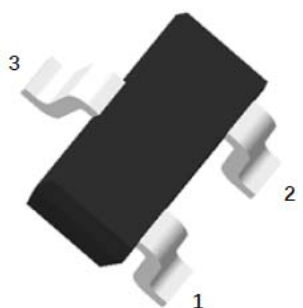
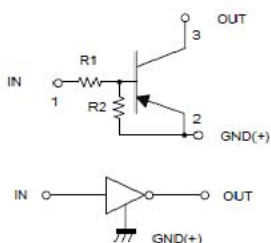


PNP Digital Transistors (Built-in Resistors)



1: IN
2: GND
3: OUT



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-523
- **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				54
Supply voltage	V_{CC}	V		-50
Input voltage	V_{IN}	V		-40 to +6
Output current	I_o	mA		-100
Power dissipation	P_D	mW		150
Operation junction temperature	T_J	$^{\circ}\text{C}$		-55 to +150
Storage temperature	T_{STG}	$^{\circ}\text{C}$		-55 to +150



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■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Input voltage	V _{I(off)}	V	V _{CC} =-5V, I _o =-100uA	-0.3		
Collector-emitter breakdown voltage	V _{I(on)}	V	V _o =-0.3V, I _o =-1mA			-1.4
Output voltage	V _{o(on)}	V	I _o /I _i =-5mA/-0.25 mA			-0.3
Input current	I _i	mA	V _I =-5V			-0.88
Output current	I _{o(off)}	uA	V _{CC} =-50V, V _i =0			-0.5
DC current gain	G ₁		V _o =-5V, I _o =-5mA	68		
Input resistance	R ₁	kΩ		7	10	13
Resistance ratio	R ₂ /R ₁			3.7	4.7	5.7
Transition frequency	f _T	MHz	V _o =-10V, I _o =-5mA		250	

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	833
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	666

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

■ Ordering Information

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
DTA114YE	F2	Approximate 0.0027	3000	30000	120000	7" reel



■ Characteristics

Fig 1: ON Characteristics

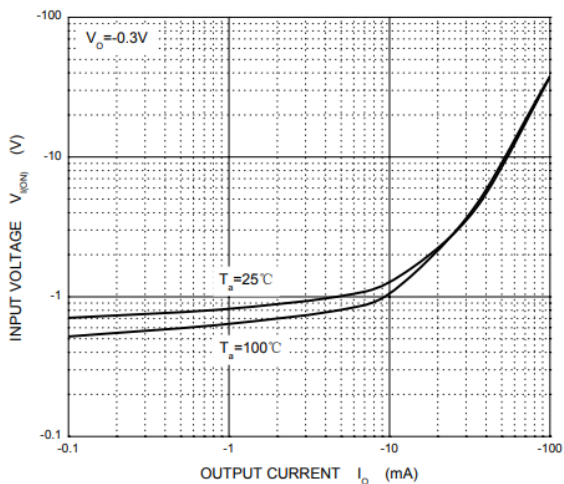


Fig 2: OFF Characteristics

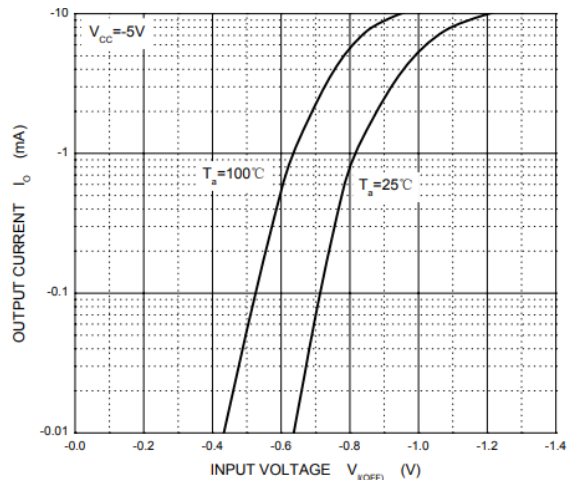


Fig 3: $V_{O(ON)} - I_O$

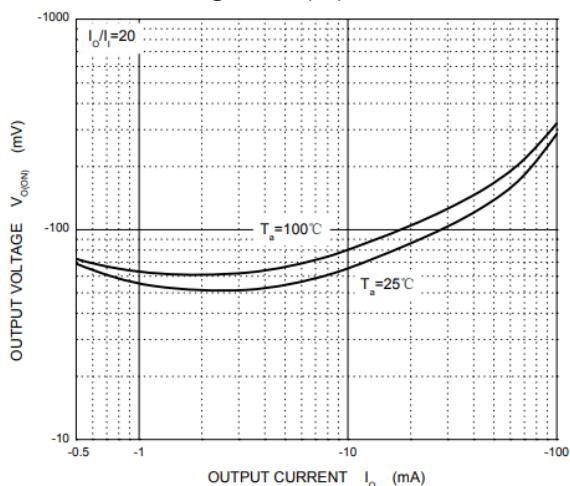


Fig 4: $G_i - I_O$

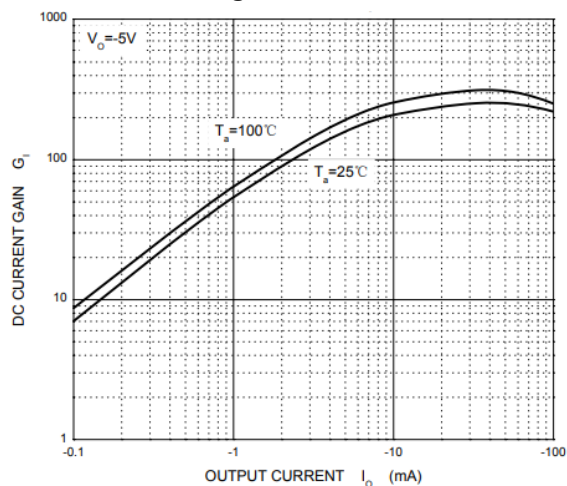
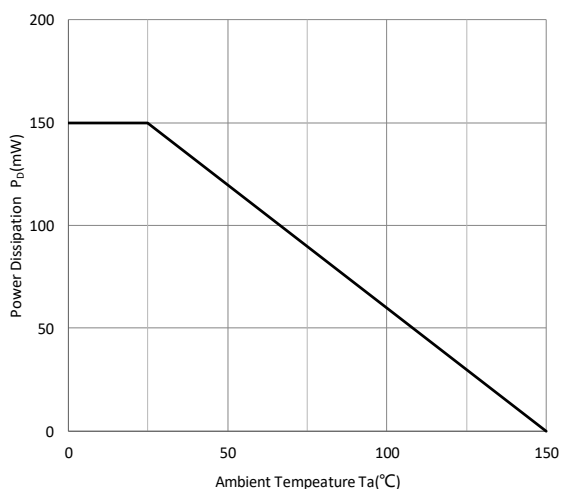


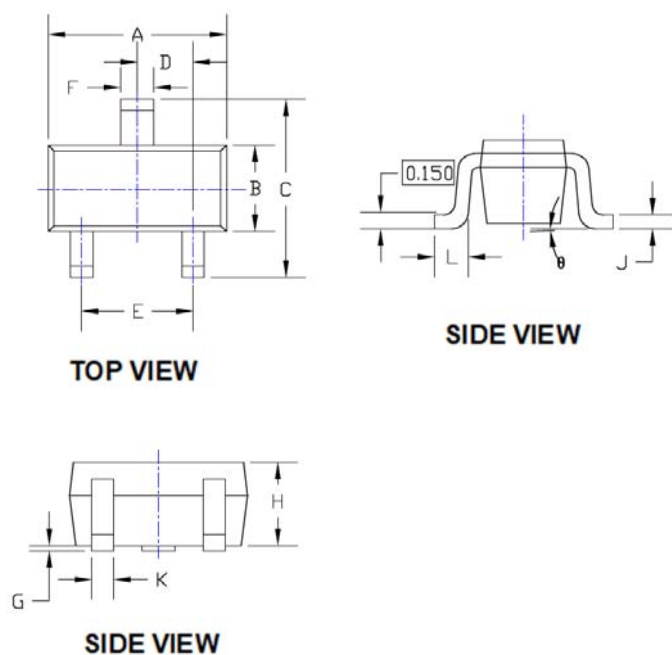
Fig 5: $P_D - T_a$ Curve





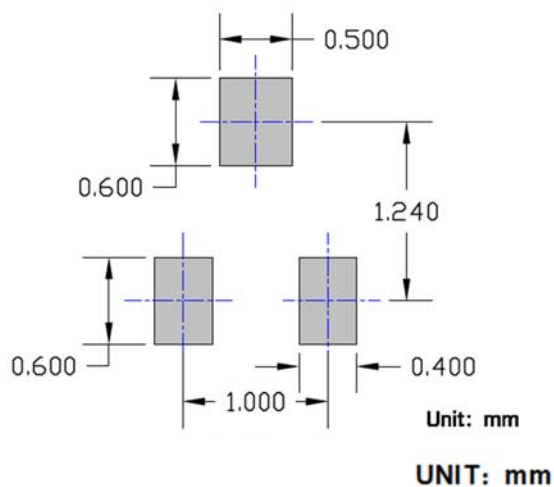
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■ Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.059	0.067	1.500	1.700
B	0.030	0.033	0.750	0.850
C	0.057	0.069	1.450	1.750
D	0.020TYP		0.500TYP	
E	0.035	0.043	0.900	1.100
F	0.010	0.018	0.250	0.450
G	0.000	0.004	0.000	0.100
H	0.024	0.031	0.600	0.800
J	0.004	0.008	0.100	0.200
K	0.006	0.014	0.150	0.350
L	0.010	0.018	0.260	0.460
θ	0°	8°	0°	8°

■ Suggested Pad Layout





DTA114YE

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