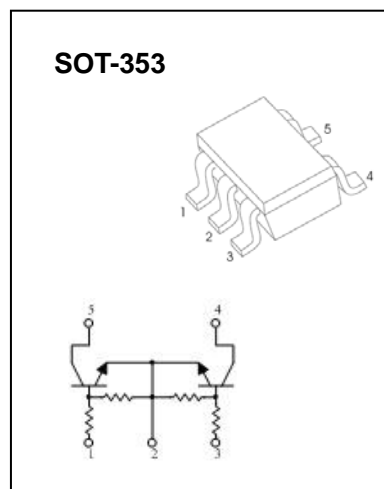


Digital Transistors (Built-in Resistors)

UMG8N Dual Digital Transistors (NPN+NPN)

FEATURE

- Built-In biasing resistors
- Two DTC143Z chips in one package
- Emitter(GND)-common type
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see inner circuit)
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of completely eliminating parasitic effects
- Only the on/off conditions need to be set for operation, making the circuit design easy



APPLICATION

- Inverter circuit, Interface circuit, Driver circuit

MARKING: G8

Absolute maximum ratings ($T_a=25^{\circ}\text{C}$) (For Tr1 and Tr2 in common)

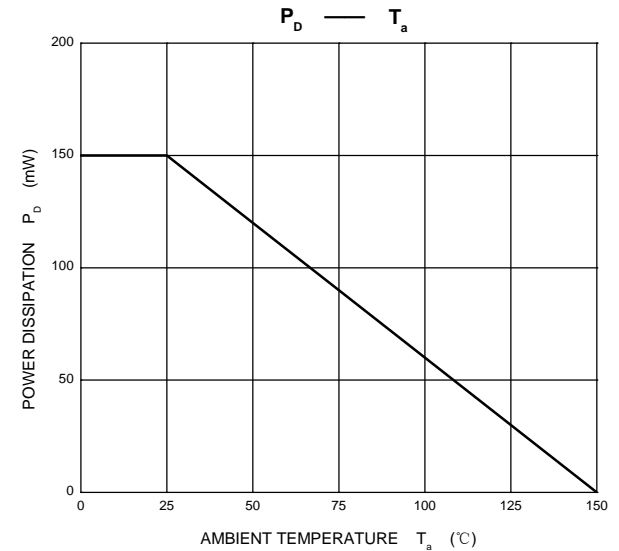
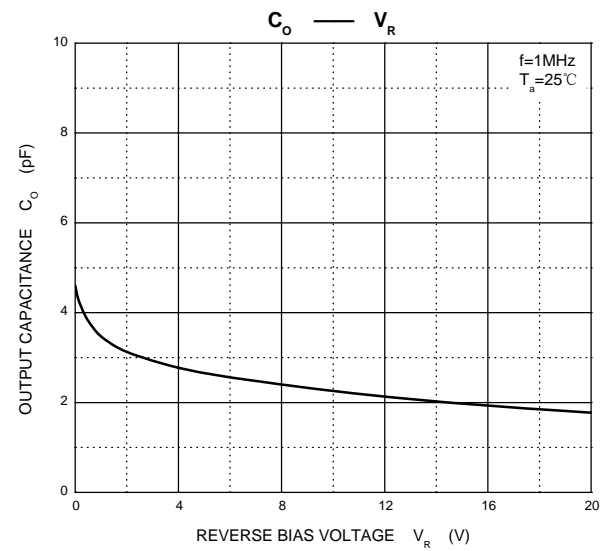
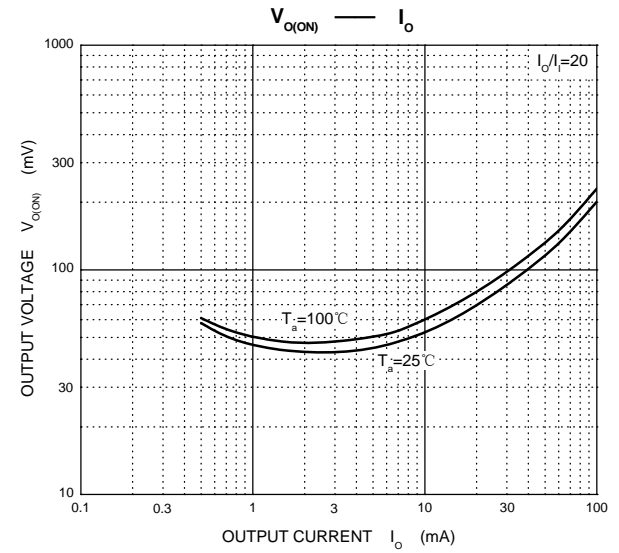
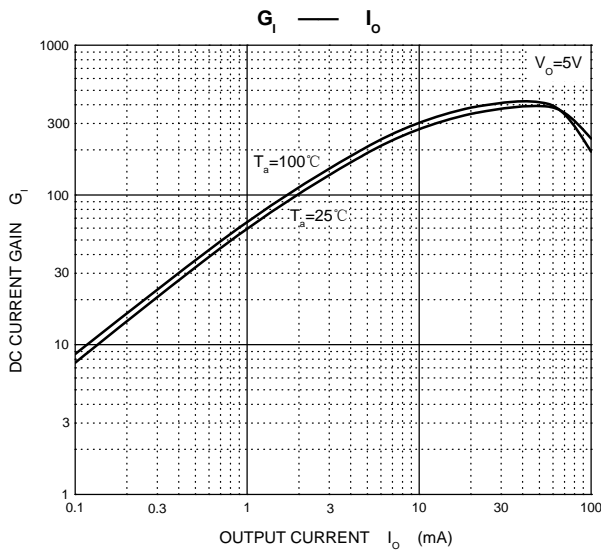
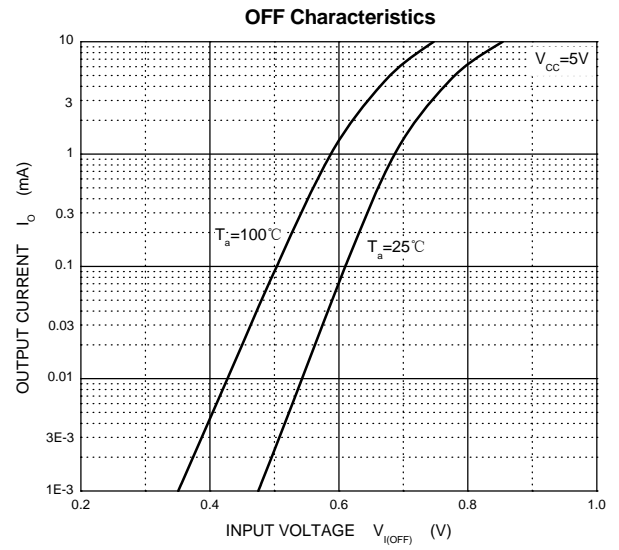
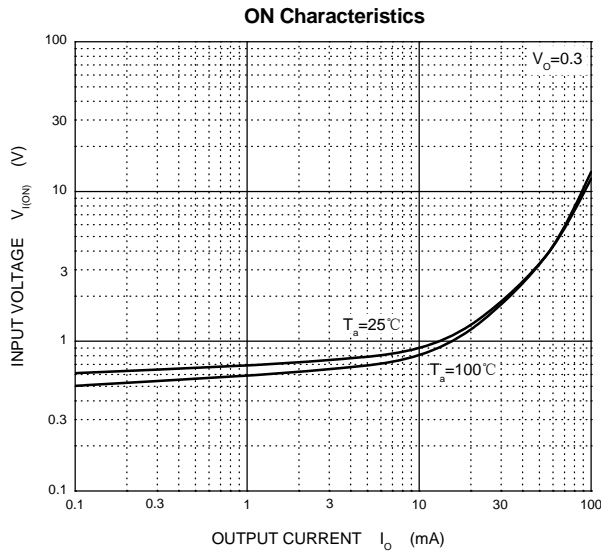
| Symbol | Parameter | Value | Unit |
|-----------|----------------------|-------------|--------------------|
| V_{CC} | Supply voltage | 50 | V |
| V_i | Input voltage | -5~+30 | V |
| I_o | Output current | 100 | mA |
| P_D | Power dissipation | 150(Total*) | mW |
| T_J | Junction temperature | 150 | $^{\circ}\text{C}$ |
| T_{stg} | Storage temperature | -55~+150 | $^{\circ}\text{C}$ |

*120mW per element must not be exceeded

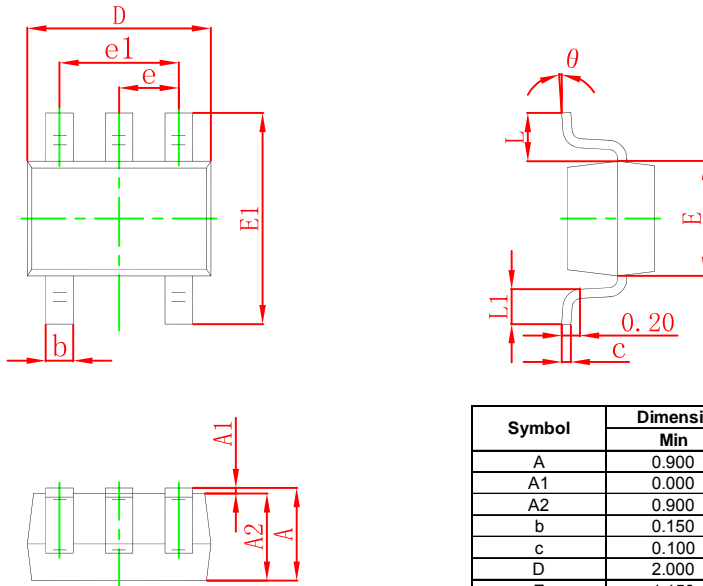
Electrical Characteristics ($T_a=25^{\circ}\text{C}$) (For Tr1 and Tr2 in common)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|------------------------|--------------|------------------------------|------|-----|------|------------|
| Input turn-on voltage | $V_{i(on)}$ | $V_{CC}=0.3V, I_o=5mA$ | | | 1.3 | V |
| Input cut-off voltage | $V_{i(off)}$ | $V_{CC}=5V, I_o=100\mu A$ | 0.5 | | | V |
| Output voltage | $V_{O(on)}$ | $I_o=5mA, I_i=0.25mA$ | | | 0.3 | V |
| Input cut-off current | I_i | $V_i=5V$ | | | 1.8 | mA |
| Output cut-off current | $I_{O(off)}$ | $V_{CC}=50V, V_i=0$ | | | 0.5 | μA |
| DC current gain | G_i | $V_o=5V, I_o=10mA$ | 80 | | | |
| Input resistance | R_1 | | 3.29 | 4.7 | 6.11 | k Ω |
| Resistance ratio | R_2/R_1 | | 8 | 10 | 12 | |
| Transition frequency | f_T | $V_o=10V, I_o=5mA, f=100MHz$ | | 250 | | MHz |

Typical Characteristics

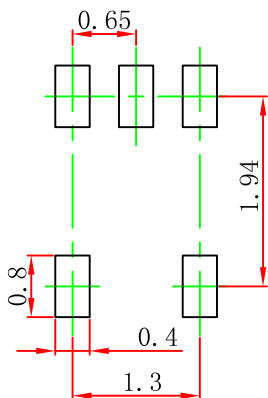


SOT-353 Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 0.900 | 1.100 | 0.035 | 0.043 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.000 | 0.035 | 0.039 |
| b | 0.150 | 0.350 | 0.006 | 0.014 |
| c | 0.100 | 0.150 | 0.004 | 0.006 |
| D | 2.000 | 2.200 | 0.079 | 0.087 |
| E | 1.150 | 1.350 | 0.045 | 0.053 |
| E1 | 2.150 | 2.400 | 0.085 | 0.094 |
| e | 0.650 TYP | | 0.026 TYP | |
| e1 | 1.200 | 1.400 | 0.047 | 0.055 |
| L | 0.525 REF | | 0.021 REF | |
| L1 | 0.260 | 0.460 | 0.010 | 0.018 |
| theta | 0° | 8° | 0° | 8° |

SOT-353 Suggested Pad Layout



Note:

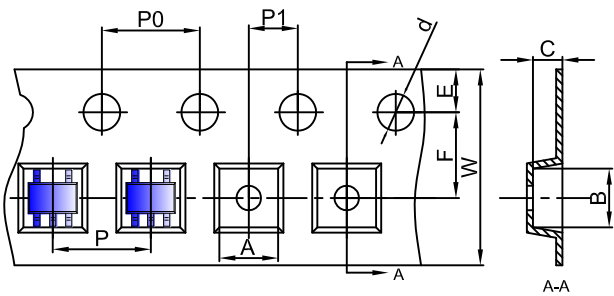
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

NOTICE

JCET reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JCET does not assume any liability arising out of the application or use of any product described herein.

SOT-353 Tape and Reel

SOT-353 Embossed Carrier Tape

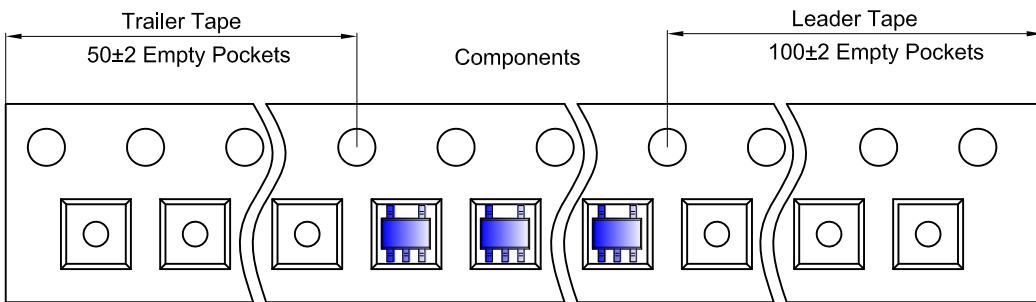


Packaging Description:

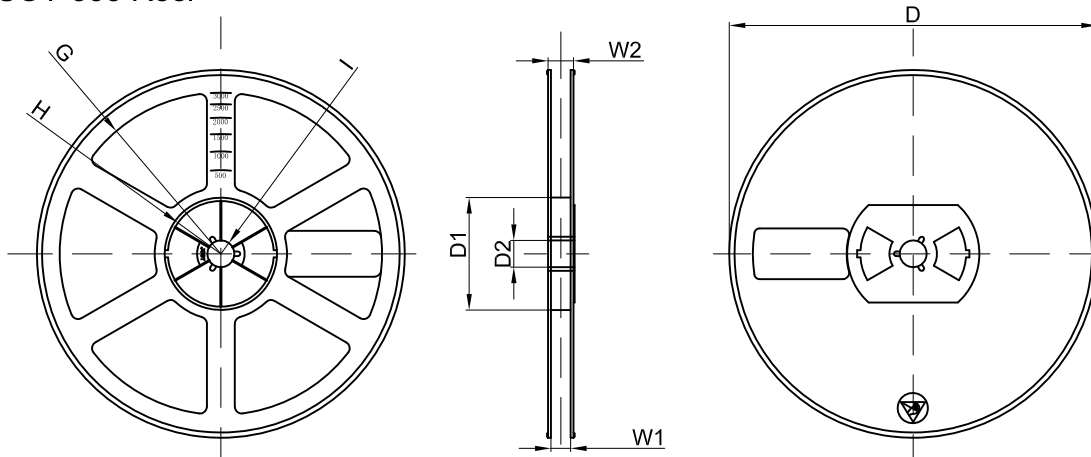
SOT-353 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

| Dimensions are in millimeter | | | | | | | | | | |
|------------------------------|------|------|------|-------|------|------|------|------|------|------|
| Pkg type | A | B | C | d | E | F | P0 | P | P1 | W |
| SOT-353 | 2.25 | 2.55 | 1.20 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

SOT-353 Tape Leader and Trailer



SOT-353 Reel



| Dimensions are in millimeter | | | | | | | | |
|------------------------------|---------|-------|-------|--------|--------|-------|------|-------|
| Reel Option | D | D1 | D2 | G | H | I | W1 | W2 |
| 7"Dia | Ø178.00 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |

| REEL | Reel Size | Box | Box Size(mm) | Carton | Carton Size(mm) | G.W.(kg) |
|----------|-----------|------------|--------------|-------------|-----------------|----------|
| 3000 pcs | 7 inch | 45,000 pcs | 203×203×195 | 180,000 pcs | 438×438×220 | |

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[DTC115TKAT146](#) [DTC124TETL](#) [DTC144VUAT106](#) [MUN5241T1G](#) [NSBA114TDP6T5G](#) [SMUN5330DW1T1G](#) [SSVMUN5312DW1T2G](#)
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