

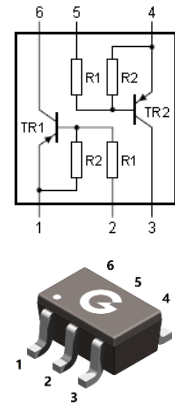
Features

- Two DTA123E transistors are built-in a package
- Transistor elements are independent, eliminating interference
- Reduces component count
- 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
TUMB20N	SOT-363	3000 pcs / Tape & Reel	B20

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

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	-50	V
V _{CEO}	Collector-Emitter Voltage	-50	V
V _{EBO}	Emitter-Base Voltage	-10	V
V _I	Input Voltage	-12 to 10	V
I _O	Output Current	-100	mA
I _{C(Max)}	Peak Collector Current	-100	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ^{*1}	P _D	300	mW
Thermal Resistance Junction-to-Air ^{*1}	R _{θJA}	417	°C/W
Operating Junction Temperature Range	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

Note 1. Device mounted on an FR4 printed-circuit board, single-sided copper, tin-plated and standard footprint

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-base Cut-off Current	I _{CBO}	V _{CB} = -50V, I _E = 0	-	-	-100	nA
Collector-emitter Cut-off Current	I _{CEO}	V _{CE} = -30V, I _B = 0	-	-	-1	μA
Emitter-base Cut-off Current	I _{EBO}	V _{EB} = -5V, I _C = 0	-	-	-3.8	mA
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 = -20mA	-3	-	-	V
DC Current Gain	h _{FE}	I _C = -20mA, V _{CE} = -5V	30	-	-	-
Collector-Emitter saturation voltage	V _{CE(sat)}	I _C = -10mA, I _B = -0.5mA	-	-	-300	mV
Input Resistor	R ₁		1.54	2.2	2.86	kΩ
Resistance ratio	R ₂ /R ₁		0.8	1	1.2	-

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

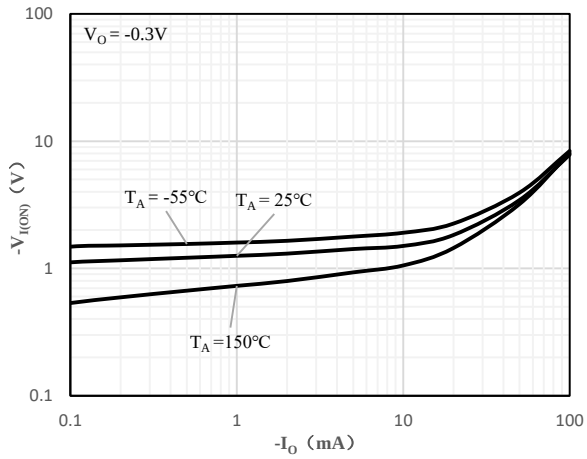


Fig 1 Input Voltage vs Output Current

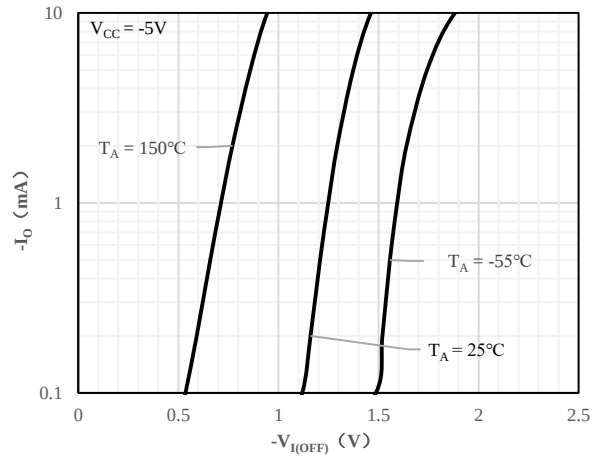


Fig 2 Output Current vs Input Voltage

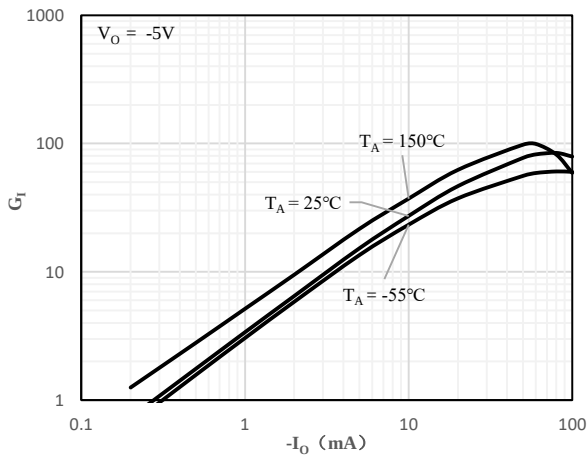


Fig 3 DC Current Gain vs Output Current

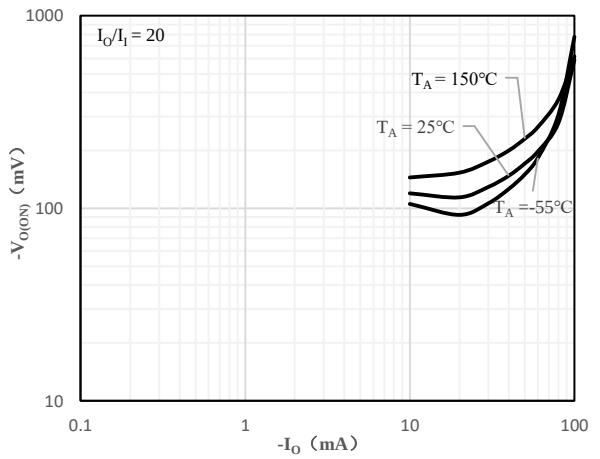
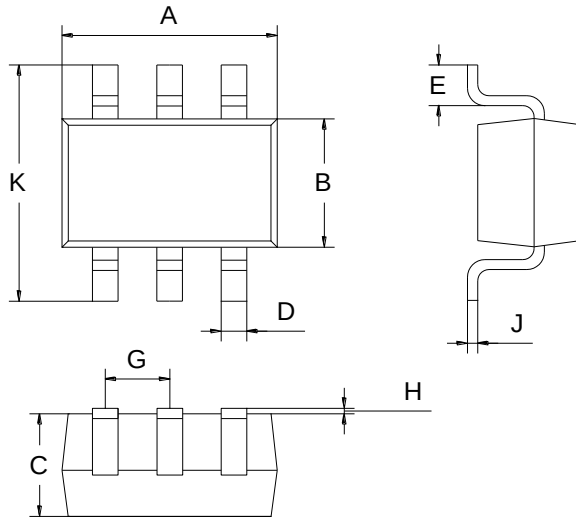


Fig 4 Output Voltage vs Output Current

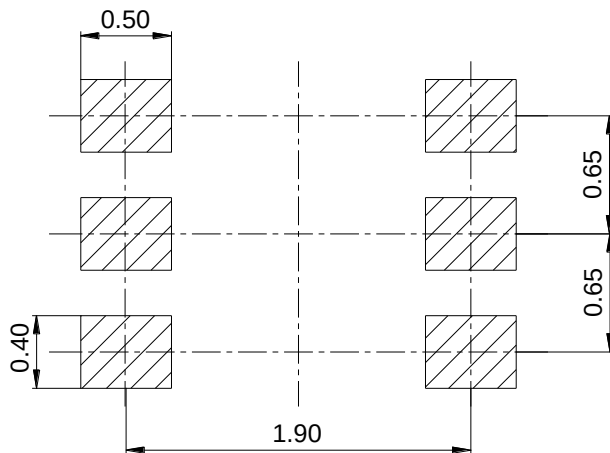
Package Outline Dimensions (Unit: mm)



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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