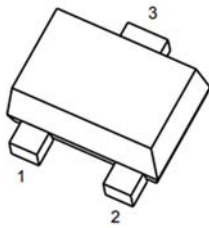
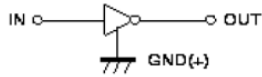
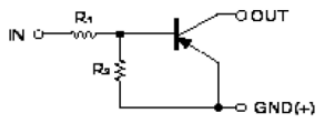


## PNP Digital Transistors (Built-in Resistors)



1. IN  
2. GND  
3. OUT

**SOT-723**

### Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for automatic insertion

### Application

- Signal amplification
- Switching circuit

### Mechanical data

- **Package:** SOT-723
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

### ■ Maximum Ratings ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				E13
Supply voltage	$V_{CC}$	V		-50
Input voltage	$V_{IN}$	V		-30 to +5
Output current	$I_O$	mA		-100
Power dissipation	$P_D$	mW		100
Junction temperature	$T_J$	$^\circ\text{C}$		-55 to +150
Storage temperature	$T_{STG}$	$^\circ\text{C}$		-55 to +150



## DTA143ZM

### ■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Input voltage	V <sub>I(off)</sub>	V	V <sub>CC</sub> =-5V, I <sub>c</sub> =-100uA	-0.5		
	V <sub>I(on)</sub>	V	V <sub>o</sub> =-0.3V, I <sub>c</sub> =-2mA			-1.3
Output voltage	V <sub>O(on)</sub>	V	I <sub>o</sub> / I <sub>i</sub> = -10mA / -0.5 mA			-0.3
Input current	I <sub>i</sub>	mA	V <sub>i</sub> = -5V			-1.8
Output current	I <sub>O(off)</sub>	uA	V <sub>CC</sub> = -50V, V <sub>i</sub> = 0			-0.5
DC current gain	G <sub>i</sub>		V <sub>o</sub> = -5V, I <sub>o</sub> = -5mA	80		
Input resistance	R <sub>1</sub>	kΩ		3.29	4.7	6.11
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>			8	10	12
Transition frequency	f <sub>T</sub>	MHz	V <sub>o</sub> = -10V, I <sub>o</sub> = -5mA, f = 100MHz		250	

### ■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R <sub>θJ-A</sub> <sup>(1)</sup>	°C/W	1250
Thermal resistance, junction-to-case	R <sub>θJ-C</sub> <sup>(1)</sup>	°C/W	1000

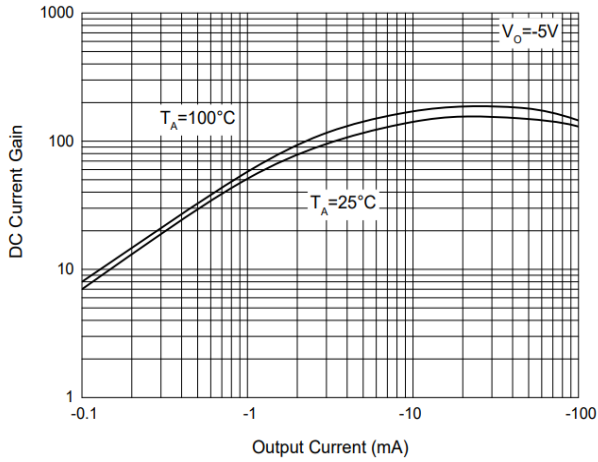
#### Note:

(1) Thermal resistance from junction to ambient and from junction to case mounted on P.C.B. with 25.4mm\*25.4mm copper pad areas

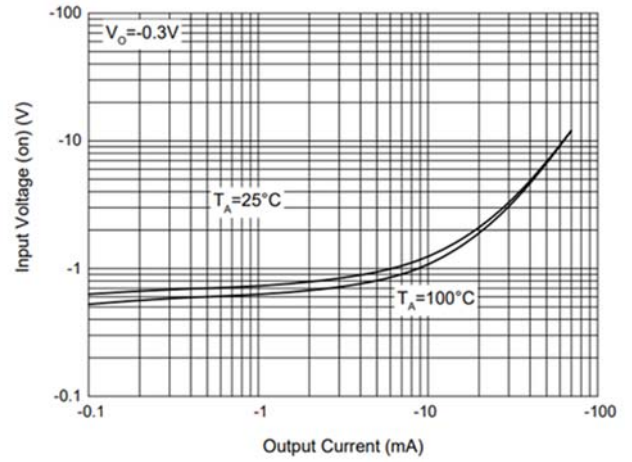


## ■ Characteristics

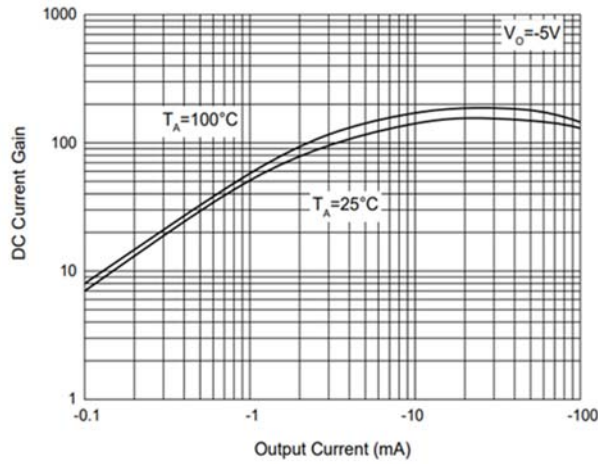
### Fig 1: DC Current Gain Characteristics



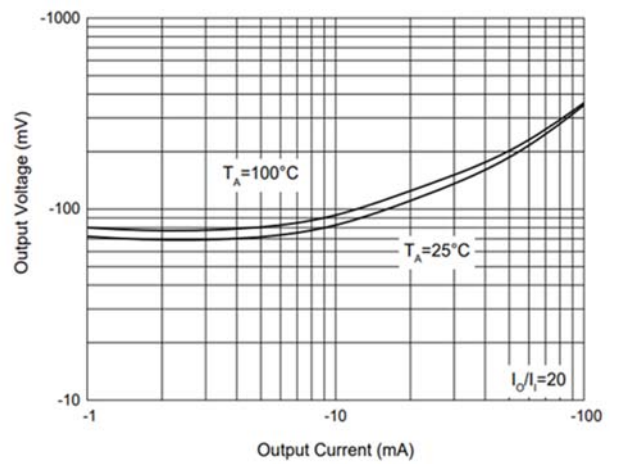
### Fig 2: Input Voltage (On) Characteristics



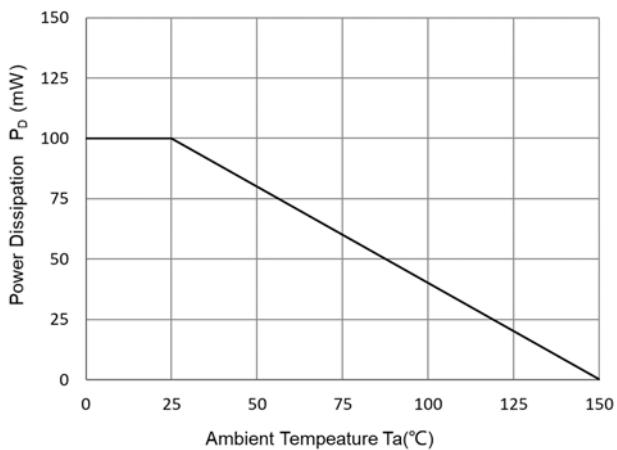
### Fig 3: Input Voltage (Off) Characteristic



### Fig 4: Output Voltage Characteristics



### Fig 6: P<sub>D</sub>-T<sub>a</sub> Curve



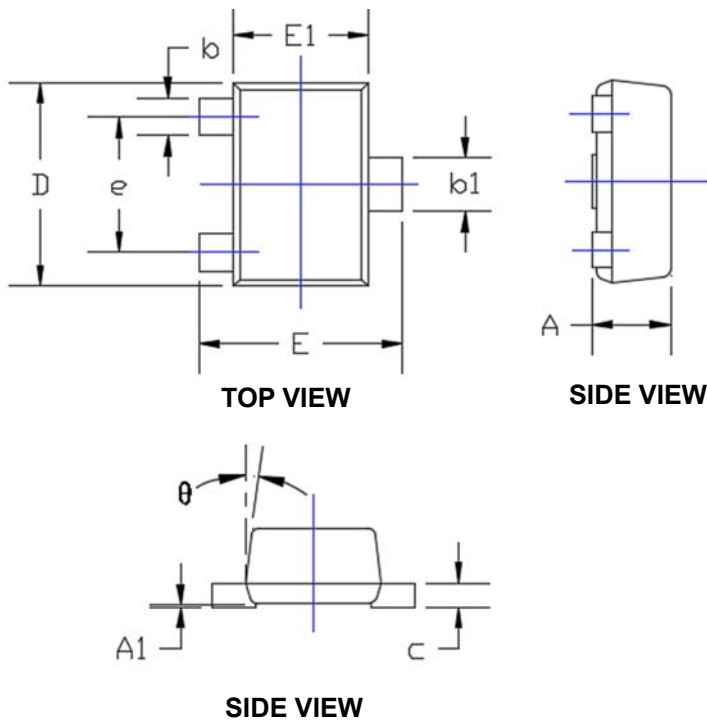


# DTA143ZM

## ■ Ordering Information

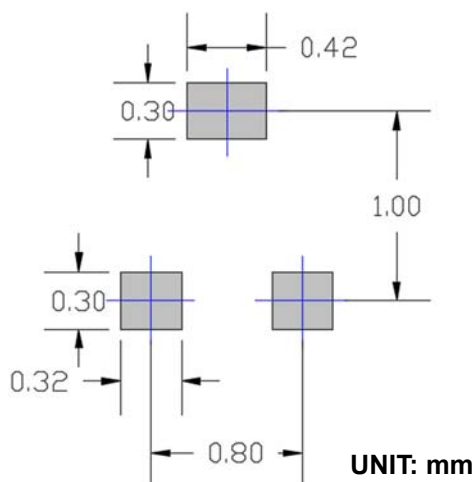
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
DTA143ZM	F2	Approximate 0.0013	8000	80000	320000	7" reel

## ■ Outline Dimensions



DIMENSIONS				
SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.017	0.022	0.430	0.550
A1	0.000	0.002	0.000	0.050
b	0.007	0.011	0.170	0.270
b1	0.011	0.015	0.270	0.370
c	0.003	0.008	0.080	0.200
D	0.045	0.049	1.150	1.250
E	0.045	0.049	1.150	1.250
E1	0.030	0.033	0.750	0.850
e	0.031TYP.		0.800TYP.	
$\theta$	7°REF.		7°REF.	

## ■ Suggested Pad Layout





## DTA143ZM

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