Digital Transistor
UMH9N

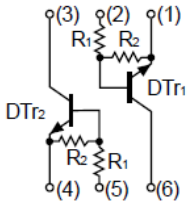
Features

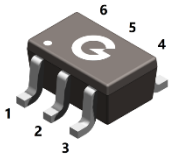
HF

- Two DTC114Y transistors are built-in a package
- Transistor elements are independent, eliminating interference
- Mounting cost and area can be cut in half
- RoHS compliant with Halogen-free

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





SOT-363

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
UMH9N	SOT-363	3000 pcs / Tape & Reel	H9

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

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage	50	V
V_I	Input Voltage	40	V
I_O	Output Current	70	mA
$I_{C(Max)}$	Collector Current	100	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	150	mW
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	413	°C/W
Thermal Resistance Junction-to-Case *1	$R_{\theta JC}$	257	°C/W
Thermal Resistance Junction-to-Lead *1	$R_{\theta JL}$	315	°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 (@ 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	0.3	-	-	V
Input Voltage	$V_{I(ON)}$	V_O = 0.3V, I_O = 1mA	-	-	1.4	V
Output Voltage	$V_{O(on)}$	I_o = 5mA, I_I = 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 Resistor	R_1		7	10	13	kΩ
Resistance ratio	R_2/R_1		3.7	4.7	5.7	-
Gain-Bandwidth Product	f_T	V_{CE} = 10V, I_E = -5mA f = 100MHz	-	250	-	MHz

Ratings and Characteristic Curves (@ T_A = 25°C unless otherwise specified)

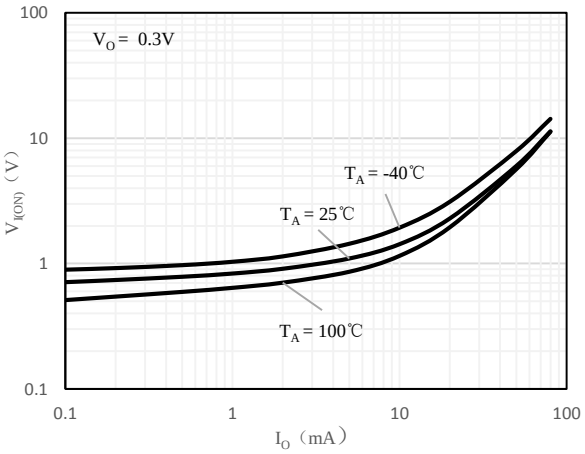


Fig 1 Input Voltage vs Output Current

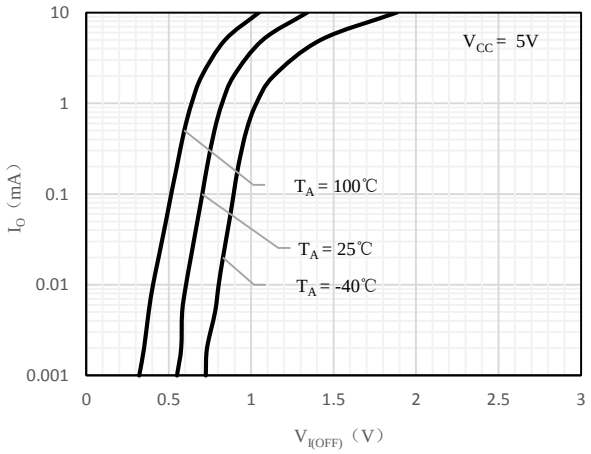


Fig 2 Output Current vs Input Voltage

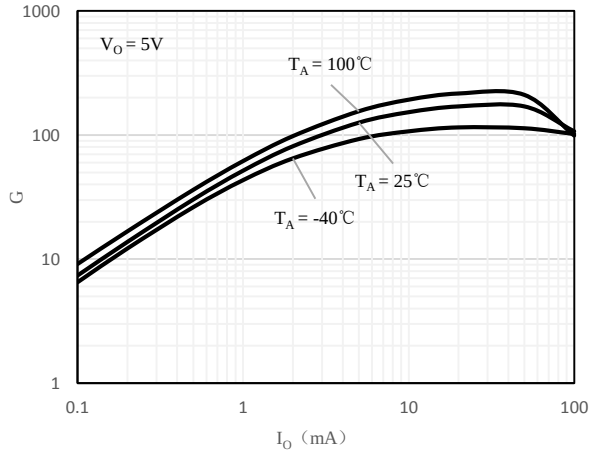


Fig 3 DC Current Gain vs Output Current

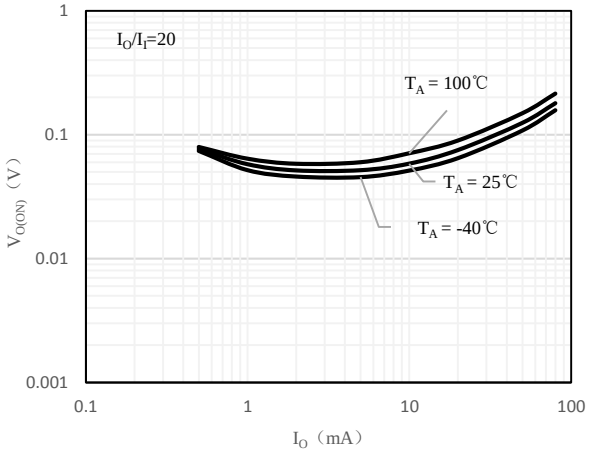
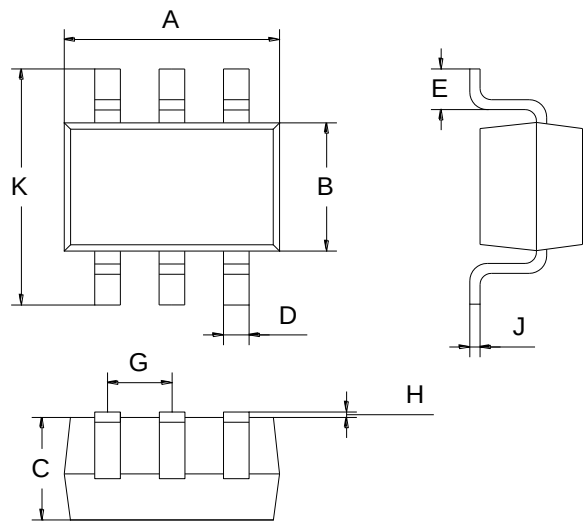


Fig 4 Output Voltage vs Output Current

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

