

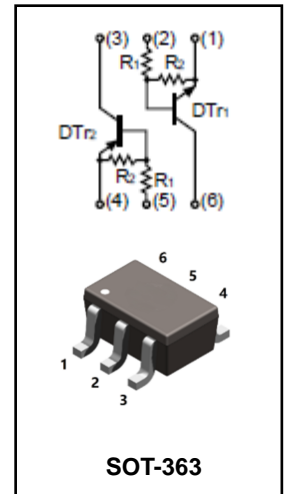


### Features

- Both the DTA114Y and DTC114Y in SOT-363 package
- Reduces board space
- Reduces component count
- Surface mount package suited for automated assembly

### 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
UMD9N	SOT-363	3000 pcs / Tape & Reel	D9

### Maximum Ratings (@ T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Value		Unit
		DT <sub>r1</sub>	DT <sub>r2</sub>	
Supply Voltage	V <sub>CC</sub>	50	-50	V
Input Voltage	V <sub>IN</sub>	-6 to +40	-40 to +6	V
Output Current	I <sub>O</sub>	70	-70	mA
Collector Current	I <sub>C (Max.)</sub>	100	-100	mA

### Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P <sub>D</sub>	150	mW
Operating Junction Temperature Range	T <sub>J</sub>	-55 ~ +150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ +150	°C



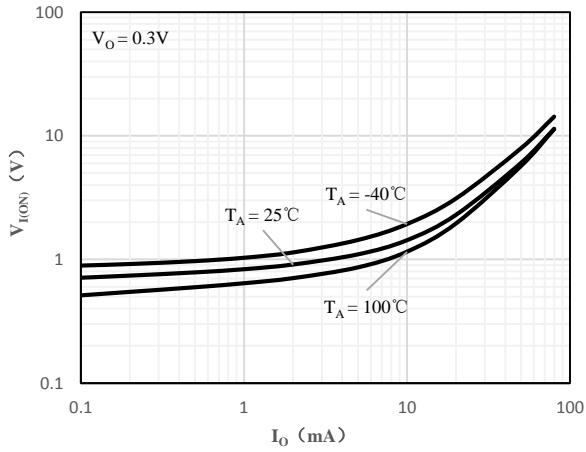
### Electrical Characteristics-DT<sub>r1</sub> (@ T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Voltage	V <sub>I(off)</sub>	V <sub>CC</sub> = 5V, I <sub>o</sub> = 100μA	0.3	-	-	V
	V <sub>I(on)</sub>	V <sub>O</sub> = 0.3V, I <sub>o</sub> = 1mA	-	-	1.4	V
Output Voltage	V <sub>O(on)</sub>	I <sub>o</sub> = 5mA, I <sub>I</sub> = 0.25mA	-	-	0.3	V
Input Current	I <sub>I</sub>	V <sub>I</sub> = 5V	-	-	0.88	mA
Output Current	I <sub>O(off)</sub>	V <sub>CC</sub> = 50V, V <sub>I</sub> = 0V	-	-	0.5	μA
DC Current Gain	G <sub>I</sub>	V <sub>O</sub> = 5V, I <sub>o</sub> = 5mA	68	-	-	-
Input Resistor	R <sub>1</sub>		7	10	13	kΩ
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>		3.7	4.7	5.7	-
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>E</sub> = -5mA, f = 100MHz	-	250	-	MHz

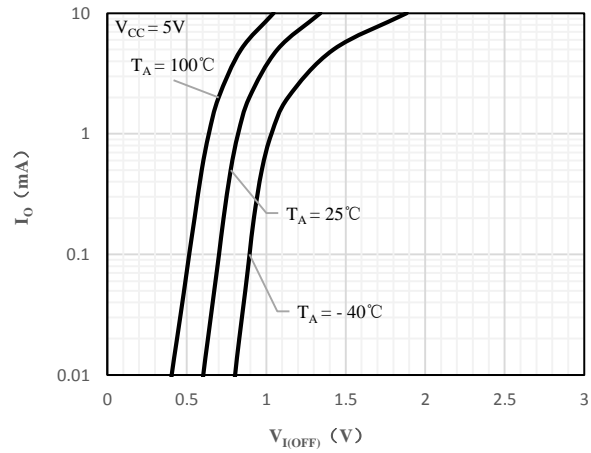
### Electrical Characteristics-DT<sub>r2</sub> (@ T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Voltage	V <sub>I(off)</sub>	V <sub>CC</sub> = -5V, I <sub>o</sub> = -100μA	-0.3	-	-	V
	V <sub>I(on)</sub>	V <sub>O</sub> = -0.3V, I <sub>o</sub> = -1mA	-	-	-1.4	V
Output Voltage	V <sub>O(on)</sub>	I <sub>o</sub> = -5mA, I <sub>I</sub> = -0.25mA	-	-	-0.3	V
Input Current	I <sub>I</sub>	V <sub>I</sub> = -5V	-	-	-0.88	mA
Output Current	I <sub>O(off)</sub>	V <sub>CC</sub> = -50V, V <sub>I</sub> = 0V	-	-	-0.5	μA
DC Current Gain	G <sub>I</sub>	V <sub>O</sub> = -5V, I <sub>o</sub> = -5mA	68	-	-	-
Input Resistor	R <sub>1</sub>		7	10	13	kΩ
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>		3.7	4.7	5.7	-
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = -10V, I <sub>E</sub> = 5mA, f = 100MHz	-	250	-	MHz

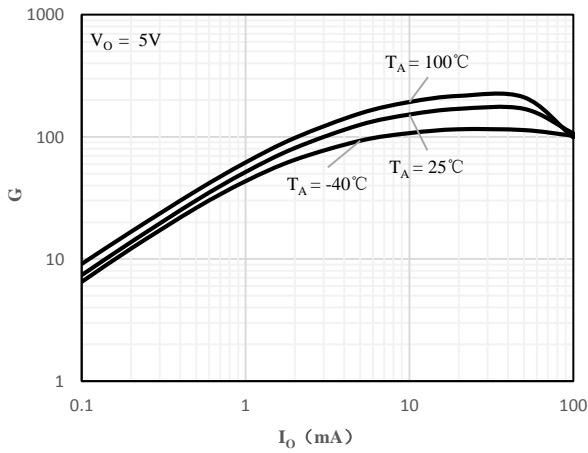
### Ratings and Characteristics Curves-DT<sub>r1</sub> (@ T<sub>A</sub> = 25°C unless otherwise specified)



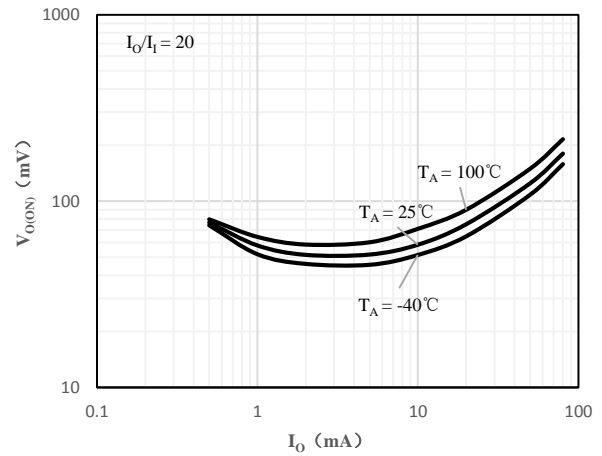
**Fig 1 Input Voltage vs Output Current**



**Fig 2 Output Current vs Input Voltage**

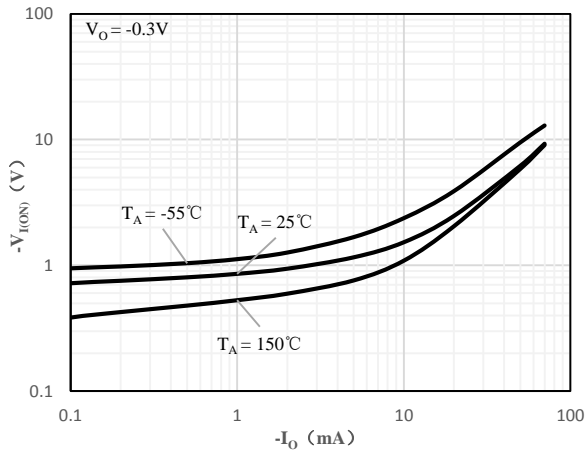


**Fig 3 DC Current Gain vs Output Current**

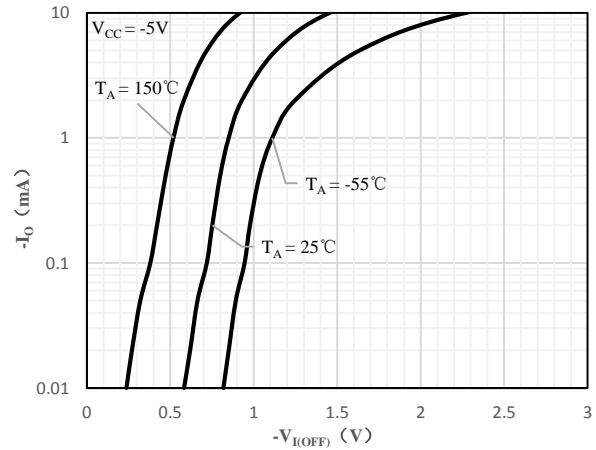


**Fig 4 Output Voltage vs Output Current**

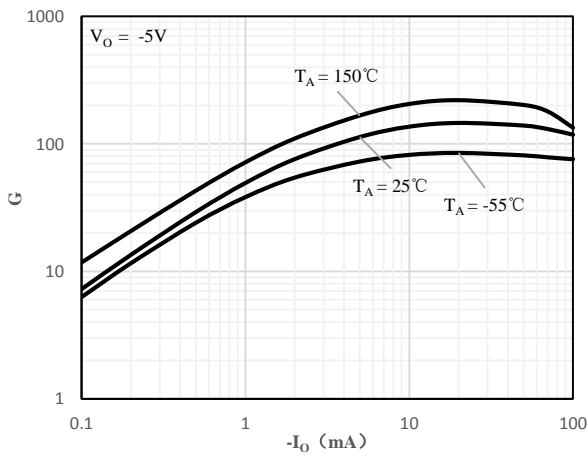
### Ratings and Characteristics Curves-DT<sub>r2</sub> (@ T<sub>A</sub> = 25°C unless otherwise specified)



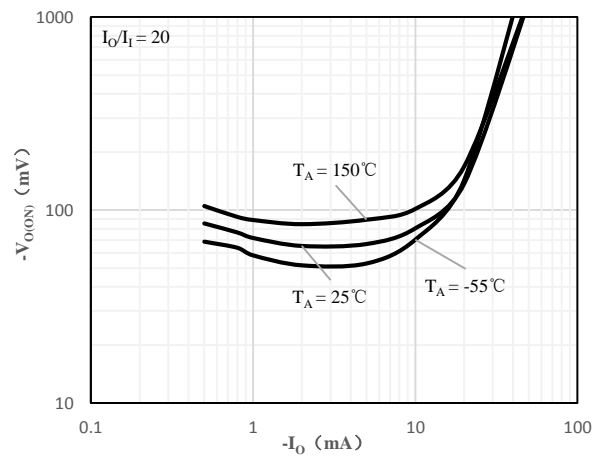
**Fig 1 Input Voltage vs Output Current**



**Fig 2 Output Current vs Input Voltage**



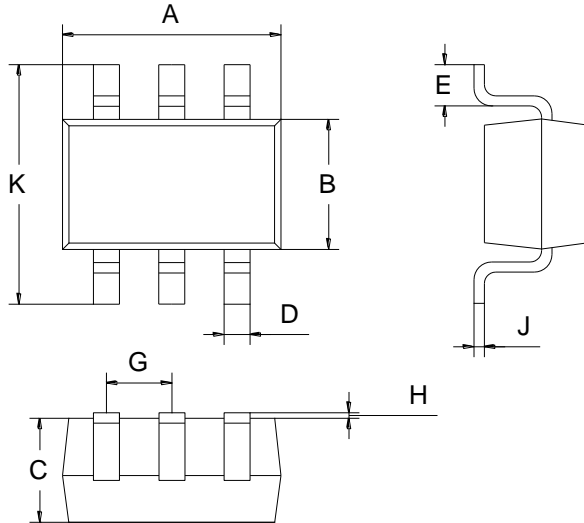
**Fig 3 DC Current Gain vs Output Current**



**Fig 4 Output Voltage vs Output Current**



### Package Outline Dimensions (Unit: mm)



SOT-363		
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)

#### SOT-363

