

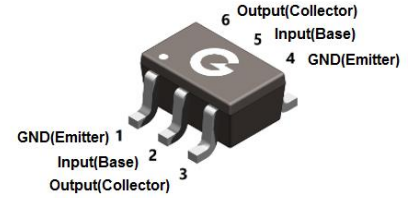
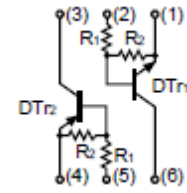
Features

- 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
- Halogen free
- Qualified to AEC-Q101 standards for high reliability

HF

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
TUMD3N	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 _{θJA}	495	°C/W
Thermal Resistance Junction-to-Case ^{*1}	R _{θJC}	296	°C/W
Thermal Resistance Junction-to-Lead ^{*1}	R _{θJL}	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 (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(\text{OFF})}$	$V_{CC} = 5\text{V}, I_O = 100\mu\text{A}$	0.5	-	-	V
Input Voltage	$V_{I(\text{ON})}$	$V_O = 0.3\text{V}, I_O = 10\text{mA}$	-	-	3	V
Output Voltage	$V_{O(\text{on})}$	$I_O = 10\text{mA}, I_I = 0.5\text{mA}$	-	-	0.3	V
Input Current	I_I	$V_I = 5\text{V}$	-	-	0.88	mA
Output Current	$I_{O(\text{off})}$	$V_{CC} = 50\text{V}, V_I = 0\text{V}$	-	-	0.5	μA
DC Current Gain	G_I	$V_O = 5\text{V}, I_O = 5\text{mA}$	30	-	-	-
Input Resistor	$R_1(R_2)$		7	10	13	$\text{k}\Omega$
Resistance ratio	R_2/R_1		0.8	1	1.2	-
Gain-Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_E = 5\text{mA}$ $f = 100\text{MHz}$	-	250	-	MHz

Electrical Characteristics-DTr2 (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(\text{OFF})}$	$V_{CC} = -5\text{V}, I_O = -100\mu\text{A}$	-0.5	-	-	V
Input Voltage	$V_{I(\text{ON})}$	$V_O = -0.3\text{V}, I_O = -10\text{mA}$	-	-	-3	V
Output Voltage	$V_{O(\text{on})}$	$I_O = -10\text{mA}, I_I = -0.5\text{mA}$	-	-	-0.3	V
Input Current	I_I	$V_I = -5\text{V}$	-	-	-0.88	mA
Output Current	$I_{O(\text{off})}$	$V_{CC} = -50\text{V}, V_I = 0\text{V}$	-	-	-0.5	μA
DC Current Gain	G_I	$V_O = -5\text{V}, I_O = -5\text{mA}$	30	-	-	-
Input Resistor	$R_1(R_2)$		7	10	13	$\text{k}\Omega$
Resistance ratio	R_2/R_1		0.8	1	1.2	-
Gain-Bandwidth Product	f_T	$V_{CE} = -10\text{V}, I_E = -5\text{mA}$ $f = 100\text{MHz}$	-	250	-	MHz

Ratings and Characteristics Curves-DTr1 (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

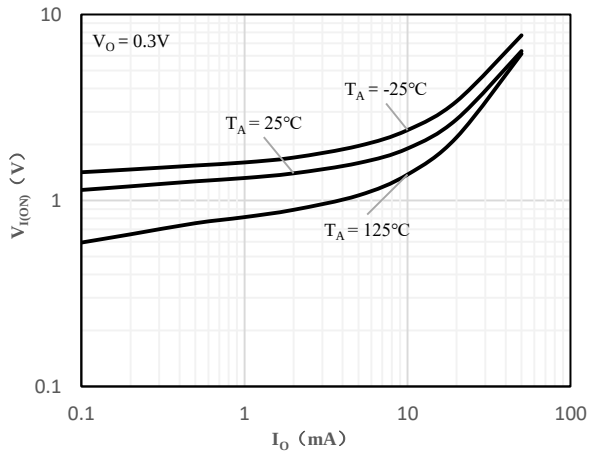


Fig 1 Input Voltage vs Output Current

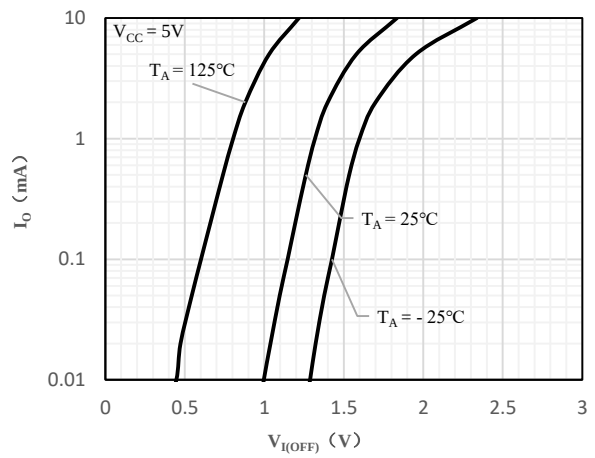


Fig 2 Output Current vs Input Voltage

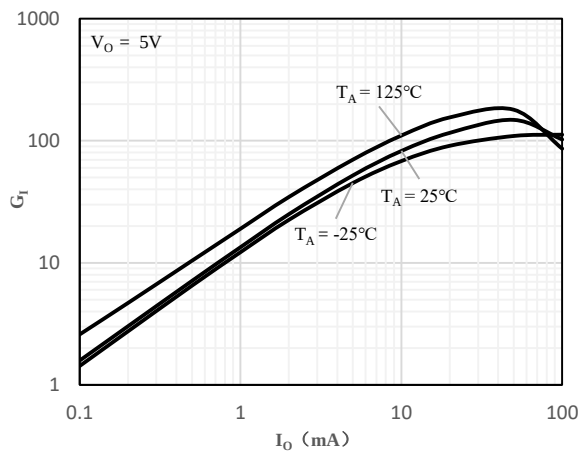


Fig 3 DC Current Gain vs Output Current

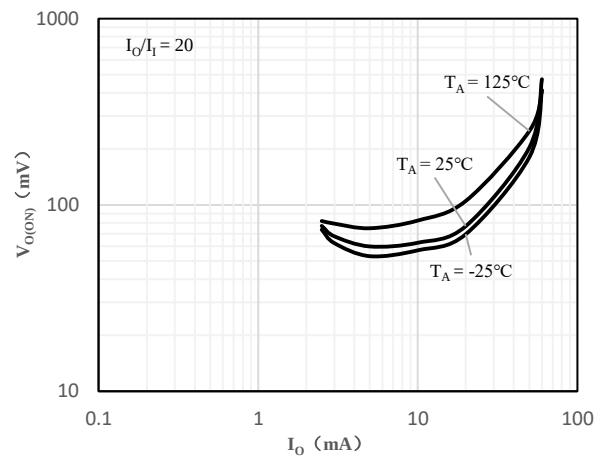


Fig 4 Output Voltage vs Output Current

Ratings and Characteristics Curves- DTr2 (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

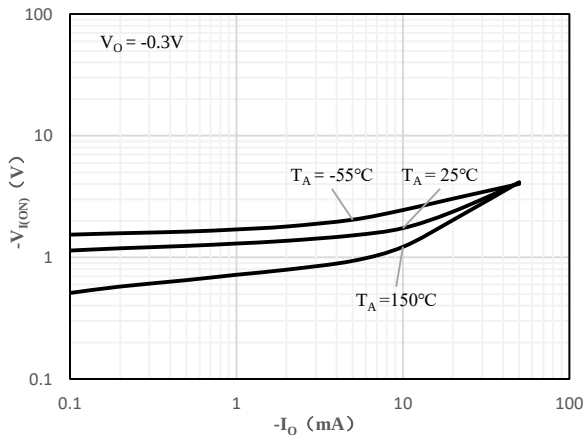


Fig 1 Input Voltage vs Output Current

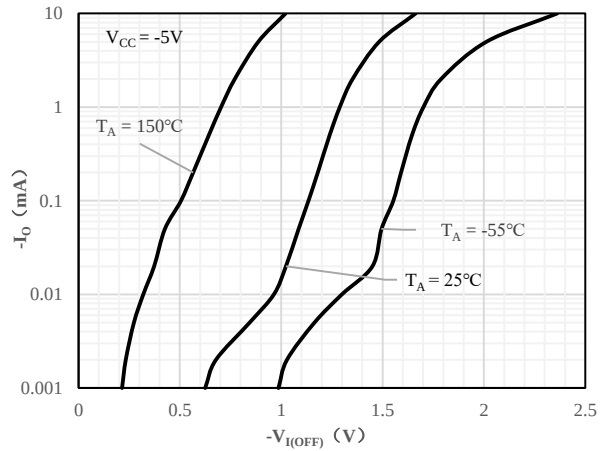


Fig 2 Output Current vs Input Voltage

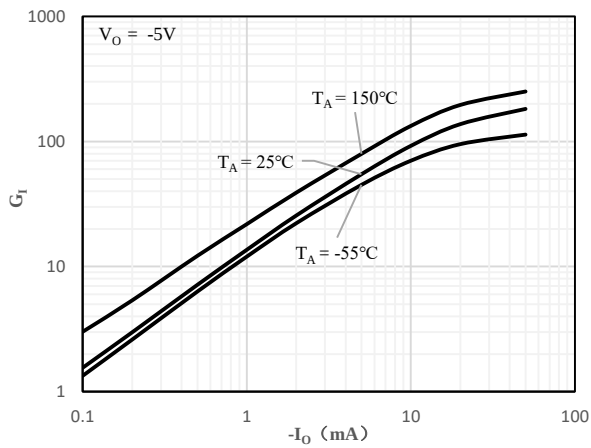


Fig 3 DC Current Gain vs Output Current

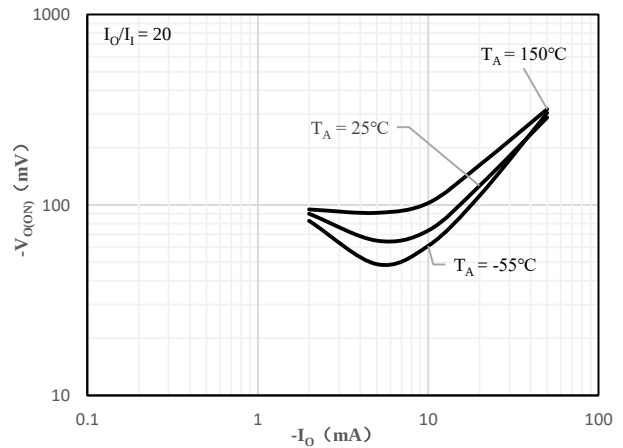
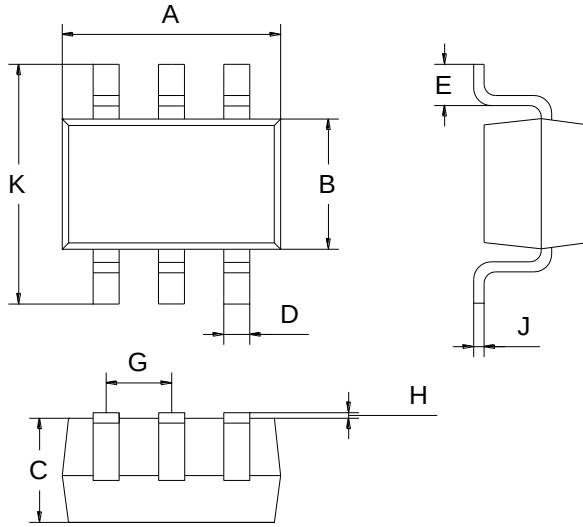


Fig 4 Output Voltage vs Output Current

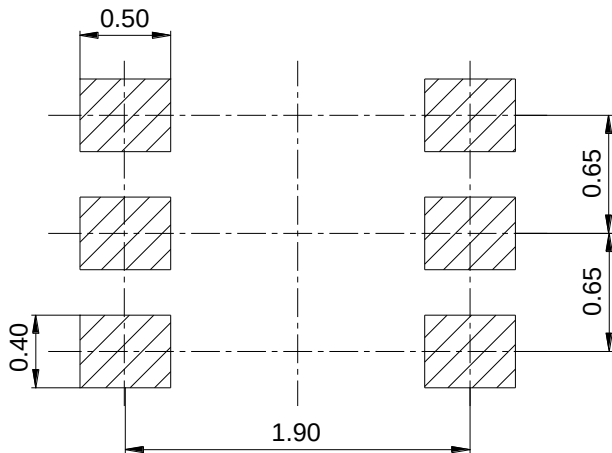
Package Outline Dimensions (Unit: mm)



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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