

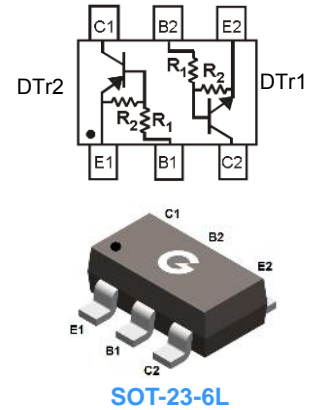
### Features

- Epitaxial planar die construction
- Built-in biasing resistors

HF

### Mechanical Data

- Case: SOT-23-6L
- 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
DCX124-6L	SOT-23-6L	3000 pcs / Tape & Reel	C17

### Maximum Ratings (@ T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Value		Unit
		DTr1	DTr2	
Supply Voltage	V <sub>CC</sub>	50	-50	V
Input Voltage	V <sub>I</sub>	-10 ~ +40	+10 ~ -40	V
Output Current	I <sub>O</sub>	30	-30	mA
Collector Current	I <sub>C(Max)</sub>	100	-100	mA

### Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation <sup>**1</sup>	P <sub>D</sub>	300	mW
Thermal Resistance Junction-to-Air <sup>**1</sup>	R <sub>θJA</sub>	417	°C/W
Operating Junction Temperature Range	T <sub>J</sub>	-55 ~ +150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ +150	°C

Note 1: Mounted on FR4 PC Board with recommended pad layout

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(OFF)}$	$V_{CC} = 5V, I_o = 100\mu\text{A}$	0.5	-	-	V
Input Voltage	$V_{I(ON)}$	$V_o = 0.3V, I_o = 5\text{mA}$	-	-	3	V
Output Voltage	$V_{O(on)}$	$I_o = 10\text{mA}, I_i = 0.5\text{mA}$	-	-	0.3	V
Input Current	$I_i$	$V_i = 5V$	-	-	0.36	mA
Output Current	$I_{O(off)}$	$V_{CC} = 50V, V_i = 0V$	-	-	0.5	$\mu\text{A}$
DC Current Gain	$G_i$	$V_o = 5V, I_o = 5\text{mA}$	80	-	-	-
Input Resistor	$R_1(R_2)$		15.4	22	28.6	k $\Omega$
Resistance ratio	$R_2/R_1$		0.8	1	1.2	-
Gain-Bandwidth Product	$f_T$	$V_{CE} = 10V, I_E = -5\text{mA}$ $f = 100\text{MHz}$	-	250	-	MHz

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(OFF)}$	$V_{CC} = -5V, I_o = -100\mu\text{A}$	-0.5	-	-	V
Input Voltage	$V_{I(ON)}$	$V_o = -0.3V, I_o = -5\text{mA}$	-	-	-3	V
Output Voltage	$V_{O(on)}$	$I_o = -10\text{mA}, I_i = -0.5\text{mA}$	-	-	-0.3	V
Input Current	$I_i$	$V_i = -5V$	-	-	-0.36	mA
Output Current	$I_{O(off)}$	$V_{CC} = -50V, V_i = 0V$	-	-	-0.5	$\mu\text{A}$
DC Current Gain	$G_i$	$V_o = -5V, I_o = -5\text{mA}$	80	-	-	-
Input Resistor	$R_1(R_2)$		15.4	22	28.6	k $\Omega$
Resistance ratio	$R_2/R_1$		0.8	1	1.2	-
Gain-Bandwidth Product	$f_T$	$V_{CE} = -10V, I_E = 5\text{mA}$ $f = 100\text{MHz}$	-	250	-	MHz

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

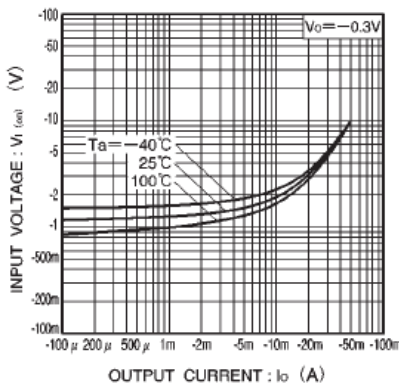


Fig.1 Input voltage vs. output current (ON characteristics)

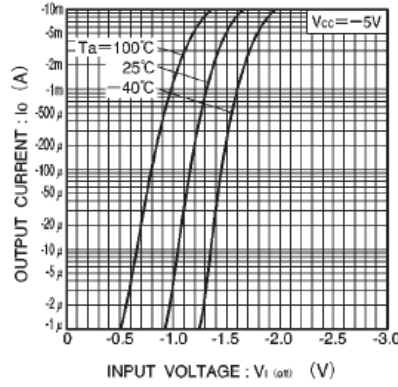


Fig.2 Output current vs. input voltage (OFF characteristics)

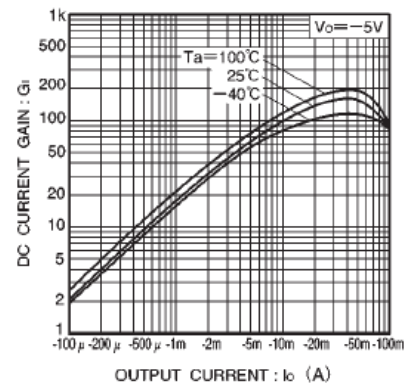


Fig.3 DC current gain vs. output current

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

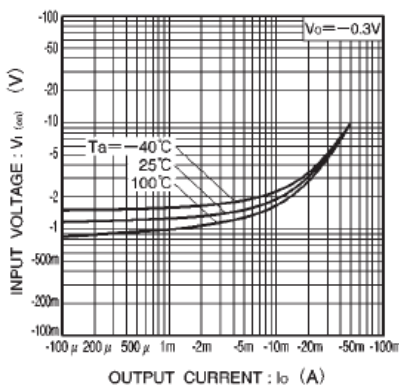


Fig.1 Input voltage vs. output current (ON characteristics)

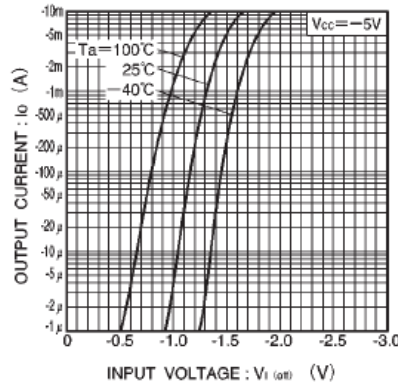


Fig.2 Output current vs. input voltage (OFF characteristics)

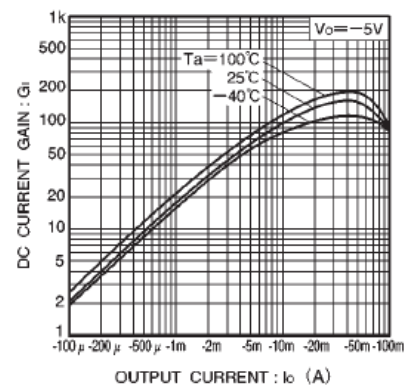
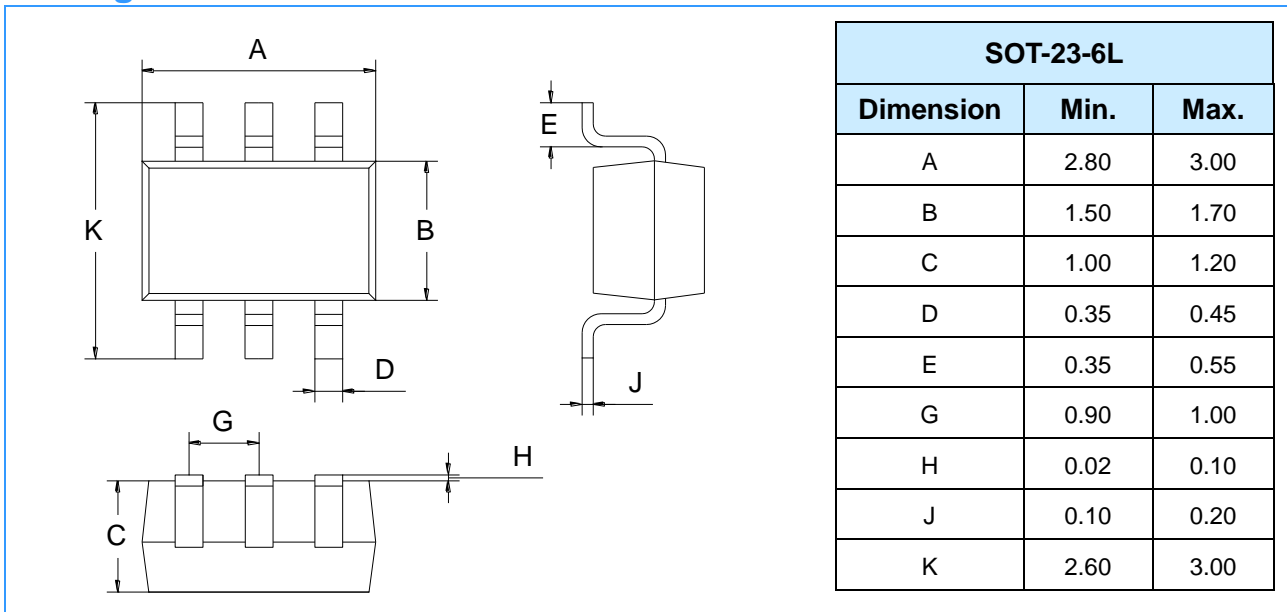
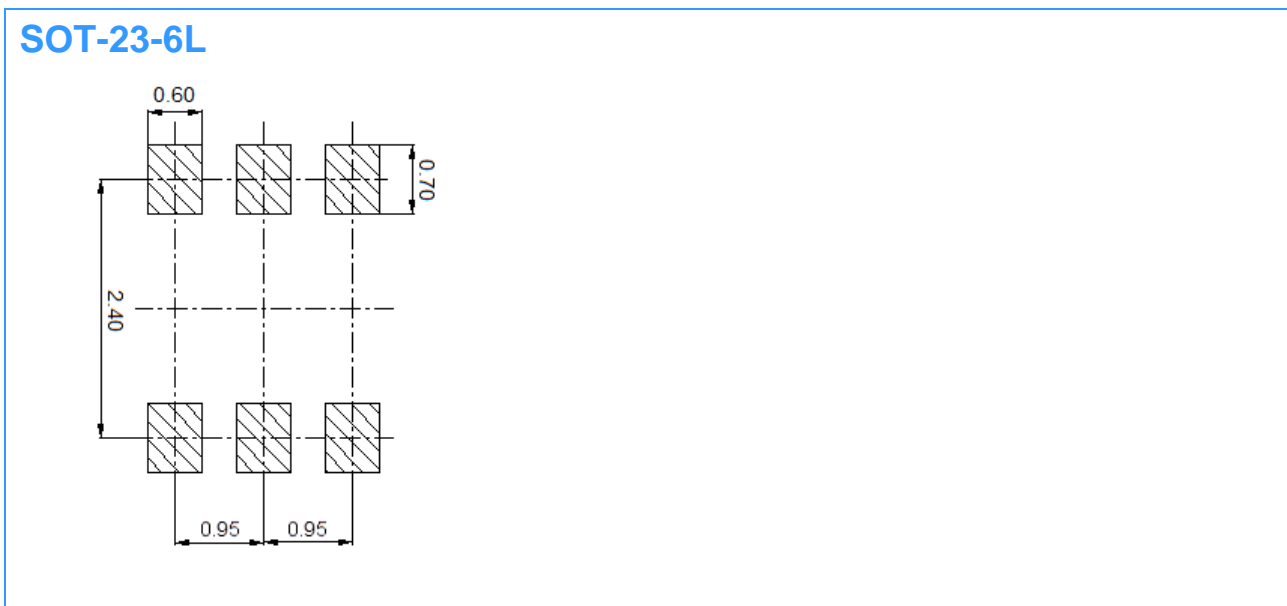


Fig.3 DC current gain vs. output current

**Package Outline Dimensions** (Unit: mm)



**Mounting Pad Layout** (Unit: mm)



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