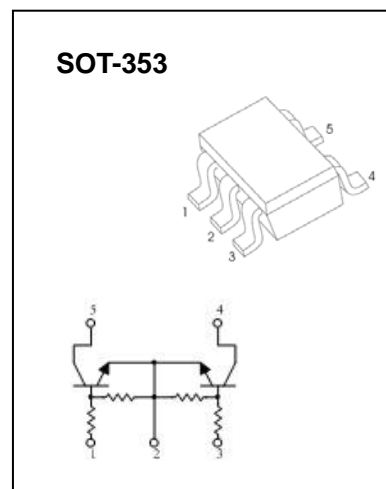


## Digital Transistors (Built-in Resistors)

### 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	$^{\circ}\text{C}$

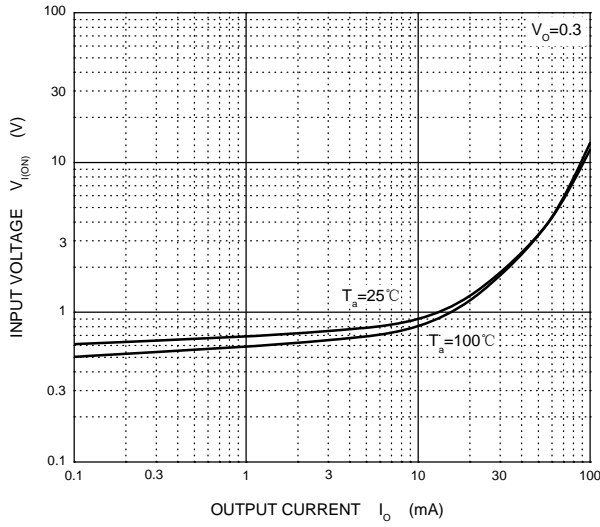
\*120mW per element must not be exceeded

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

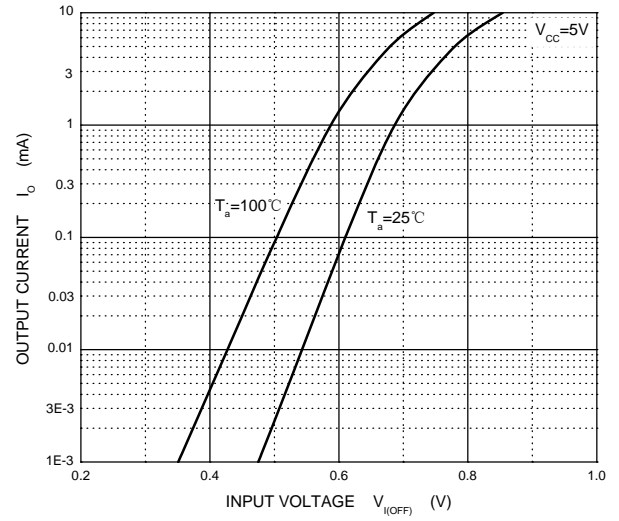
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Input turn-on voltage	$V_{i(on)}$	$V_{CC}=0.3V, I_o=5mA$			1.3	V
Input cut-off voltage	$V_{i(off)}$	$V_{CC}=5V, I_o=100\mu A$	0.5			V
Output voltage	$V_{O(on)}$	$I_o=5mA, I_i=0.25mA$			0.3	V
Input cut-off current	$I_i$	$V_i=5V$			1.8	mA
Output cut-off current	$I_{O(off)}$	$V_{CC}=50V, V_i=0$			0.5	$\mu A$
DC current gain	$G_i$	$V_o=5V, I_o=10mA$	80			
Input resistance	$R_1$		3.29	4.7	6.11	k $\Omega$
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

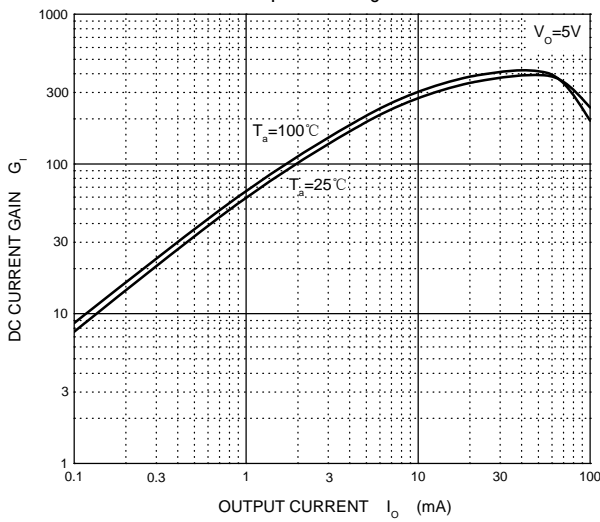
**ON Characteristics**



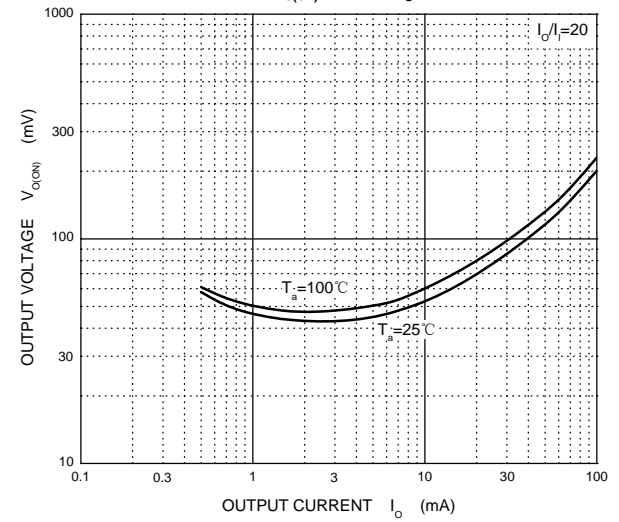
**OFF Characteristics**



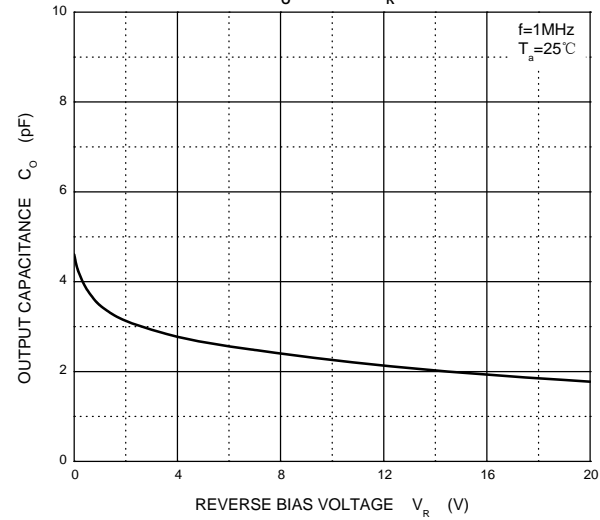
**$G_I - I_O$**



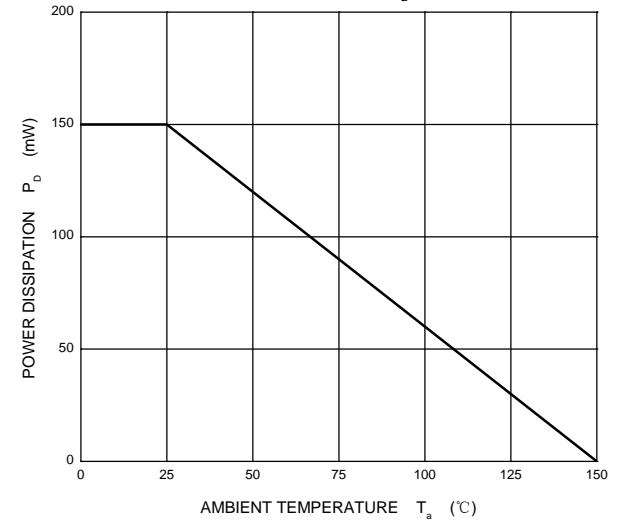
**$V_{O(ON)} - I_O$**



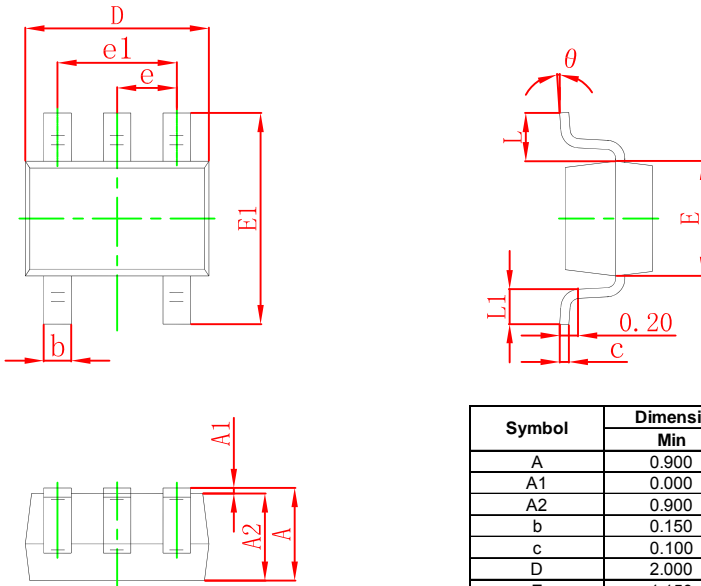
**$C_O - V_R$**



**$P_D - T_a$**

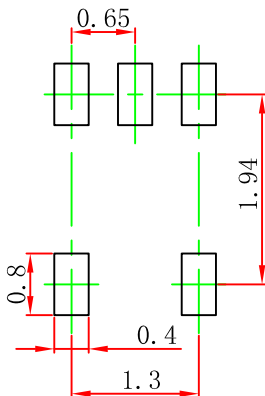


## SOT-353 Package Outline Dimensions



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:

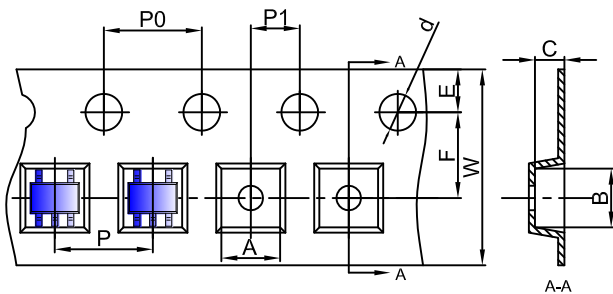
1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

### 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

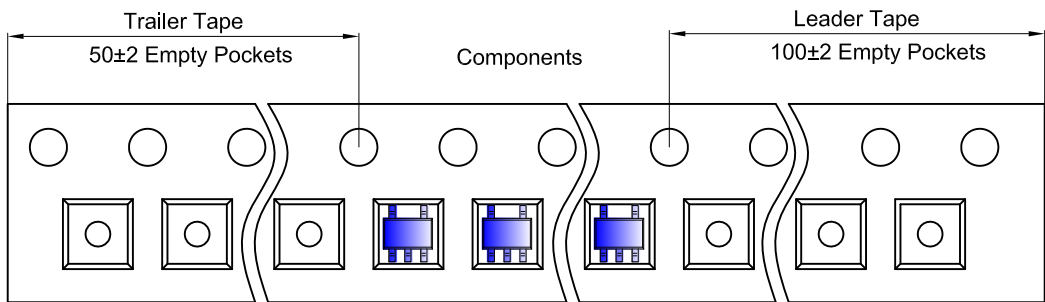
## SOT-353 Embossed Carrier Tape



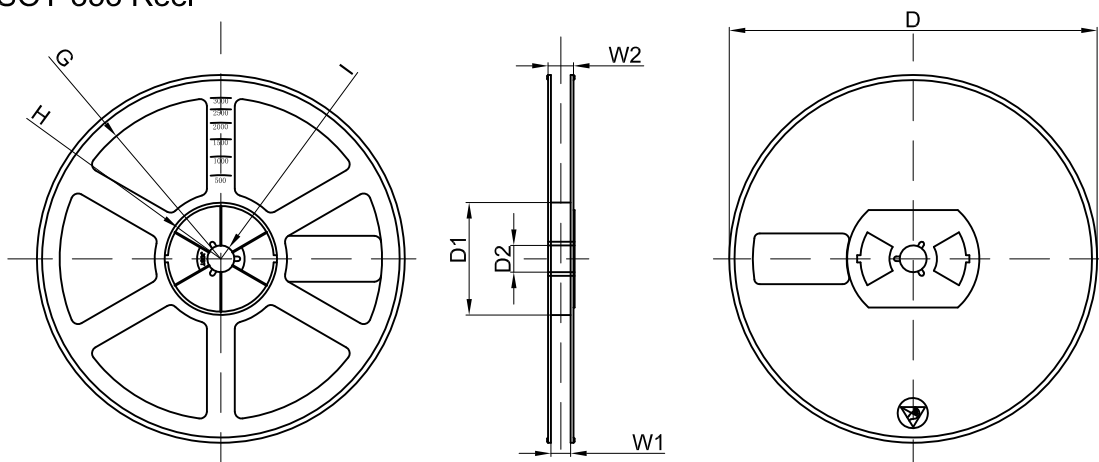
**Packaging Description:**  
 SOT-353 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed 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	