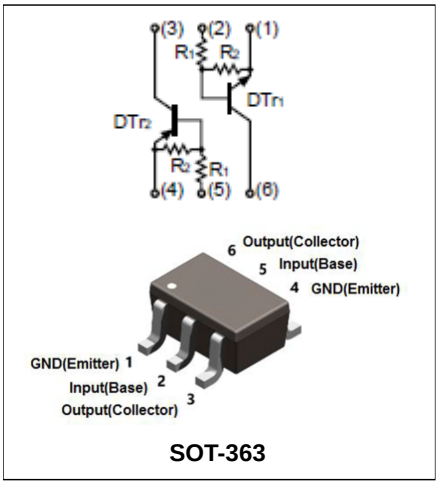
UMD3N

Dual Digital Transistor(NPN+PNP)

Features

- Both the DTA114E and DTC114E transistor in SOT-363 Package
- Transistor elements are independent, eliminating interference
- Mounting cost and area can be cut in half



SOT-363

Mechanical Data

- Case: SOT-363
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
UMD3N	SOT-363	3000 pcs / Tape & Reel	D3

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value		Unit
		DTr1	DTr2	
Supply Voltage	V_{CC}	50	-50	V
Input Voltage	V_I	-10 ~ +40	10 ~ -40	V
Output Current	I_O	50	-50	mA
Collector Current	$I_{C(Max)}$	100	-100	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	150	mW
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	495	°C/W
Thermal Resistance Junction-to-Case *1	$R_{\theta JC}$	296	°C/W
Thermal Resistance Junction-to-Lead *1	$R_{\theta JL}$	357	°C/W
Operating Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Note 1: The data tested by surface mounted on a 15mm * 15mm * 1mm FR4-epoxy P.C.B

Electrical Characteristics-DTr1 (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(OFF)}$	V_{CC} = 5V, I_O = 100μA	0.5	-	-	V
Input Voltage	$V_{I(ON)}$	V_O = 0.3V, I_O = 10mA	-	-	3	V
Output Voltage	$V_{O(on)}$	I_o = 10mA, I_I = 0.5mA	-	-	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	30	-	-	-
Input Resistor	R_1(R2)		7	10	13	kΩ
Resistance ratio	R2/R1		0.8	1	1.2	-
Gain-Bandwidth Product	f_T	V_{CE} = 10V, I_E = 5mA f = 100MHz	-	250	-	MHz

Electrical Characteristics-DTr2 (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(OFF)}$	V_{CC} = -5V, I_O = -100μA	-0.5	-	-	V
Input Voltage	$V_{I(ON)}$	V_O = -0.3V, I_O = -10mA	-	-	-3	V
Output Voltage	$V_{O(on)}$	I_o = -10mA, I_I = -0.5mA	-	-	-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	30	-	-	-
Input Resistor	R_1(R2)		7	10	13	kΩ
Resistance ratio	R2/R1		0.8	1	1.2	-
Gain-Bandwidth Product	f_T	V_{CE} = -10V, I_E = -5mA f = 100MHz	-	250	-	MHz

Ratings and Characteristics Curves-DTr1 (@ T_A = 25°C unless otherwise specified)

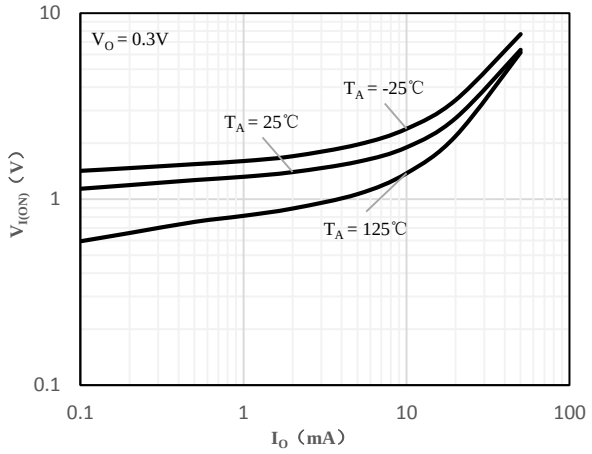


Fig 1 Input Voltage vs Output Current

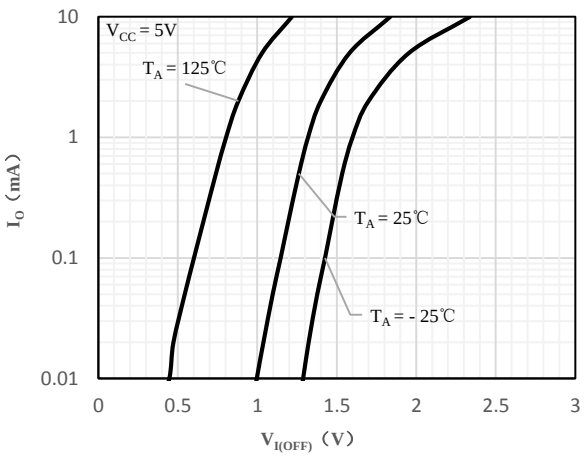


Fig 2 Output Current vs Input Voltage

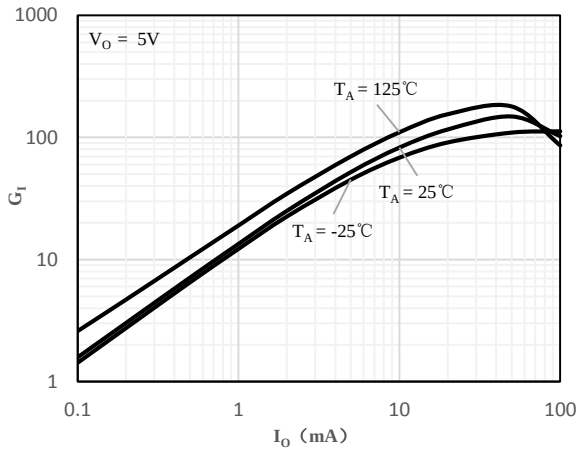


Fig 3 DC Current Gain vs Output Current

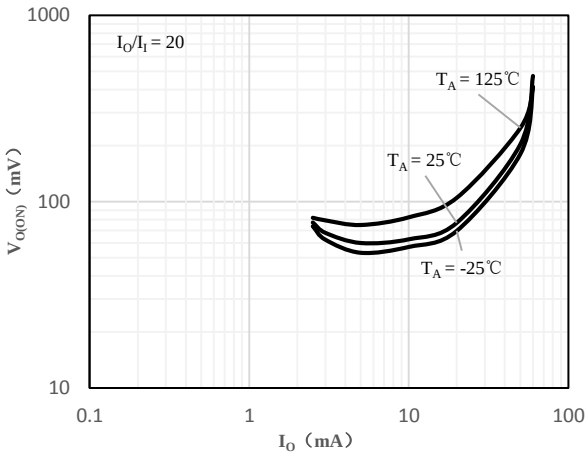


Fig 4 Output Voltage vs Output Current

Ratings and Characteristics Curves- DTr2 (@ T_A = 25°C unless otherwise specified)

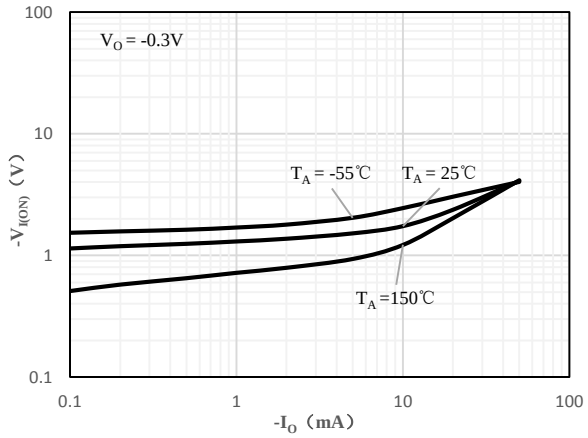


Fig 1 Input Voltage vs Output Current

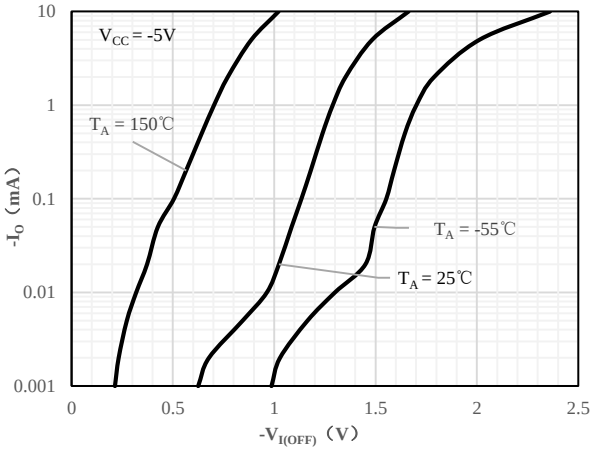


Fig 2 Output Current vs Input Voltage

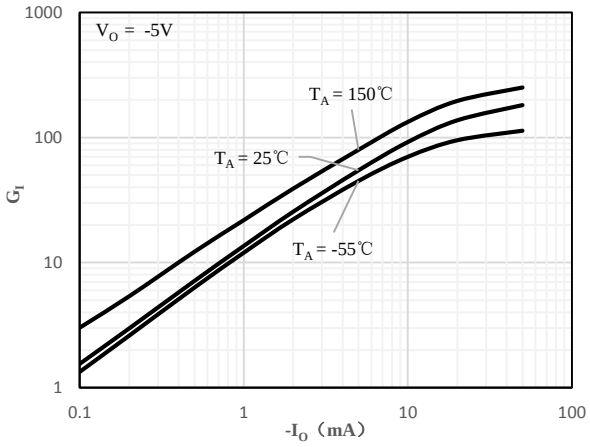


Fig 3 DC Current Gain vs Output Current

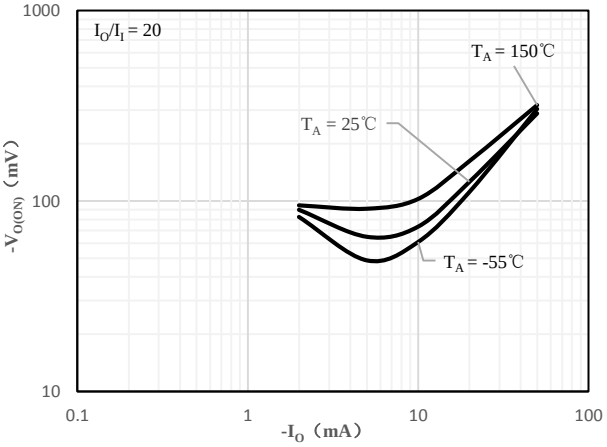


Fig 4 Output Voltage vs Output Current

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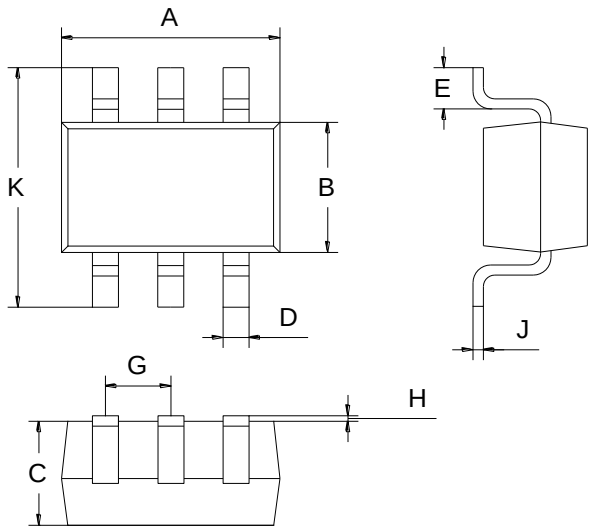
Package Outline Dimensions (Unit: mm)



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Dimension	**Min.**	**Max.**
A	2.00	2.20
B	1.15	1.35
C	0.85	1.05
D	0.15	0.35
E	0.25	0.40
G	0.60	0.70
H	0.02	0.10
J	0.05	0.15
K	2.20	2.40

Mounting Pad Layout (Unit: mm)

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