Dual Digital Transistors

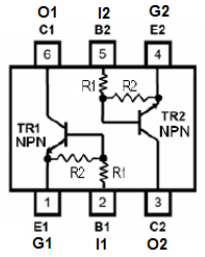
TUMH11N

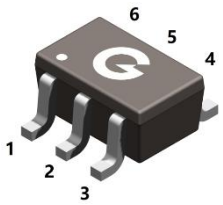
Features

- Two DTC114E transistors are built-in a package
- Epitaxial planar die construction
- Built-in biasing resistors (R_1: 10kΩ, R_2: 10kΩ)
- Also available in lead free version
- Halogen free
- Qualified to AEC-Q101 standards for high reliability

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
TUMH11N	SOT-363	3000 pcs / Tape & Reel	H11

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

Parameter	Symbol	Value		Unit
		TR1	TR2	
Supply Voltage	V_{CC}	50	50	V
Input Voltage	V_{IN}	-10 to +40	-10 to +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
Operating Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Electrical Characteristics-TR1 and TR2 (@ 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
	$V_{I(on)}$	V_O = 0.3V, I_O = 10mA	-	-	3	V
Output Voltage	$V_{O(on)}$	Io = 10mA, I_I = 0.5mA	-	0.1	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		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-TR1 and TR2 (@ T_A = 25°C unless otherwise specified)

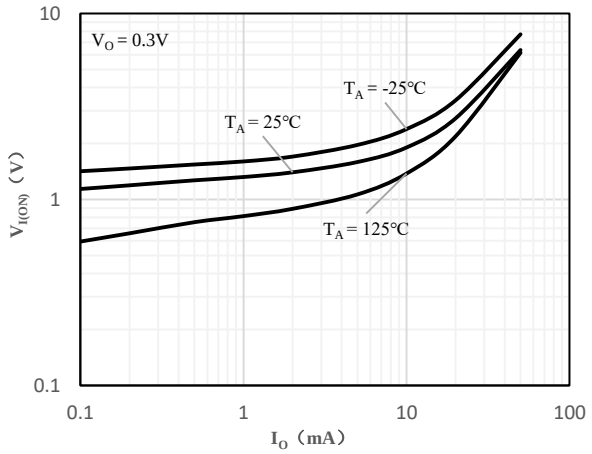


Fig 1 Input Voltage vs Output Current

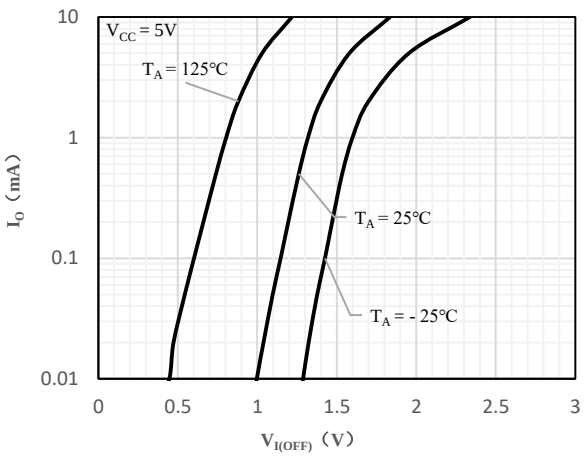


Fig 2 Output Current vs Input Voltage

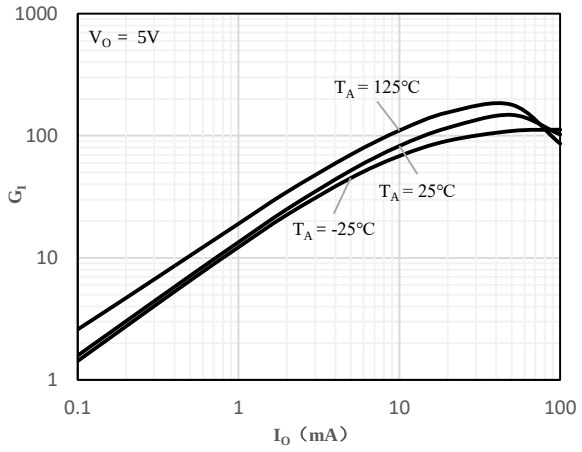


Fig 3 DC Current Gain vs Output Current

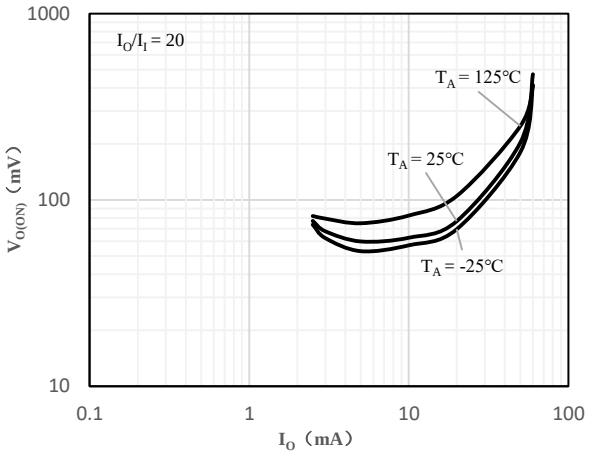
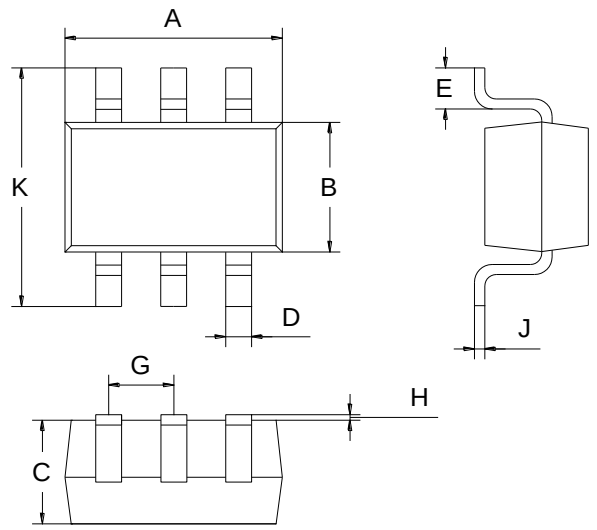


Fig 4 Output Voltage vs Output Current

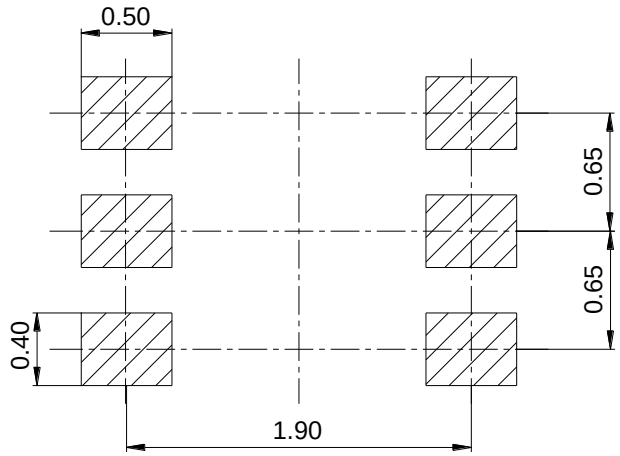
Package Outline Dimensions (Unit: mm)



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



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