



Micro Commercial Components

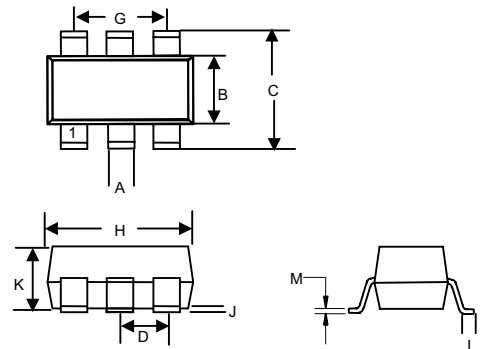


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UMD22N

Digital Transistors

SOT-363



| DIM | INCHES | | MM | | NOTE |
|-----|--------|------|-------------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | .006 | .014 | 0.15 | 0.35 | |
| B | .045 | .053 | 1.15 | 1.35 | |
| C | .085 | .096 | 2.15 | 2.45 | |
| D | .026 | | 0.65Nominal | | |
| G | .047 | .055 | 1.20 | 1.40 | |
| H | .071 | .087 | 1.80 | 2.20 | |
| J | --- | .004 | --- | 0.10 | |
| K | .035 | .043 | 0.90 | 1.10 | |
| L | .010 | .018 | 0.26 | 0.46 | |
| M | .003 | .006 | 0.08 | 0.15 | |

Features

- Both the DTA143Z chip and DTC143Z chip in a package
- Mounting possible with SOT-363 automatic mounting machines.
- Transistor elements are independent, eliminating interference.
- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

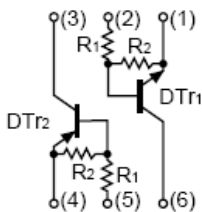
T_{R1} Absolute maximum ratings @ 25°C

| Symbol | Parameter | Value | Unit |
|---------------------|----------------------|---------|------|
| V _{CC} | Supply voltage | 50 | V |
| V _{IN} | Input voltage | -5~30 | V |
| I _O | Output current | 100 | mA |
| I _{C(MAX)} | Collector Current | 100 | mA |
| P _d | Power dissipation | 150 | mW |
| T _j | Junction temperature | 150 | °C |
| T _{stg} | Storage temperature | -55~150 | °C |

T_{R1} Electrical Characteristics @ 25°C

| Symbol | Parameter | Min | Typ | Max | Unit |
|--------------------------------|---|------|-----|------|------|
| V _{I(off)} | Input voltage (V _{CC} =5V, I _O =100μA) | 0.5 | --- | --- | V |
| V _{I(on)} | Input voltage (V _O =0.3V, I _O =5mA) | --- | --- | 1.3 | V |
| V _{O(on)} | Output voltage (I _O /I _I =5mA/0.25mA) | --- | 0.1 | 0.3 | V |
| I _I | Input current (V _I =5V) | --- | --- | 1.8 | mA |
| I _{O(off)} | Output current (V _{CC} =50V, V _I =0) | --- | --- | 0.5 | μA |
| G _I | DC current gain (V _O =5V, I _O =10mA) | 80 | --- | --- | |
| R ₁ | Input resistance | 3.29 | 4.7 | 6.11 | KΩ |
| R ₂ /R ₁ | Resistance ratio | 8 | 10 | 12 | |
| f _T | Transition frequency (V _{CE} =10V, I _E =-5mA, f=100MHz) | --- | 250 | --- | MHz |

Equivalent circuit



Marking :D22

UMD22N

T_{R2} Absolute maximum ratings (Ta=25°C)

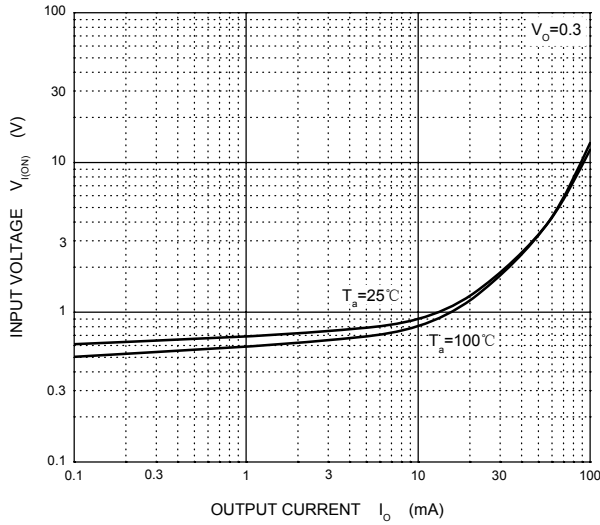
| Parameter | Symbol | Limits | Unit |
|----------------------|---------------------|---------|------|
| Supply voltage | V _{CC} | -50 | V |
| Input voltage | V _{IN} | -30~5 | V |
| Output current | I _O | -100 | mA |
| | I _{C(MAX)} | -100 | |
| Power dissipation | Pd | 150 | mW |
| Junction temperature | T _j | 150 | °C |
| Storage temperature | T _{stg} | -55~150 | °C |

T_{R2} Electrical characteristics (Ta=25°C)

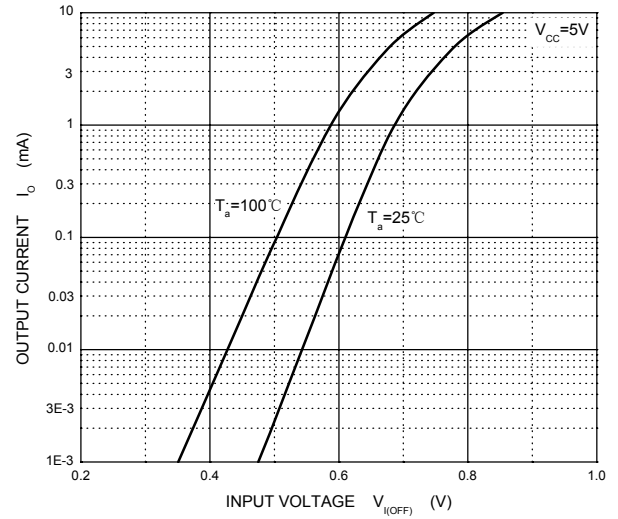
| Parameter | Symbol | Min. | Typ | Max. | Unit | Conditions |
|----------------------|--------------------------------|------|------|------|------|--|
| Input voltage | V _{I(off)} | -0.5 | | | V | V _{CC} =-5V, I _O =-100μA |
| | V _{I(on)} | | | -1.3 | | V _O =-0.3V, I _O =-5mA |
| Output voltage | V _{O(on)} | | -0.1 | -0.3 | V | I _O /I _I =-5mA/-0.25mA |
| Input current | I _I | | | -1.8 | mA | V _I =-5V |
| Output current | I _{O(off)} | | | -0.5 | μA | V _{CC} =-50V, V _I =0 |
| DC current gain | G _I | 80 | | | | V _O =-5V, I _O =-10mA |
| Input resistance | R ₁ | 3.29 | 4.7 | 6.11 | KΩ | - |
| Resistance ratio | R ₂ /R ₁ | 8 | 10 | 12 | | - |
| Transition frequency | f _T | | 250 | | MHz | V _{CE} =-10V, I _E =5mA, f=100MHz |

Typical Characteristics

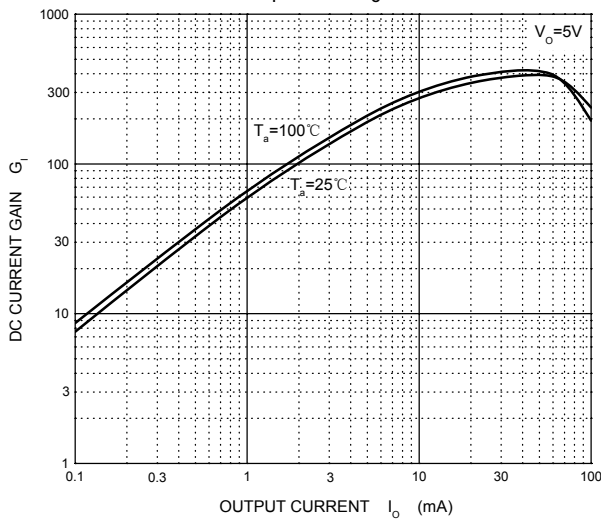
ON Characteristics



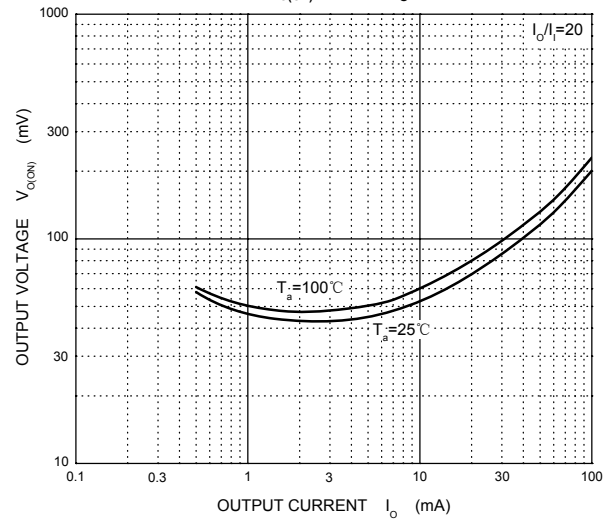
OFF Characteristics



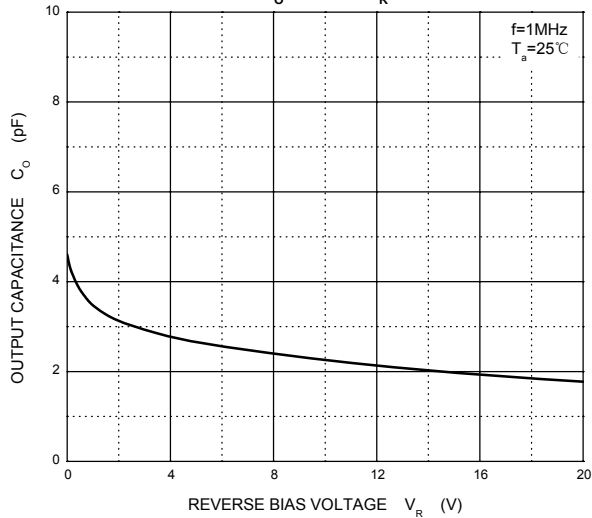
$G_I - I_O$



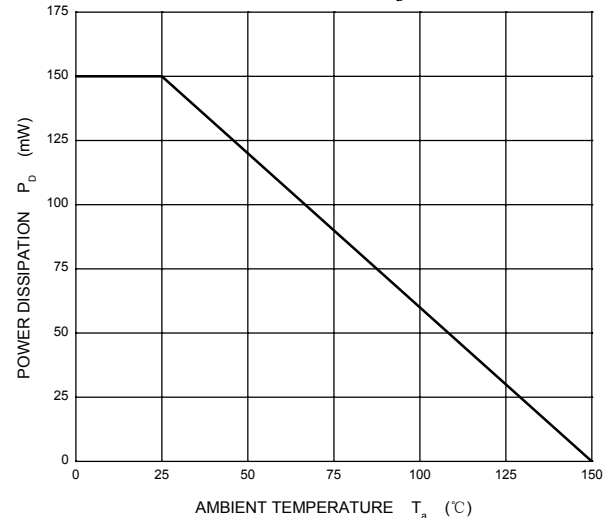
$V_{O(ON)} - I_O$



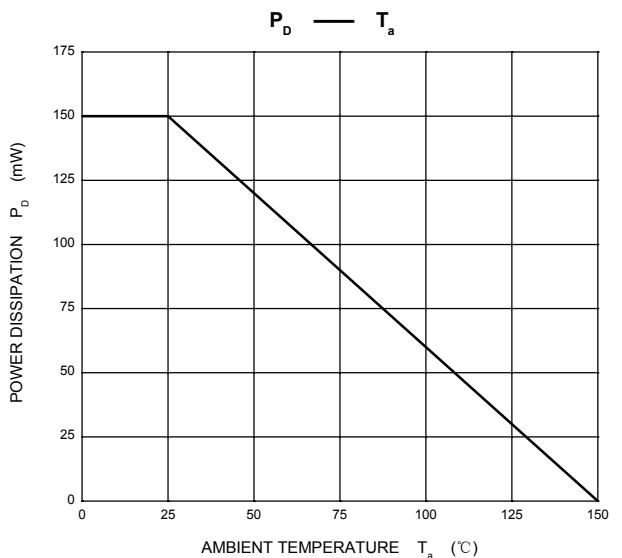
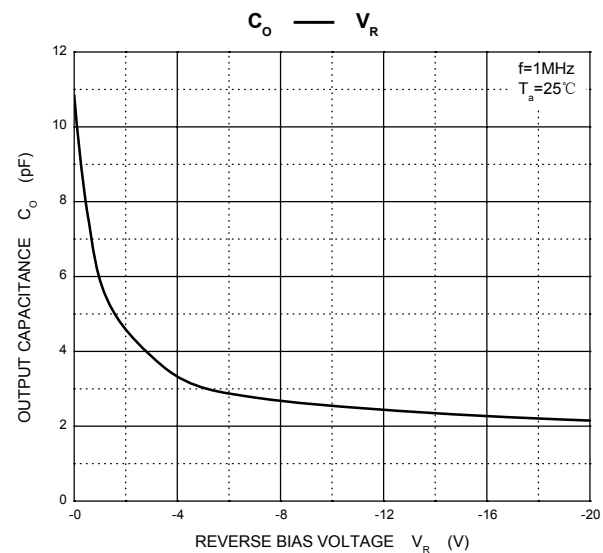
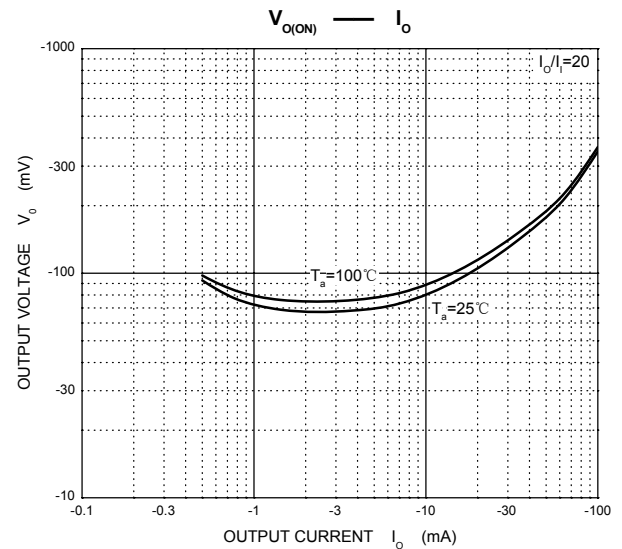
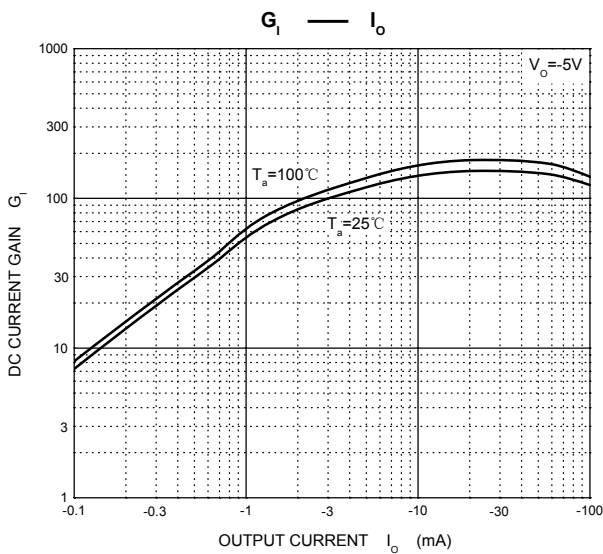
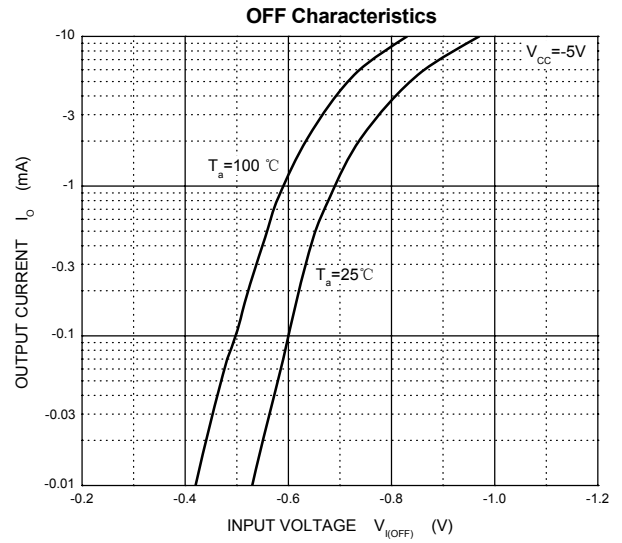
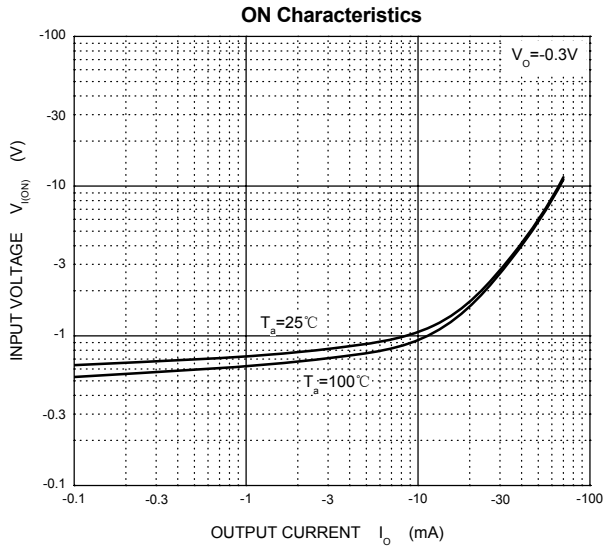
$C_O - V_R$



$P_D - T_a$



Typical Characteristics





Micro Commercial Components

Ordering Information :

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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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