



Micro Commercial Components



Micro Commercial Components
 20736 Marilla Street Chatsworth
 CA 91311
 Phone: (818) 701-4933
 Fax: (818) 701-4939

MMDT3906V

PNP Plastic-Encapsulate Transistors

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epitaxial Die Construction
- Ideal for Low Power Amplification and Switching
- Ultra-small Surface Mount Package
- Marking:KAR
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

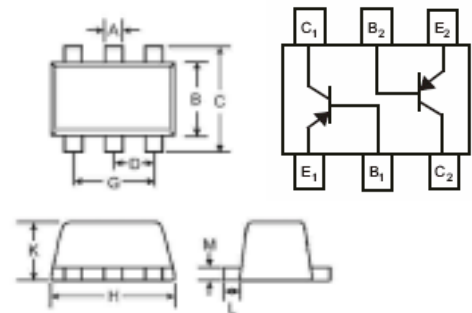
Maximum Ratings @ 250C Unless Otherwise Specified

| Symbol | Rating | Rating | Unit |
|------------------|--|-------------|------|
| V _{CEO} | Collector-Emitter Voltage | -40 | V |
| V _{CBO} | Collector-Base Voltage | -40 | V |
| V _{EBO} | Emitter-Base Voltage | -5 | V |
| I _C | Collector Current-Continuous | -0.2 | A |
| P _C | Collector Dissipation | 0.15 | W |
| R _{θJA} | Thermal Resistance Junction to Ambient | 833 | °C/W |
| T _J | Operating Junction Temperature | -55 to +150 | °C |
| T _{STG} | Storage Temperature | -55 to +150 | °C |

Electrical Characteristics @ 25°C Unless Otherwise Specified

| Symbol | Parameter | Min | Typ | Max | Units |
|----------------------|--|-----------------------------|-----|----------------|------------------|
| V _{(BR)CEO} | Collector-Emitter Breakdown Voltage (I _C =-1mA _{dc} , I _B =0) | -40 | --- | --- | Vdc |
| V _{(BR)CBO} | Collector-Base Breakdown Voltage (I _C =-10uA _{dc} , I _E =0) | -40 | --- | --- | Vdc |
| V _{(BR)EBO} | Collector-Emitter Breakdown Voltage (I _E =-10uA _{dc} , I _C =0) | -5 | --- | --- | Vdc |
| I _{CEX} | Collector Cutoff Current (V _{CE} =-30Vdc, V _{EB(OFF)} =-3Vdc) | --- | --- | 50 | nA _{dc} |
| I _{BL} | Base Cutoff Current (V _{CE} =-30Vdc, V _{EB(OFF)} =-3Vdc) | --- | --- | 50 | nA _{dc} |
| h _{FE} | DC Current Gain (I _C =-0.1mA _{dc} , V _{CE} =-1Vdc) (I _C =-1mA _{dc} , V _{CE} =-1Vdc) (I _C =-10mA _{dc} , V _{CE} =-1Vdc) (I _C =-50mA _{dc} , V _{CE} =-1Vdc) (I _C =-100mA _{dc} , V _{CE} =-1Vdc) | 60 80 100 60 30 | --- | --- | --- |
| V _{CE(sat)} | Collector-Emitter Saturation Voltage (I _C =-10mA _{dc} , I _B =-1mA _{dc}) (I _C =-50mA _{dc} , I _B =-5mA _{dc}) | --- | --- | -0.25 -0.4 | Vdc |
| V _{BE(sat)} | Base-Emitter Saturation Voltage (I _C =-10mA _{dc} , I _B =-1mA _{dc}) (I _C =-50mA _{dc} , I _B =-5mA _{dc}) | -0.65 --- | --- | -0.85 -0.95 | Vdc |

SOT-563



| DIM | INCHES | | MM | | NOTE |
|-----|--------|------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | .006 | .011 | 0.15 | 0.30 | |
| B | .043 | .049 | 1.10 | 1.25 | |
| C | .061 | .067 | 1.55 | 1.70 | |
| D | .020 | | 0.50 | | |
| G | .035 | .043 | 0.90 | 1.10 | |
| H | .059 | .067 | 1.50 | 1.70 | |
| K | .022 | .023 | 0.56 | 0.60 | |
| L | .004 | .011 | 0.10 | 0.30 | |
| M | .004 | .007 | 0.10 | 0.18 | |

Electrical Characteristics @ 25°C Unless Otherwise Specified

| Symbol | Parameter | Min | Typ | Max | Units |
|----------|--|-----|-----|-----|-------|
| f_T | Transition Frequency ($V_{CE}=-20V_{dc}$, $I_C=-10mA_{dc}$, $f=100MHz$) | 250 | --- | --- | MHz |
| C_{ob} | Output Capacitance ($V_{CB}=-5V_{dc}$, $f=1.0MHz$, $I_E=0$) | --- | --- | 4.5 | pF |
| NF | Noise Figure ($V_{CE}=-5V$, $I_C=-0.1mA$, $f=1KHz$, $R_S=1k\Omega$) | --- | --- | 4 | dB |
| t_d | Delay Time | --- | --- | 35 | ns |
| t_r | Rise Time | | | | |
| t_s | Storage Time | --- | --- | 225 | ns |
| t_f | Fall Time | | | | |

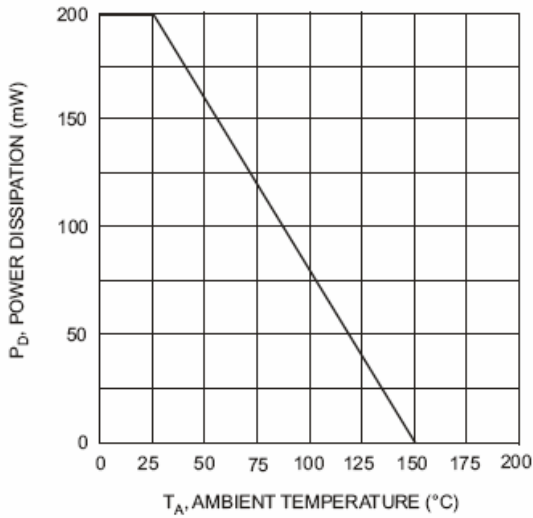


Fig. 1, Max Power Dissipation vs Ambient Temperature

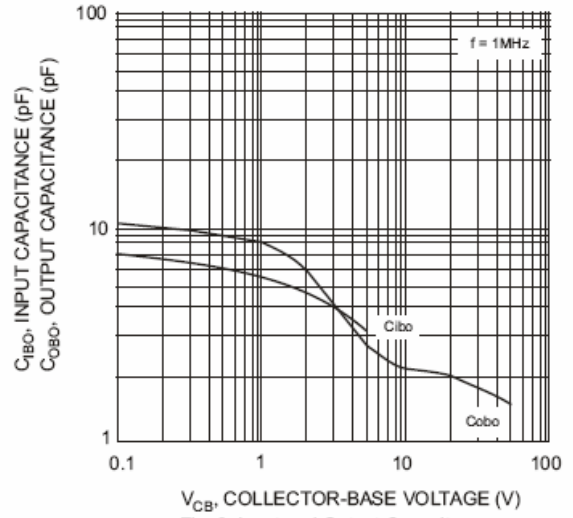


Fig. 2, Input and Output Capacitance vs. Collector-Base Voltage

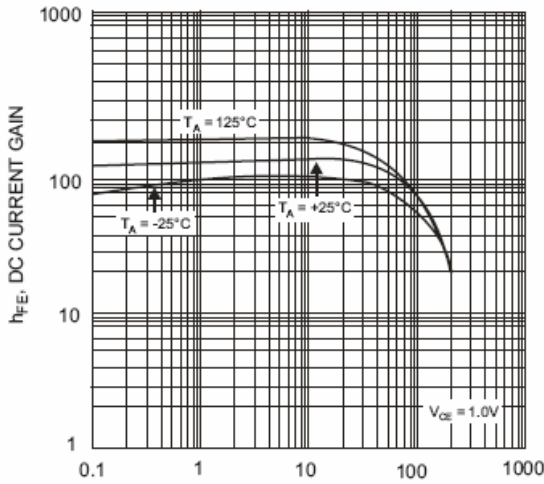


Fig. 3, Typical DC Current Gain vs Collector Current

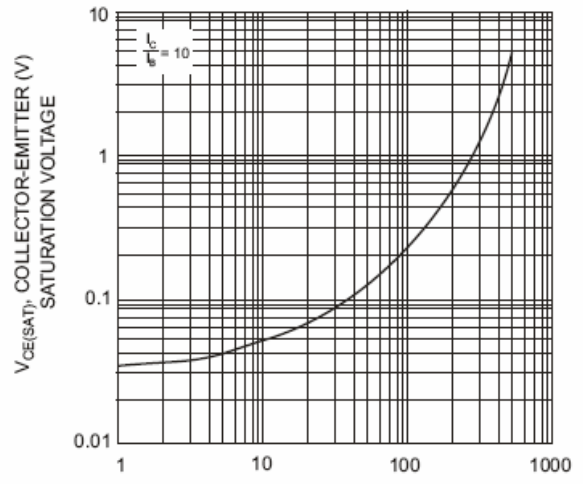


Fig. 4, Typical Collector-Emitter Saturation Voltage vs. Collector Current

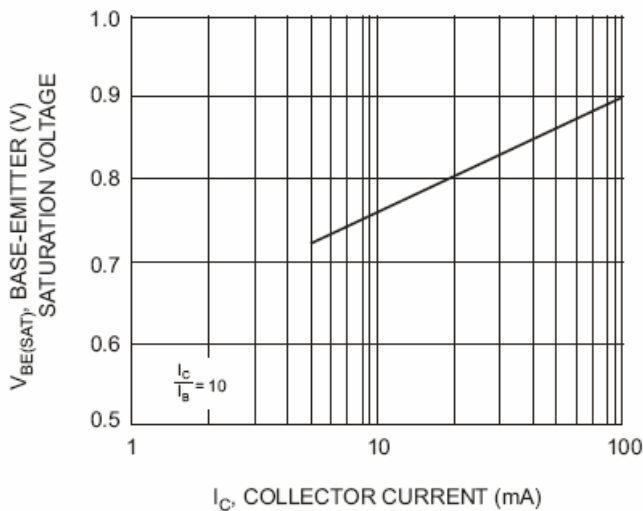


Fig. 5, Typical Base-Emitter Saturation Voltage vs. Collector Current



Micro Commercial Components

Ordering Information :

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

*****IMPORTANT NOTICE*****

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. **Micro Commercial Components Corp.** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp.** and all the companies whose products are represented on our website, harmless against all damages.

*****LIFE SUPPORT*****

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

*****CUSTOMER AWARENESS*****

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.