



## AD-UMC3N Digital Transistor (Built-In Resistors)

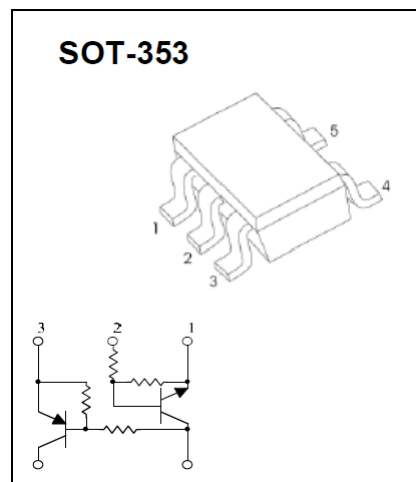
**AD-UMC3N Dual digital transistor (NPN+PNP)**

### FEATURES

- AD-DTA114E and AD-DTC114E series chips in one package
- Ideal for power switch circuits
- AEC-Q101 qualified

### MARKING

C3



### MAXIMUM RATINGS NPN AD-DTC114E ( $T_j = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Supply voltage	$V_{CC}$	50	V
Input voltage	$V_{IN}$	-10 ~ 40	V
Output current	$I_o^{(1)}$	50	mA
Peak collector current	$I_{CM}$	100	mA
Maximum power dissipation	$P_D^{(1)}$	150	mW
Operating junction and storage temperature range	$T_j, T_{stg}$	-55 ~ 150	$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS NPN AD-DTC114E ( $T_j = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test condition	Min	Typ	Max	Unit
Input voltage	$V_{I(off)}$	$V_{CC} = 5V, I_o = 100\mu\text{A}$	0.3	-	-	V
	$V_{I(on)}$	$V_o = 0.3V, I_o = 10\text{mA}$	-	-	3	
Output voltage	$V_{O(on)}$	$I_o/I_i = 10\text{mA}/0.5\text{mA}$	-	-	0.3	V
Input current	$I_i$	$V_i = 5V$	-	-	0.88	mA
Output current	$I_{O(off)}$	$V_{CC} = 50V, V_i = 0V$	-	-	0.5	$\mu\text{A}$
DC current gain	$G_i$	$V_o = 5V, I_o = 5\text{mA}$	30	-	-	-
Input resistance	$R_1$		7	10	13	$\text{k}\Omega$
Resistance ratio	$R_2/R_1$		0.8	1	1.2	
Transition frequency	$f_T$	$V_o = 10V, I_o = 5\text{mA}, f = 100\text{MHz}$	-	250	-	MHz

**MAXIMUM RATINGS PNP AD-DTA114E ( $T_j = 25^\circ\text{C}$  unless otherwise specified)**

Parameter	Symbol	Value	Unit
Supply voltage	$V_{CC}$	-50	V
Input voltage	$V_{IN}$	-40 ~ 10	V
Output current	$I_O^{1)}$	-50	mA
Peak collector current	$I_{CM}$	-100	mA
Maximum power dissipation	$P_D^{1)}$	150	mW
Operating junction and storage temperature range	$T_j, T_{stg}$	-55 ~ 150	$^\circ\text{C}$

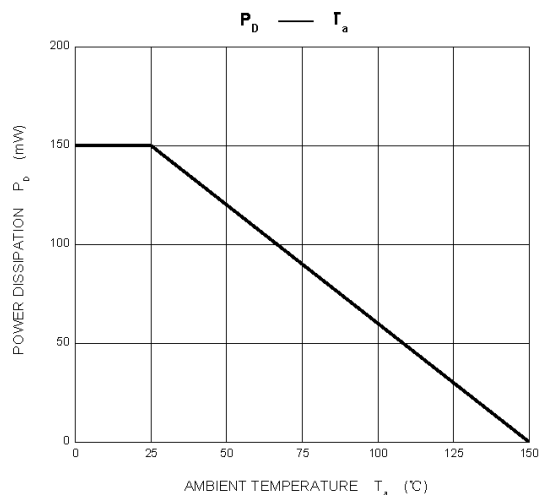
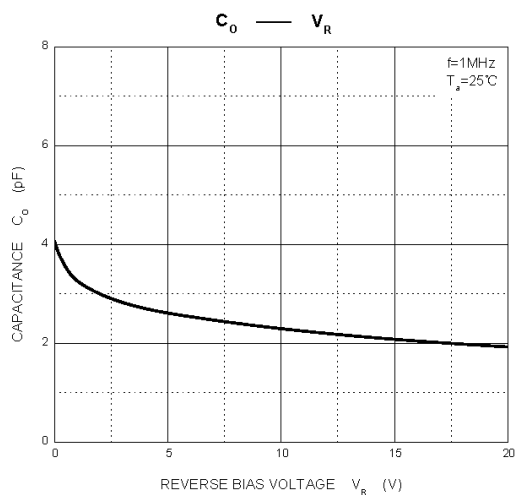
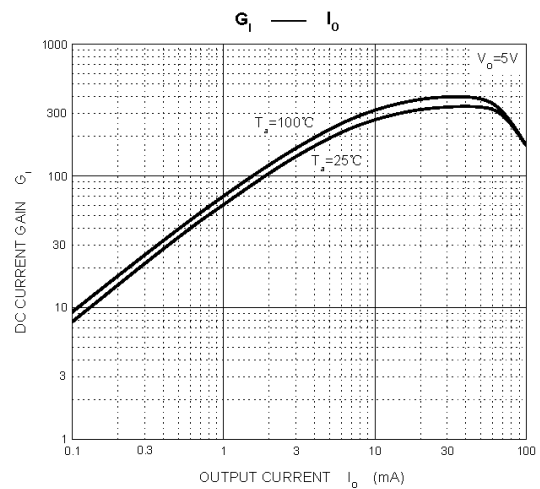
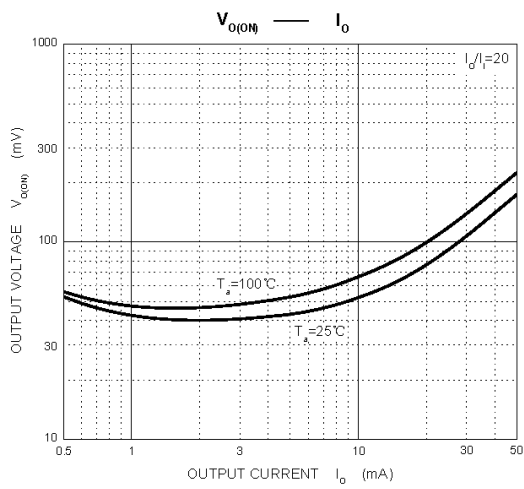
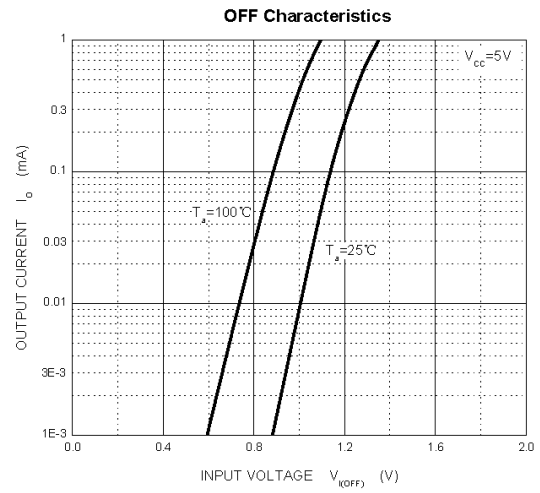
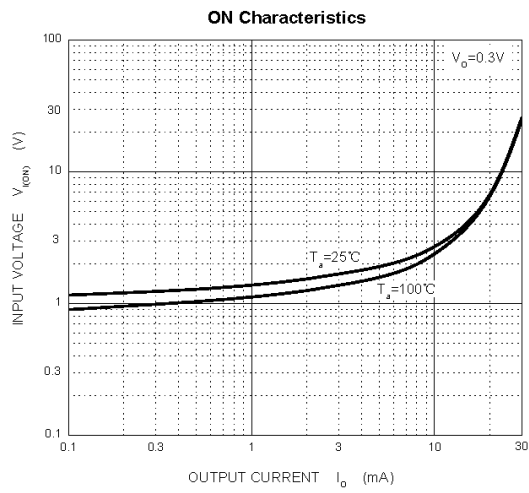
**ELECTRICAL CHARACTERISTICS PNP AD-DTA114E ( $T_j = 25^\circ\text{C}$  unless otherwise specified)**

Parameter	Symbol	Test condition	Min	Typ	Max	Unit
Input voltage	$V_{I(off)}$	$V_{CC} = -5V, I_O = -100\mu\text{A}$	-0.5	-	-	V
	$V_{I(on)}$	$V_O = -0.3V, I_O = -10\text{mA}$	-	-	-3	
Output voltage	$V_{O(on)}$	$I_O/I_I = -10\text{mA}/-0.5\text{mA}$	-	-	-0.3	V
Input current	$I_I$	$V_I = -5V$	-	-	-0.88	mA
Output current	$I_{O(off)}$	$V_{CC} = -50V, V_I = 0V$	-	-	-0.5	$\mu\text{A}$
DC current gain	$G_I$	$V_O = -5V, I_O = -5\text{mA}$	30	-	-	-
Input resistance	$R_1$		7	10	13	$\text{k}\Omega$
Resistance ratio	$R_2/R_1$		0.8	1	1.2	
Transition frequency	$f_T$	$V_O = -10V, I_O = -5\text{mA}, f = 100\text{MHz}$	-	250	-	MHz

1) Maximum allowed temperature  $T_j = 25^\circ\text{C}$ .

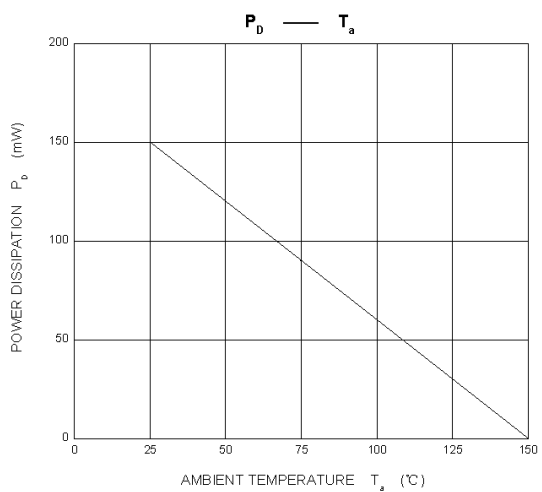
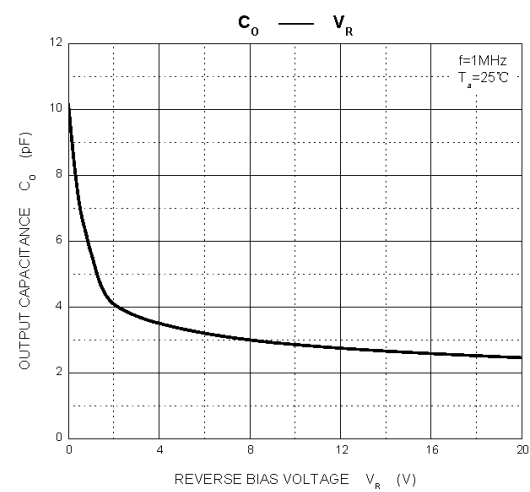
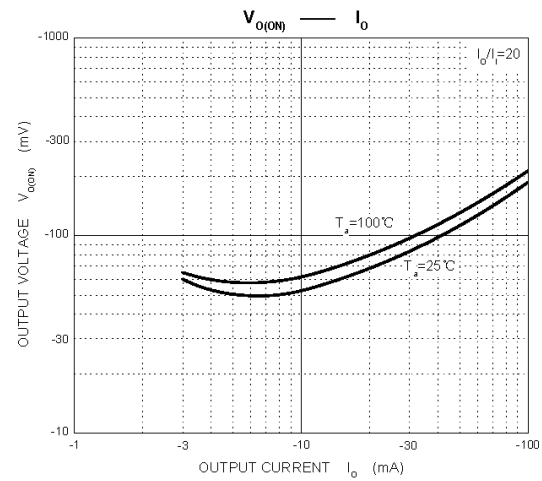
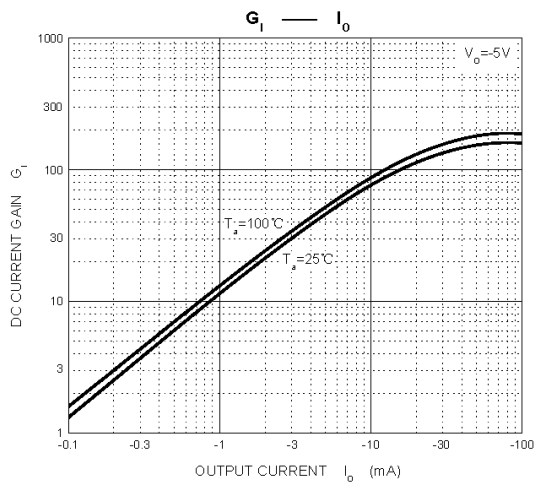
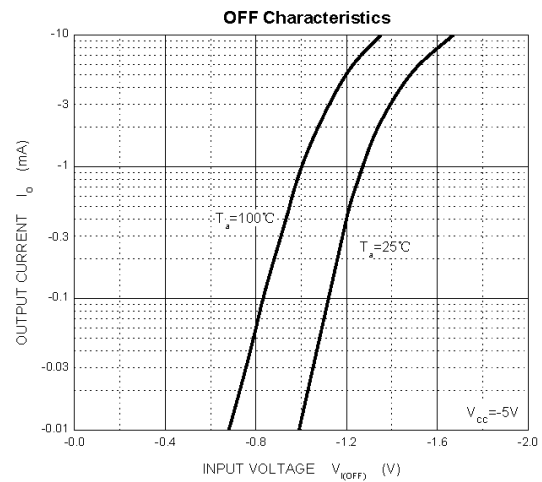
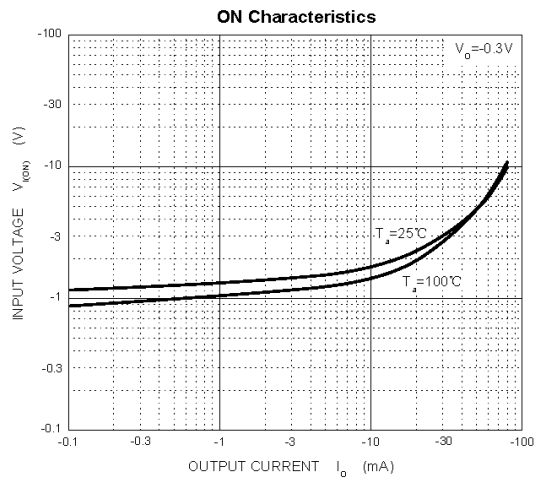
TYPICAL CHARACTERISTICS

AD-DTC114E

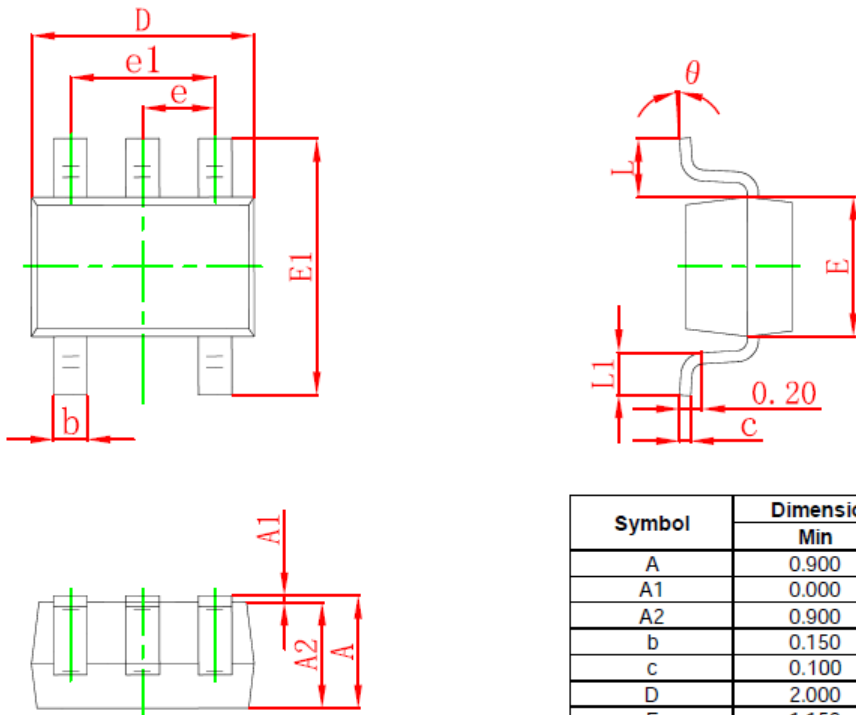


TYPICAL CHARACTERISTICS

AD-DTA114E

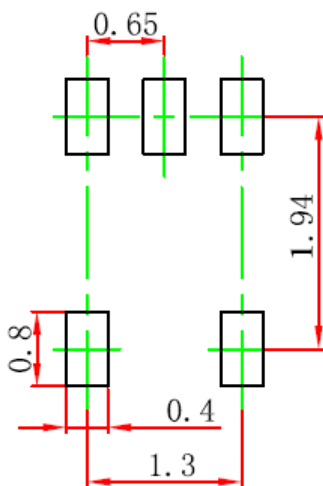


### SOT-353 PACKAGE OUTLINE DIMENSIONS



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
θ	0°	8°	0°	8°

### SOT-353 SUGGESTED PAD LAYOUT

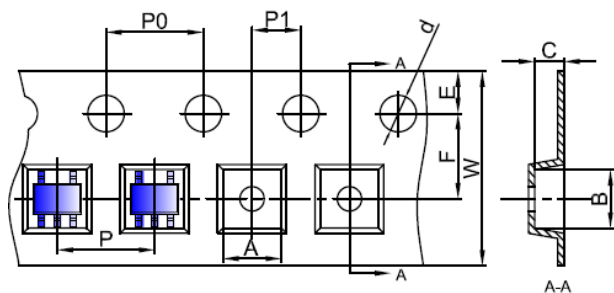


Note:

1. Controlling dimension in millimeters.
2. General tolerance: ±0.05mm.
3. The pad layout is for reference purpose only.

### SOT-353 TAPE AND REEL

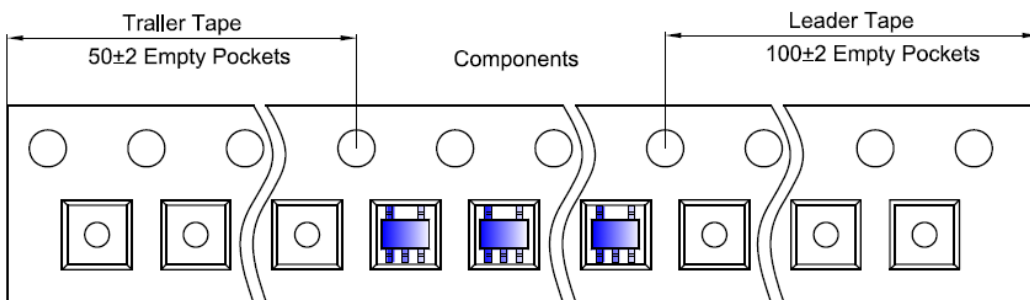
#### SOT-353 Embossed Carrier Tape



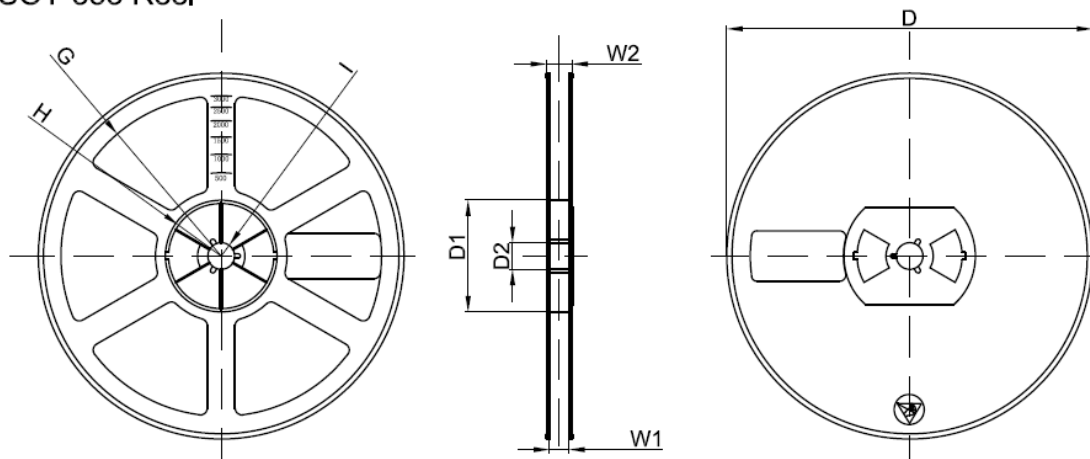
**Packaging Description:**  
 SOT-353 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed 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"D <sub>1a</sub>	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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**PUBLISHED BY**

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13th Floor, C Block, Tengfei Building, Yan Chuang Yuan, Nanjing Jiangbei New Area, China

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