

RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

### FEATURES

- DTA114E(PNP) and DTC114E(NPN) transistors
- are built-in a package
- Transistor elements are independent, eliminating Interference
- Mounting cost and area be cut in half

### MARKING

D3

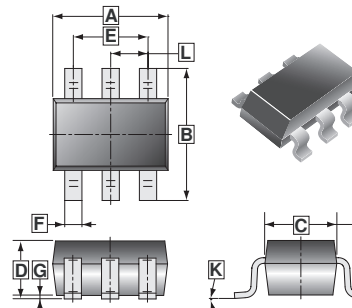
### PACKAGE INFORMATION

| Package | MPQ | Leader Size |
|---------|-----|-------------|
| SOT-363 | 3K  | 7 inch      |

### ORDER INFORMATION

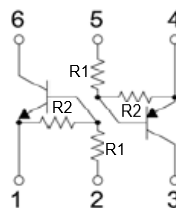
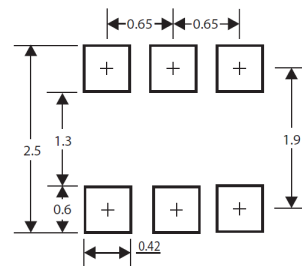
| Part Number | Type                            |
|-------------|---------------------------------|
| UMD3N-C     | Lead (Pb)-free and Halogen-free |

### SOT-363



| REF. | Millimeter |      | REF. | Millimeter |      |
|------|------------|------|------|------------|------|
|      | Min.       | Max. |      | Min.       | Max. |
| A    | 1.80       | 2.20 | G    | 0.10 REF.  |      |
| B    | 1.80       | 2.45 | H    | 0.525 REF. |      |
| C    | 1.15       | 1.35 | J    | 0.05       | 0.25 |
| D    | 0.70       | 1.10 | K    | 8°         |      |
| E    | 1.30 REF.  |      | L    | 0.65 TYP.  |      |
| F    | 0.10       | 0.35 |      |            |      |

### Mounting Pad Layout



### ABSOLUTE MAXIMUM RATINGS (NPN) (T<sub>A</sub>=25°C unless otherwise specified)

| Parameter                            | Symbol                            | Value   | Unit |
|--------------------------------------|-----------------------------------|---------|------|
| Supply Voltage                       | V <sub>CC</sub>                   | 50      | V    |
| Input Voltage                        | V <sub>IN</sub>                   | -10~40  |      |
| Output Current                       | I <sub>O</sub>                    | 50      | mA   |
|                                      | I <sub>C</sub>                    | 100     |      |
| Power Dissipation                    | P <sub>D</sub>                    | 150     | mW   |
| Junction & Storage Temperature Range | T <sub>J</sub> , T <sub>STG</sub> | -55~150 | °C   |

### ELECTRICAL CHARACTERISTICS (NPN) (T<sub>A</sub>=25°C unless otherwise specified)

| Parameter            | Symbol                         | Min. | Typ. | Max. | Unit | Test Condition   |
|----------------------|--------------------------------|------|------|------|------|--|
| Input Voltage        | V <sub>I(off)</sub>            | 0.5  | -    | -    | V    | V <sub>CC</sub> =5V, I <sub>O</sub> =100μA<br>V <sub>O</sub> =0.3V, I <sub>O</sub> =10mA |
|                      | V <sub>I(on)</sub>             | -    | -    | 3    |      |  |
| Output Voltage       | V <sub>O(on)</sub>             | -    | -    | 0.3  |      | I <sub>O</sub> /I <sub>I</sub> =10mA/0.5mA   |
| Input Current        | I <sub>I</sub>                 | -    | -    | 0.88 | mA   | V <sub>I</sub> =5V   |
| Output Current       | I <sub>O(off)</sub>            | -    | -    | 0.5  | μA   | V <sub>CC</sub> =50V, V <sub>I</sub> =0  |
| DC Current Gain      | G <sub>I</sub>                 | 30   | -    | -    | V    | V <sub>O</sub> =5V, I <sub>O</sub> =5mA  |
| Input Resistance     | R <sub>1</sub>                 | 7    | 10   | 13   | kΩ   |  |
| Resistance Ratio     | R <sub>2</sub> /R <sub>1</sub> | 0.8  | 1    | 1.2  |      |  |
| Transition Frequency | f <sub>T</sub>                 | -    | 250  | -    | MHz  | V <sub>CE</sub> =10V, I <sub>E</sub> =5mA, f=100MHz                                      |

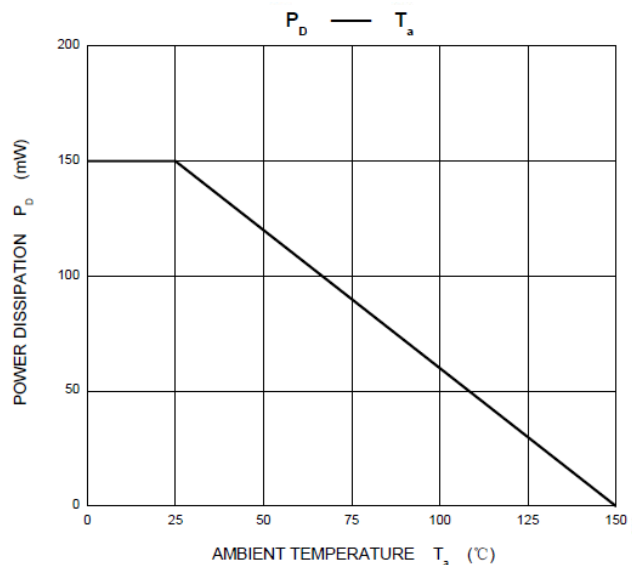
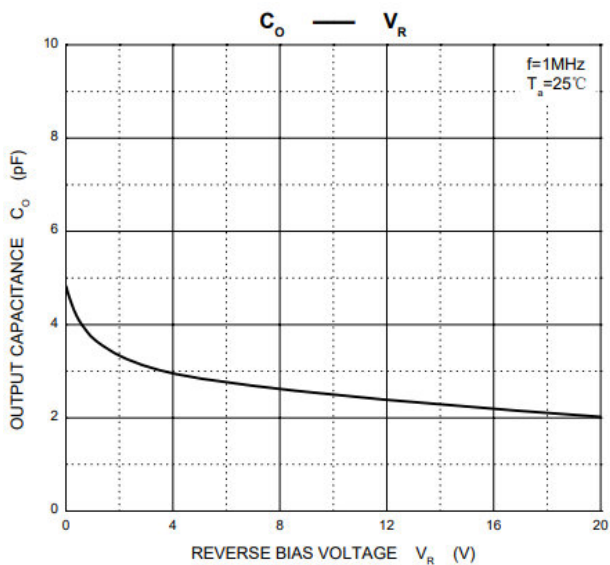
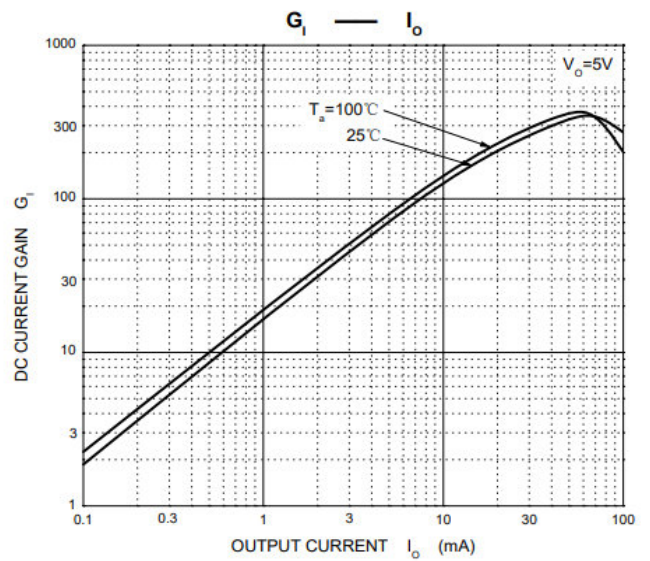
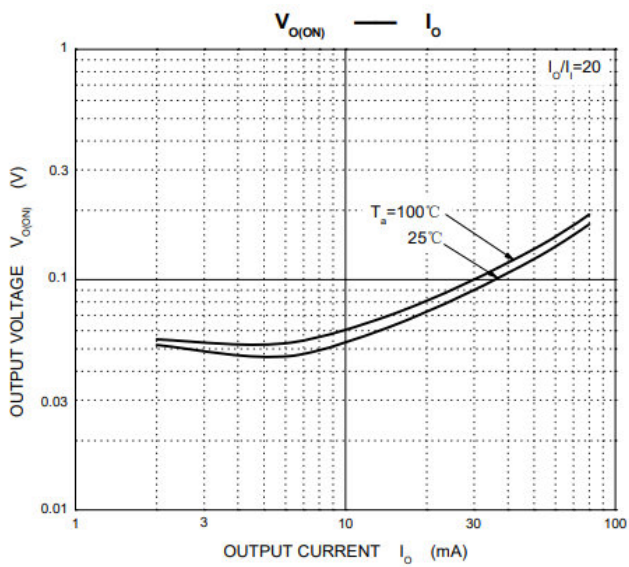
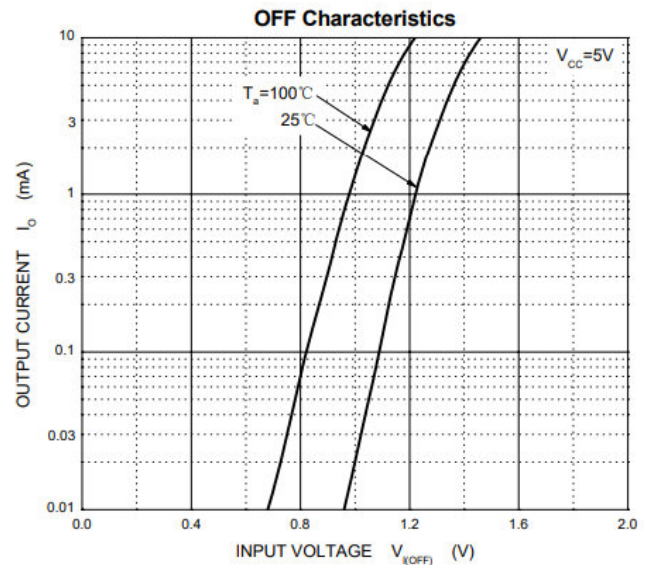
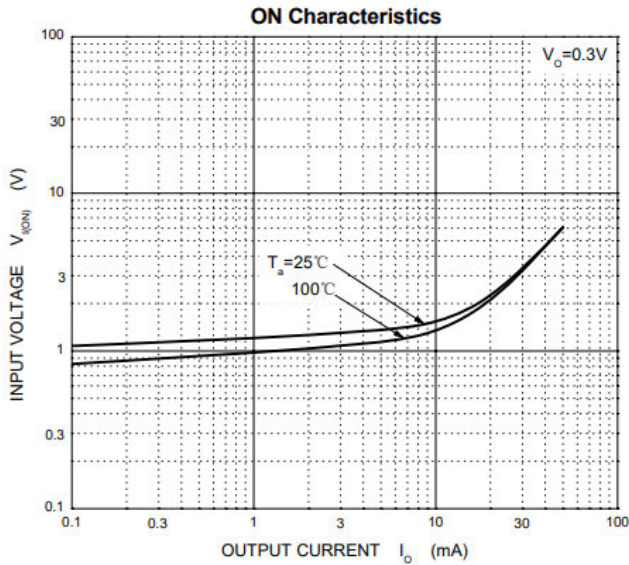
**ABSOLUTE MAXIMUM RATINGS (PNP)** ( $T_A=25^\circ\text{C}$  unless otherwise specified)

| Parameter                            | Symbol         | Value   | Unit             |
|--------------------------------------|----------------|---------|------------------|
| Supply Voltage                       | $V_{CC}$       | -50     | V                |
| Input Voltage                        | $V_{IN}$       | -40~10  |                  |
| Output Current                       | $I_O$          | -50     | mA               |
|                                      | $I_C$          | -100    |                  |
| Power Dissipation                    | $P_D$          | 150     | mW               |
| Junction & Storage Temperature Range | $T_J, T_{STG}$ | -55~150 | $^\circ\text{C}$ |

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

| Parameter            | Symbol       | Min. | Typ. | Max.  | Unit          | Test Condition  |
|----------------------|--------------|------|------|-------|---------------|---|
| Input Voltage        | $V_{I(off)}$ | -0.5 | -    | -     | V             | $V_{CC} = -5V, I_O = -100\mu\text{A}$                 |
|                      | $V_{I(on)}$  | -    | -    | -3    |               | $V_O = -0.3V, I_O = -10\text{mA}$                     |
| Output Voltage       | $V_{O(on)}$  | -    | -    | -0.3  |               | $I_O/I_I = -10\text{mA}/-0.5\text{mA}$                |
| Input Current        | $I_I$        | -    | -    | -0.88 | mA            | $V_I = -5V$   |
| Output Current       | $I_{O(off)}$ | -    | -    | -0.5  | $\mu\text{A}$ | $V_{CC} = -50V, V_I = 0$                              |
| DC Current Gain      | $G_I$        | 30   | -    | -     | V             | $V_O = -5V, I_O = -5\text{mA}$                        |
| Input Resistance     | $R_1$        | 7    | 10   | 13    | k $\Omega$    |   |
| Resistance Ratio     | $R_2/R_1$    | 0.8  | 1    | 12    |               |   |
| Transition Frequency | $f_T$        | -    | 250  | -     | MHz           | $V_{CE} = -10V, I_E = -5\text{mA}, f = 100\text{MHz}$ |

**CHARACTERISTICS CURVE (NPN)**



**CHARACTERISTICS CURVE (PNP)**

