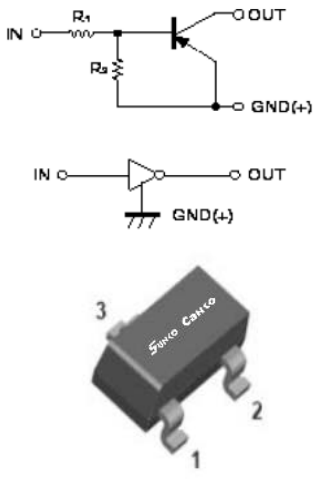
DTA123YCA

Digital Transistors (Built-in Resistors)



Features

- Moisture sensitivity level 1
- Halogen free and
- Surface mount package ideally suited for automatic Insertion

Application

- Signal amplification
- Switching circuit

Mechanical data

- **Package**: SOT-23
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ **Maximum Ratings** (T_a=25℃ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				52
Collector-base voltage	V_{CC}	V		-50
Collector-emitter voltage	V_{IN}	V		-12 to +5
Collector current	I_O	mA		-100
Power dissipation	P_D	mW		200
Operation junction temperature	T_J	℃		-55 to +150
Storage temperature	T_{STG}	℃		-55 to +150

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■ Electrical Characteristics (Ta=25℃ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Input voltage	$VI_{(off)}$	V	VCC=-5V,Ic=-100uA	-0.3		
	$VI_{(on)}$	V	V0=-0.3V,Ic=-20mA			-3
Output voltage	$Vo_{(on)}$	V	Io /Ii =-10mA/-0.5 mA			-0.3
Input current	I_I	mA	V_I=5V			-3.8
Output current	$I_{O(off)}$	uA	V_{CC}=-50V, V_I=0			-0.5
DC current gain	GI		Vo=-5V, Io =-10mA	33		
Input resistance	R_1	kΩ		1.54	2.2	2.86
Resistance ratio	R_2/R_1			3.6	4.5	5.5
Transition frequency	fT	MHz	Vo=-10V,I_O=-5mA,f=100MHz		250	

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{\theta J-A}$(1)	℃/W	625
Thermal resistance, junction-to-case	$R_{\theta J-C}$(1)	℃/W	500

Note:

（1）Device mounted on PCB, single-sided copper，with standard footprint

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■Characteristics

Fig 1：Input Voltage (On) Characteristics

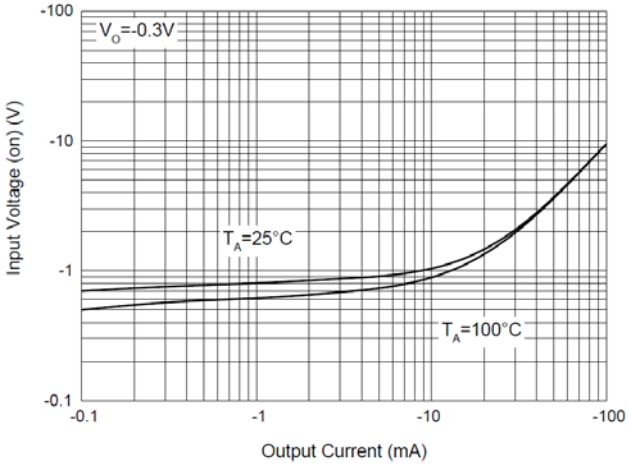


Fig 2：Input Voltage (Off) Characteristic

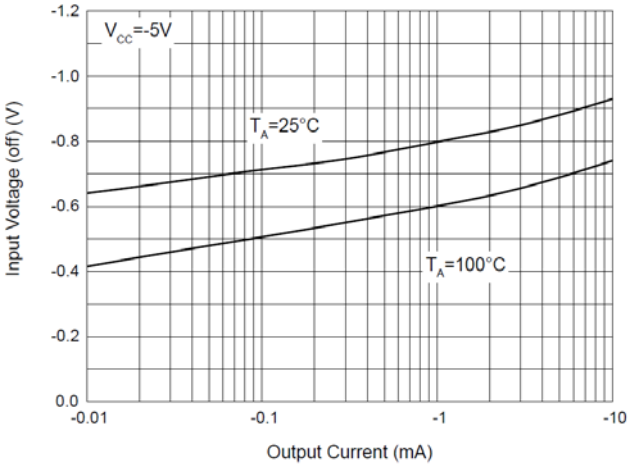


Fig 3：DC Current Gain Characteristics

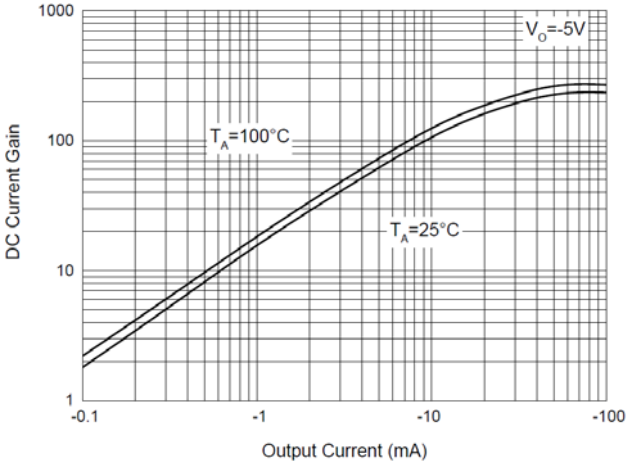


Fig 4：Output Voltage Characteristics

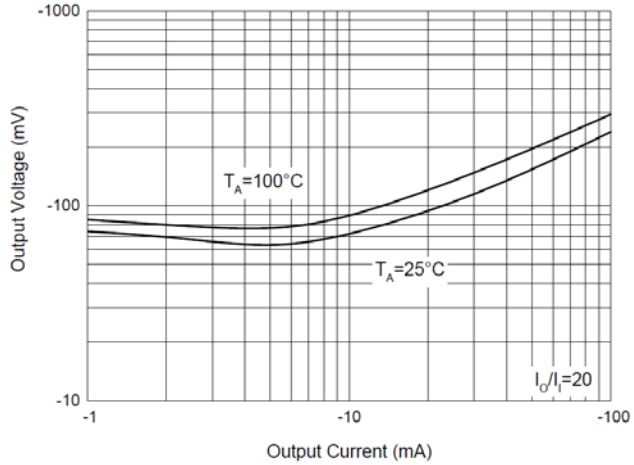
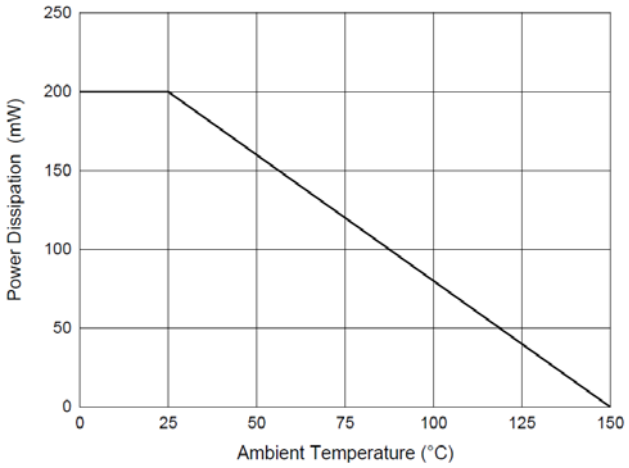


Fig 5：P_D-Ta Curve

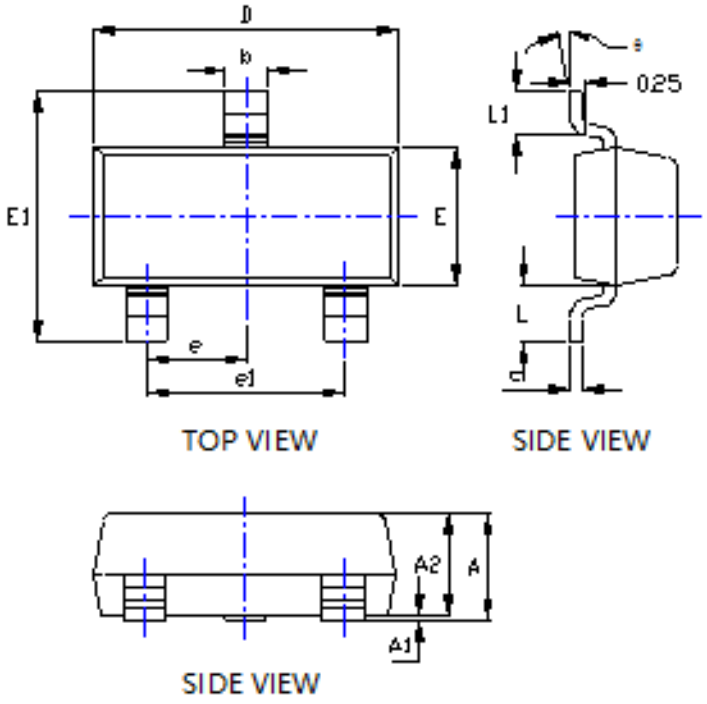


DTA123YCA

■Ordering Information

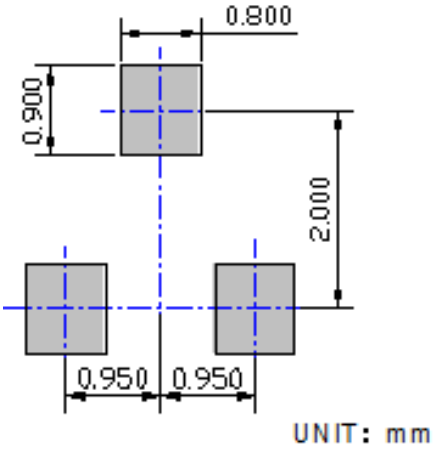
Prefered P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
DTA123ECA	F2	Approximate 0.008	3000	30000	120000	7" reel
DTA123ECA	F4	Approximate 0.008	10000	-	210000	13" reel

■ Outline Dimensions



DIMENSIONS				
SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.020	0.300	0.500
θ	0°	8°	0°	8°

■ Suggested Pad Layout



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