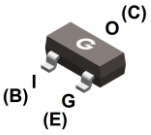
Digital Transistor

DTA123E Series

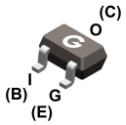
Features

- Epitaxial planar die construction
- Built-in biasing resistors (R_1: 2.2kΩ, R_2: 2.2kΩ)
- Also available in lead free version

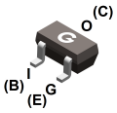
HF



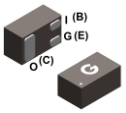
DTA123ECA
SOT-23



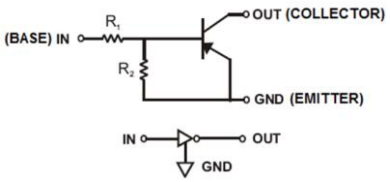
DTA123EUA
SOT-323



DTA123EE
SOT-523



DTA123EL
DFN1006-3



Mechanical Data

- Case: SOT-23, SOT-323, SOT-523, DFN1006-3
- 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
DTA123ECA	SOT-23	3000 pcs / Tape & Reel	12
DTA123EUA	SOT-323	3000 pcs / Tape & Reel	12
DTA123EE	SOT-523	3000 pcs / Tape & Reel	12
DTA123EL	DFN1006-3	10000 pcs / Tape & Reel	12

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

Parameter	Symbol	Value				Unit
		SOT-23	SOT-323	SOT-523	DFN1006-3	
Supply Voltage	V_{CC}	-50				V
Input Voltage	V_I	-12 to +10				V
Output Current	I_O	-100				mA
Collector Current	$I_{C(Max)}$	-100				mA
Power Dissipation	P_D	200	200	150	100	mW
Junction Temperature Range	T_J	-55 ~ +150				°C
Storage Temperature Range	T_{STG}	-55 ~ +150				°C

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	-0.5	-	-	V
Input Voltage	$V_{I(ON)}$	V_O = -0.3V, I_O = -20mA	-	-	-3	V
Output Voltage	$V_{O(on)}$	I_o = -10mA, I_I = -0.5mA	-	-	-0.3	V
Input Current	I_I	V_I = -5V	-	-	-3.8	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 = -20mA	20	-	-	-
Input Resistor	R_1		1.54	2.2	2.86	kΩ
Resistance ratio	R_2/R_1		0.8	1.0	1.2	-
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)

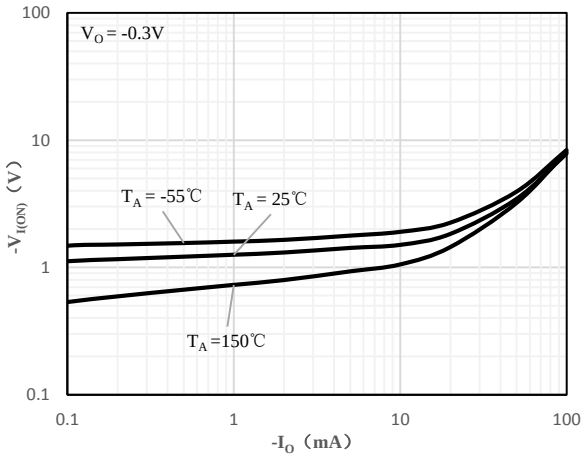


Fig 1 Input Voltage vs Output Current

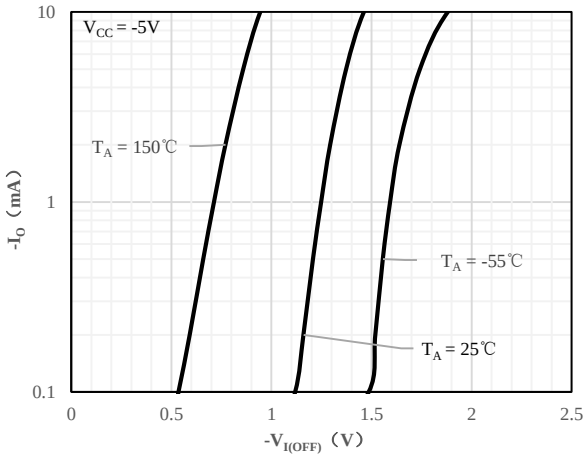


Fig 2 Output Current vs Input Voltage

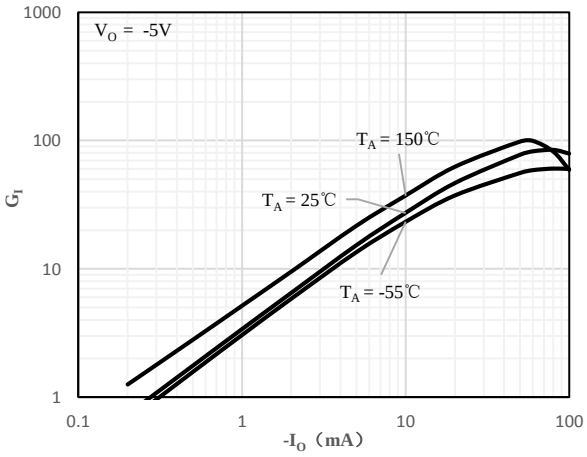


Fig 3 DC Current Gain vs Output Current

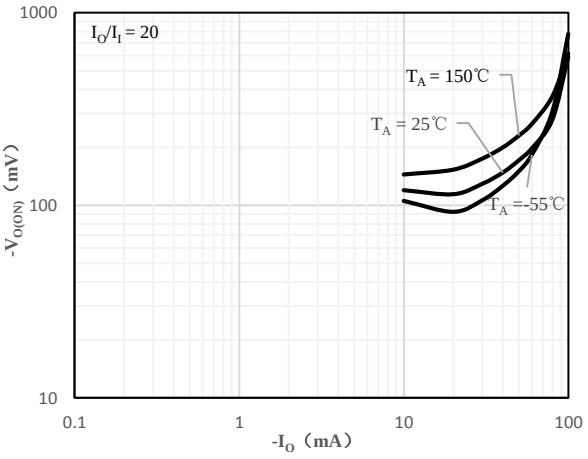
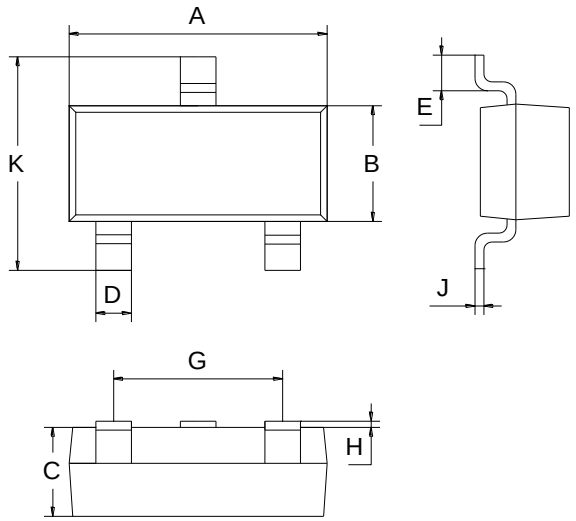
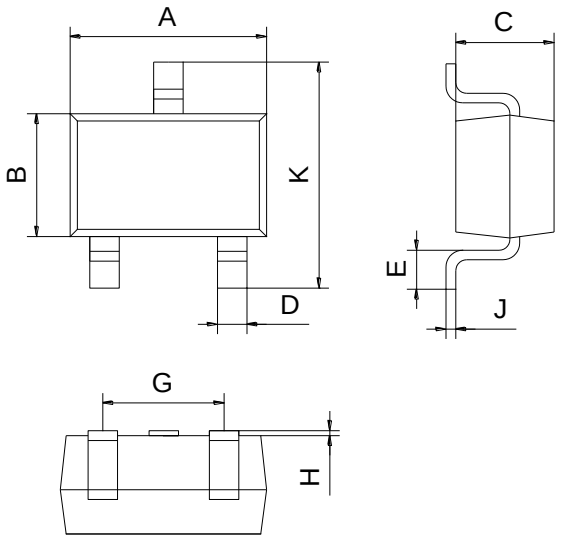


Fig 4 Output Voltage vs Output Current

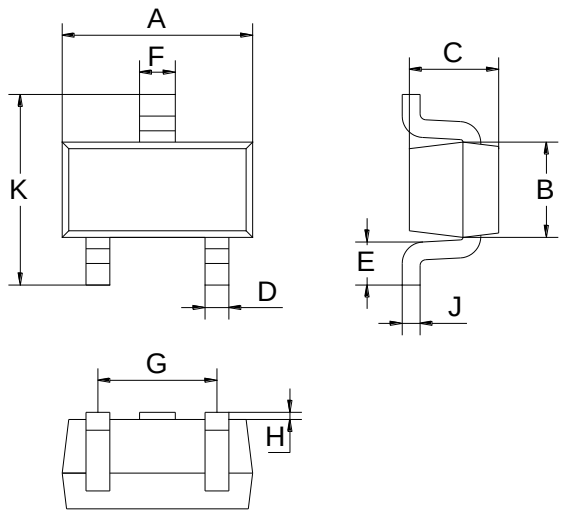
Package Outline Dimensions (Unit: mm)



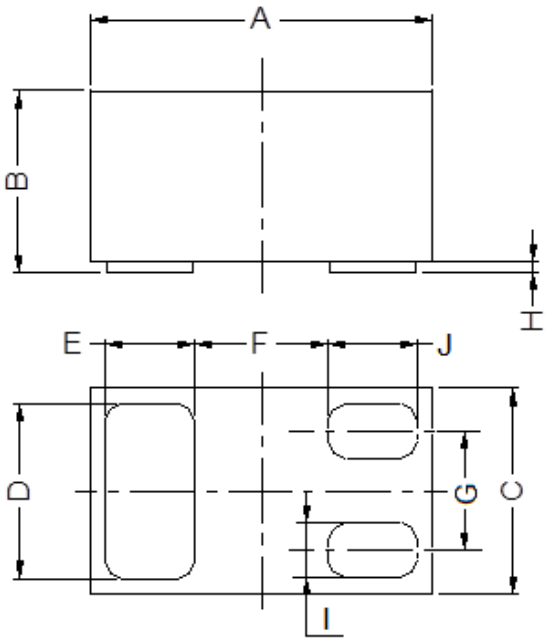
SOT-23		
Dimension	**Min.**	**Max.**
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60



SOT-323		
Dimension	**Min.**	**Max.**
A	2.00	2.20
B	1.15	1.35
C	0.90	1.10
D	0.15	0.35
E	0.25	0.40
G	1.20	1.40
H	0.02	0.10
J	0.05	0.15
K	2.20	2.40



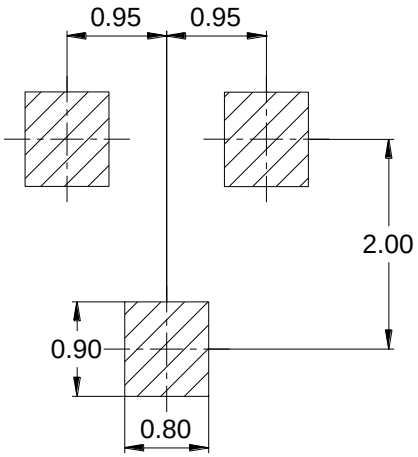
SOT-523		
Dimension	**Min.**	**Max.**
A	1.50	1.70
B	0.75	0.85
C	0.60	0.80
D	0.15	0.30
E	0.30	0.40
F	0.25	0.40
G	0.90	1.10
H	0.02	0.10
J	0.08	0.18
K	1.45	1.75



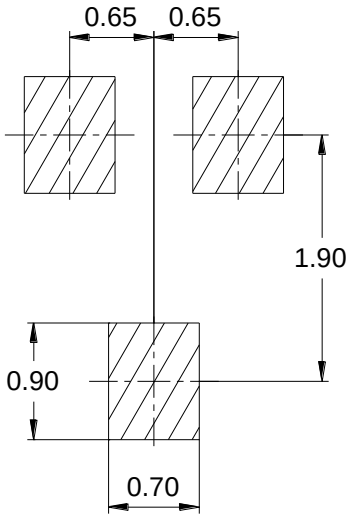
DFN1006-3			
Dimension	**Min.**	**Typ.**	**Max.**
A	0.95	1.00	1.075
B	0.47	0.50	0.53
C	0.55	0.60	0.675
D	0.45	0.50	0.55
E/J	0.20	0.25	0.30
F	-	0.40	-
G	-	0.35	-
H	0	0.03	0.05
I	0.10	0.15	0.20

Mounting Pad Layout (Unit: mm)

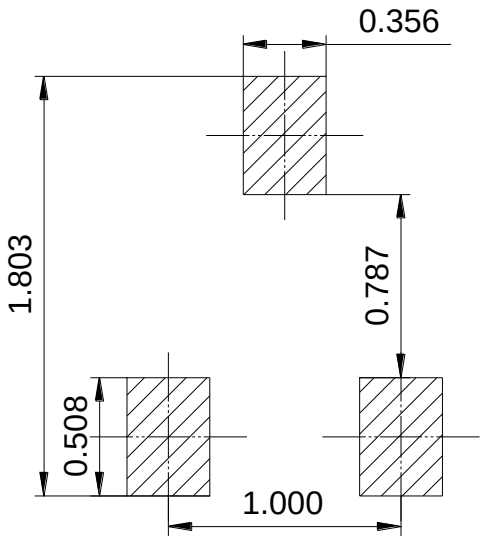
SOT-23



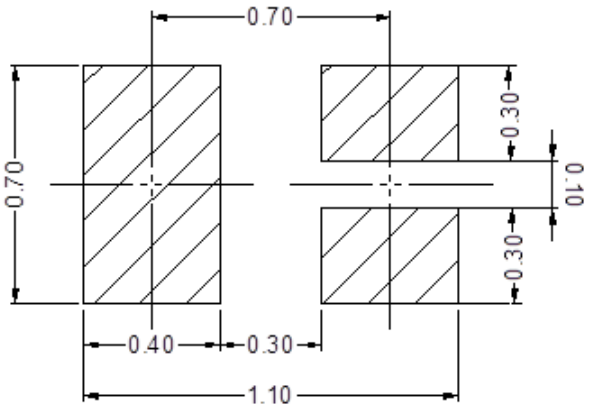
SOT-323



SOT-523



DFN1006-3



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