



AD-UMC4N Digital Transistor (Built-In Resistors)

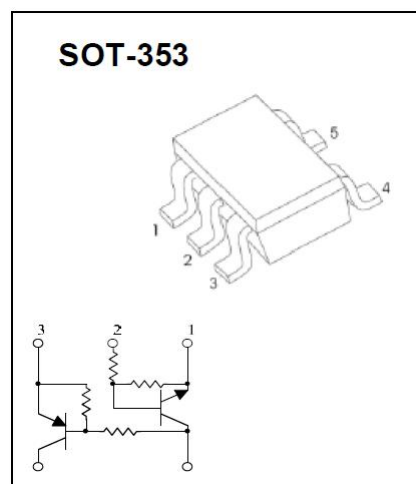
AD-UMC4N Dual digital transistor (NPN+PNP)

FEATURES

- AD-DTC144E* and AD-DTA114Y* series chips in one package
- AEC-Q101 qualified

MARKING

$\overline{C4}$



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	$I_O^{(1)}$	100	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	$V_{I(off)}$	$V_{CC} = 5V, I_O = 100\mu A$	0.5	-	-	V
	$V_{I(on)}$	$V_O = 0.3V, I_O = 2mA$	-	-	3	
Output voltage	$V_{O(on)}$	$I_O/I_I = 10mA/0.5mA$	-	-	0.3	V
Input current	I_I	$V_I = 5V$	-	-	0.18	mA
Output current	$I_{O(off)}$	$V_{CC} = 50V, V_I = 0V$	-	-	0.5	μA
DC current gain	G_I	$V_O = 5V, I_O = 5mA$	68	-	-	-
Input resistance	R_1	-	32.9	47	61.1	k Ω
Resistance ratio	R_2/R_1	-	0.8	1	1.2	
Transition frequency	f_T	$V_O = 10V, I_O = 5mA, f = 100MHz$	-	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 ~ 6	V
Output current	$I_O^{(1)}$	-70	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	$V_{I(off)}$	$V_{CC} = -5V, I_O = -100\mu A$	-0.3	-	-	V
	$V_{I(on)}$	$V_O = -0.3V, I_O = -1mA$	-	-	-1.4	
Output voltage	$V_{O(on)}$	$I_O/I_I = -5mA/-0.25mA$	-	-	-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	μA
DC current gain	G_I	$V_O = -5V, I_O = -5mA$	68	-	-	-
Input resistance	R_1	-	7	10	13	k Ω

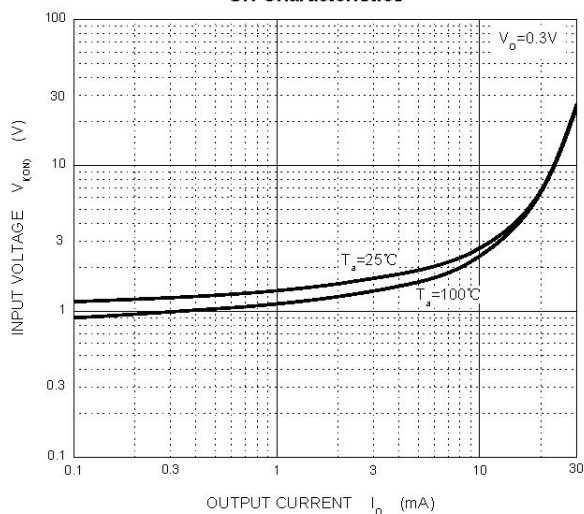
Resistance ratio	R_2/R_1	-	3.7	4.7	5.7	-
Transition frequency	f_T	$V_O = -10V, I_O = -5mA, f = 100MHz$	-	250	-	MHz

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

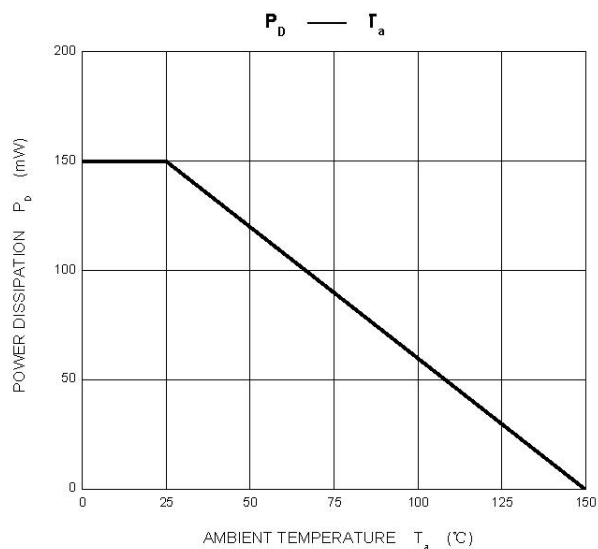
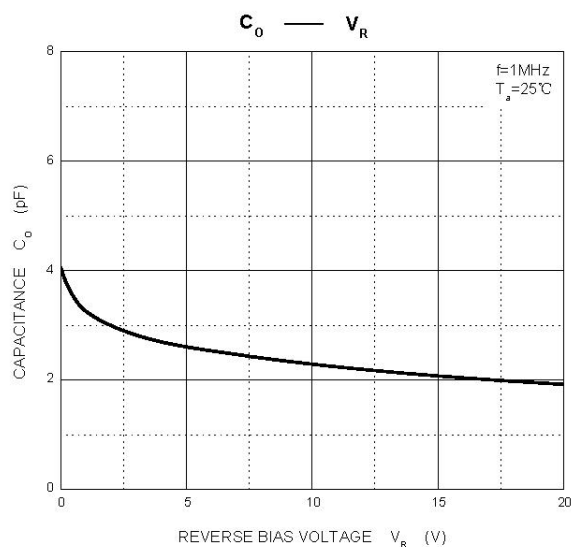
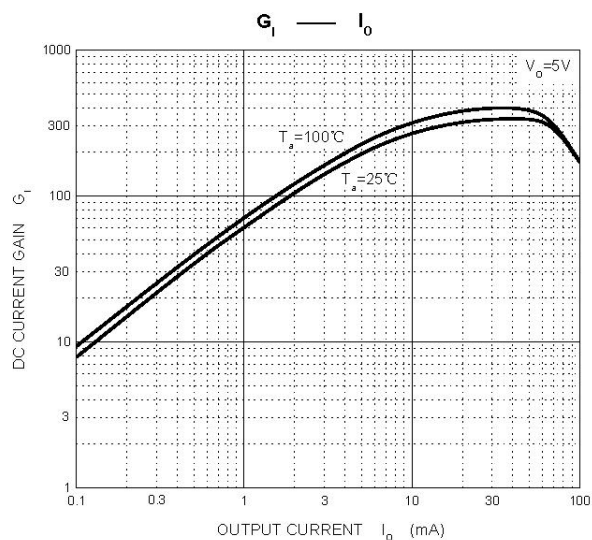
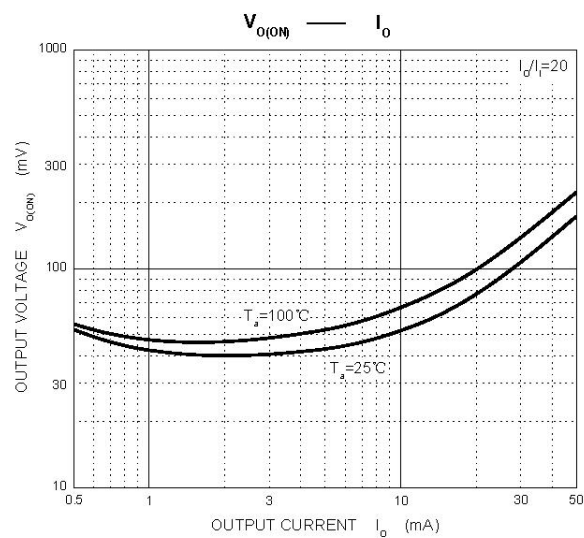
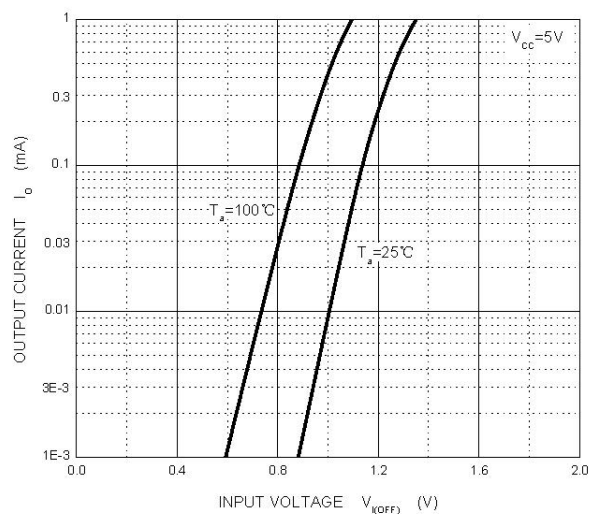
TYPICAL CHARACTERISTICS

AD-DTC114E

ON Characteristics

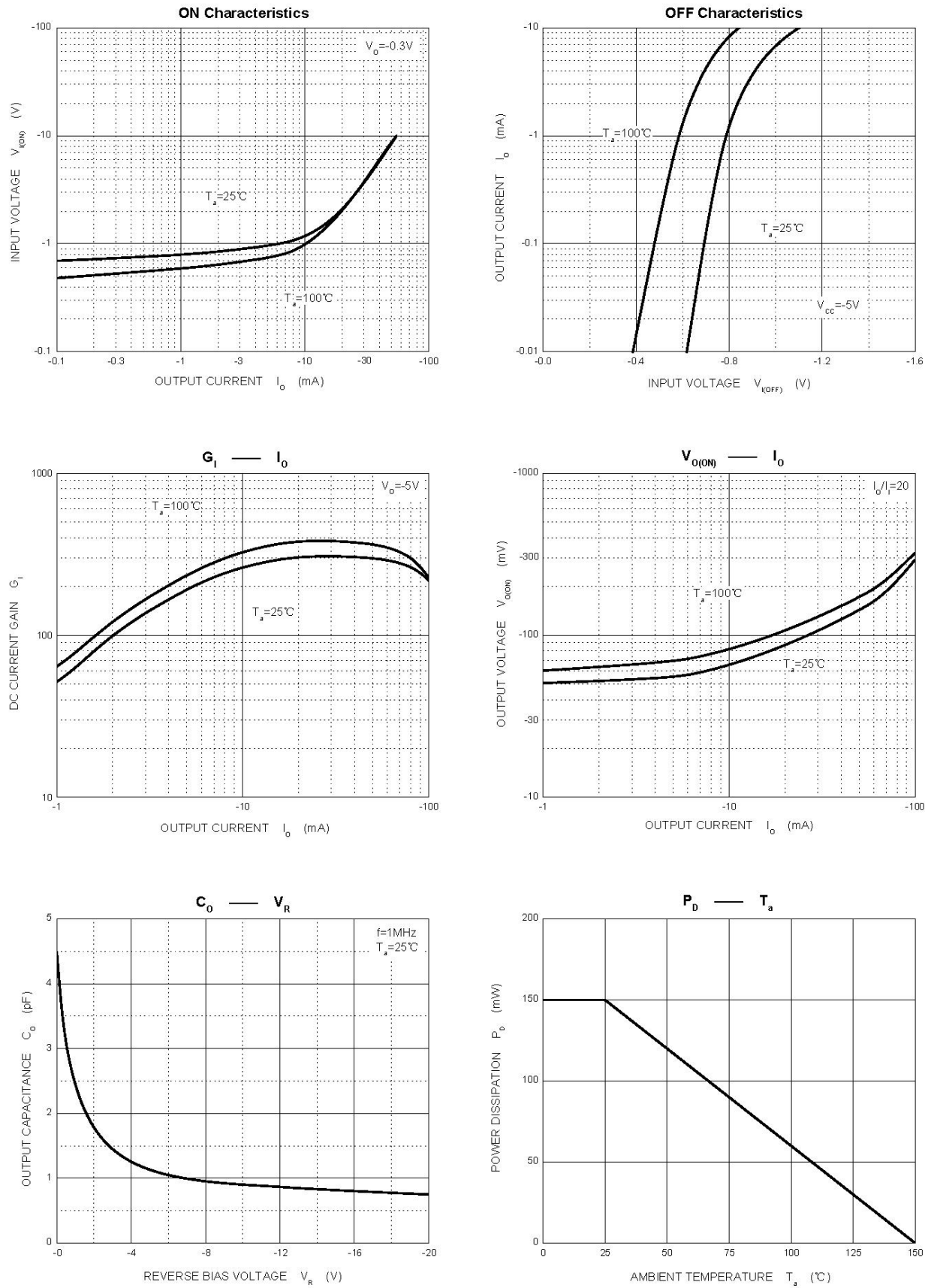


OFF Characteristics

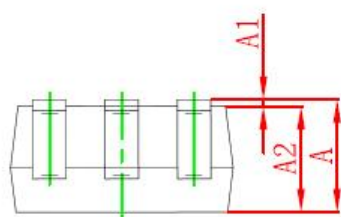
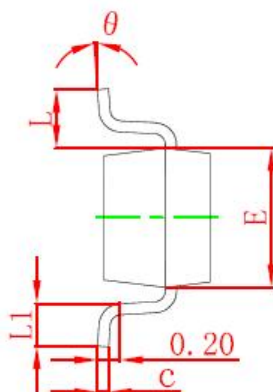
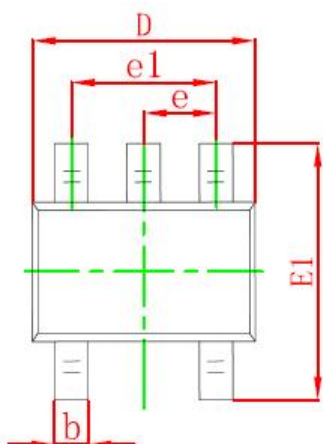


TYPICAL CHARACTERISTICS

AD-DTA114E

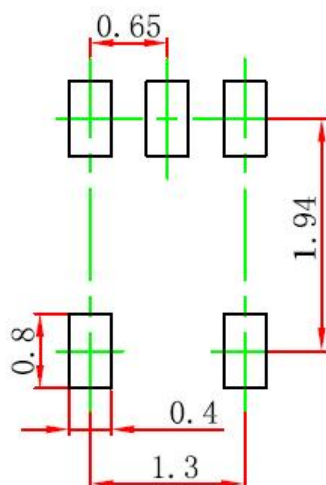


SOT-353 PACKAGE OUTLINE DIMENSIONS



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

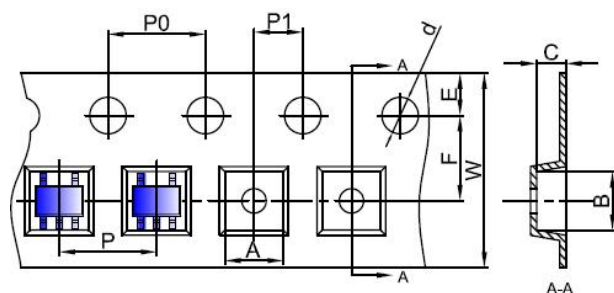


Note:

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

SOT-353 TAPE AND REEL

SOT-353 Embossed Carrier Tape

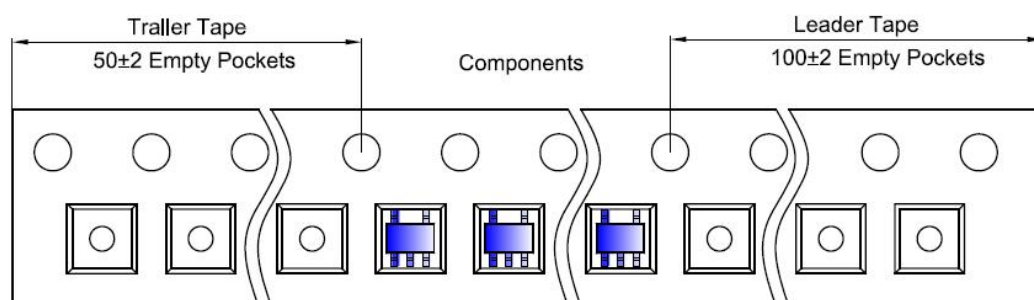


Packaging Description:

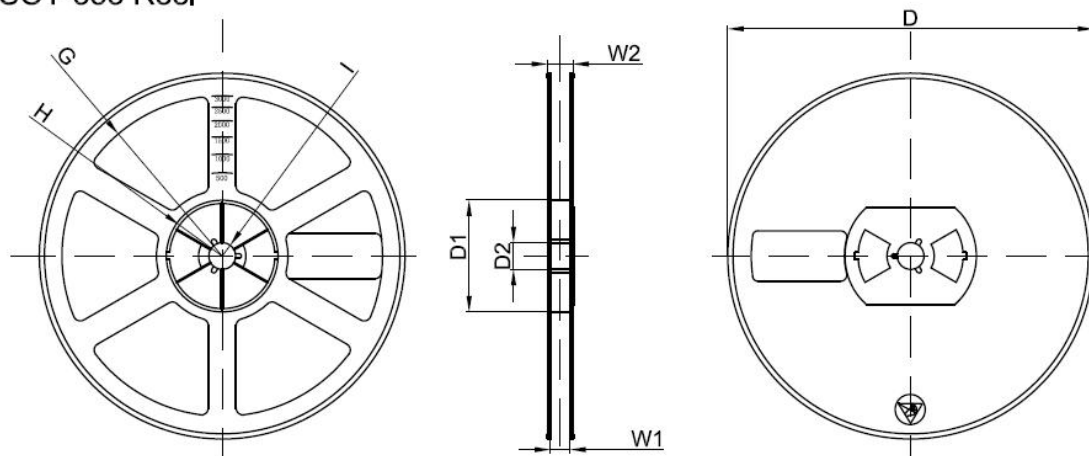
SOT-353 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts 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"D1a	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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