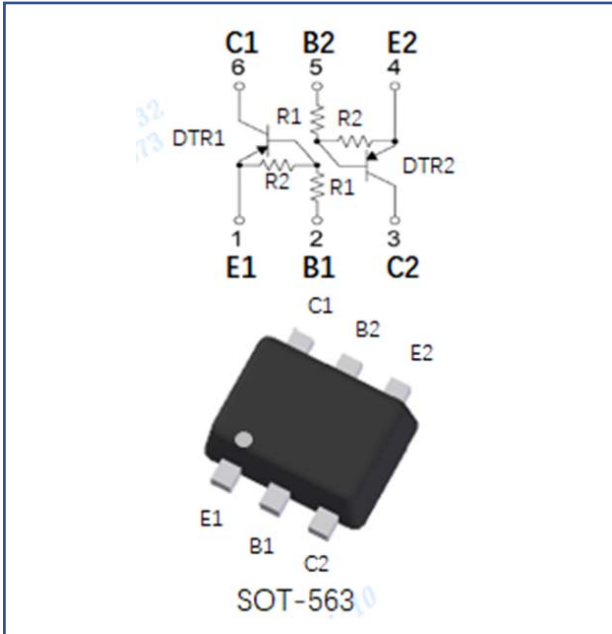


## Dual PNP Digital Transistors (Built-in Resistors)



### 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-563
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

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

Item	Symbol	Unit	Conditions	Value
Device marking code				B9
Supply voltage	V <sub>CC</sub>	V		-50
Input voltage	V <sub>IN</sub>	V		-40 to +6
Output current	I <sub>O</sub>	mA		-100
Power dissipation	P <sub>D</sub>	mW		150
Junction temperature	T <sub>J</sub>	°C		-55 to +150
Storage temperature	T <sub>STG</sub>	°C		-55 to +150

**■ Electrical Characteristics** ( $T_a=25^\circ\text{C}$  Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Input voltage	$V_{I(\text{off})}$	V	$V_{CC}=-5\text{V}, I_c=-100\mu\text{A}$	-0.3		
	$V_{I(\text{on})}$	V	$V_o=-0.3\text{V}, I_c=-1\text{mA}$			-1.4
Output voltage	$V_{O(\text{on})}$	V	$I_o / I_i = -5\text{mA} / -0.25\text{mA}$			-0.3
Input current	$I_i$	mA	$V_i=-5\text{V}$			-0.88
Output current	$I_{O(\text{off})}$	$\mu\text{A}$	$V_{CC}=-50\text{V}, V_i=0$			-0.5
DC current gain	$G_i$		$V_o=-5\text{V}, I_o = -5\text{mA}$	68		
Input resistance	$R_1$	k $\Omega$		7	10	13
Resistance ratio	$R_2/R_1$			3.7	4.7	5.7
Transition frequency	$f_T$	MHz	$V_{CE}=-10\text{V}, I_E=-5\text{mA}, f=100\text{MHz}$		250	

**■ Thermal Characteristics**

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{\theta J-A}^{(1)}$	$^\circ\text{C/W}$	833
Thermal resistance, junction-to-case	$R_{\theta J-C}^{(1)}$	$^\circ\text{C/W}$	667

**Note:**

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

■ Characteristics

Fig 1: DC Current Gain Characteristics

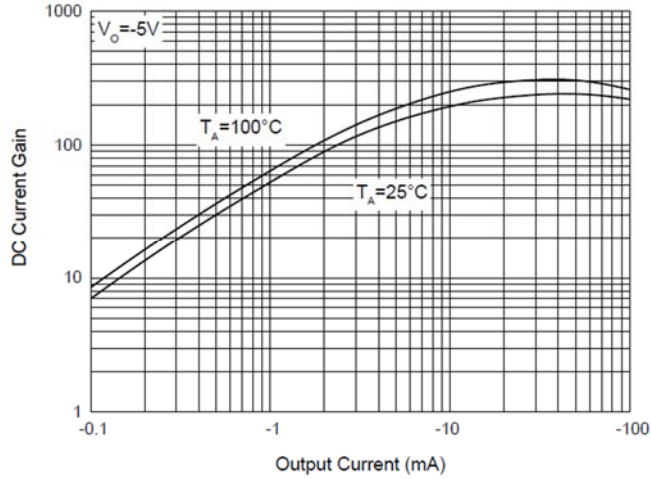


Fig 2: Input Voltage (On) Characteristics

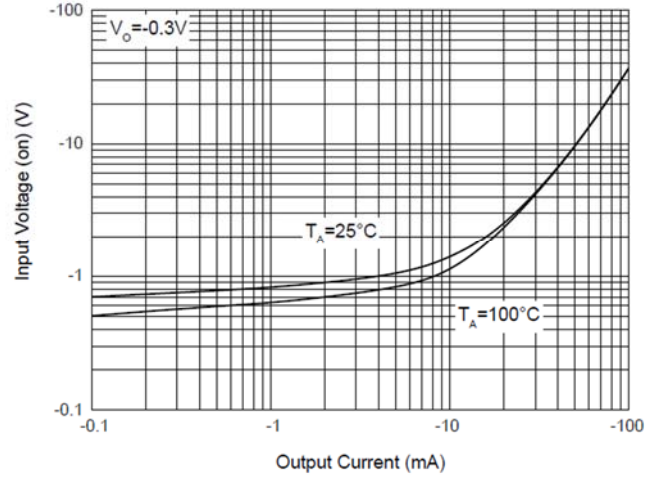


Fig 3: Input Voltage (Off) Characteristics

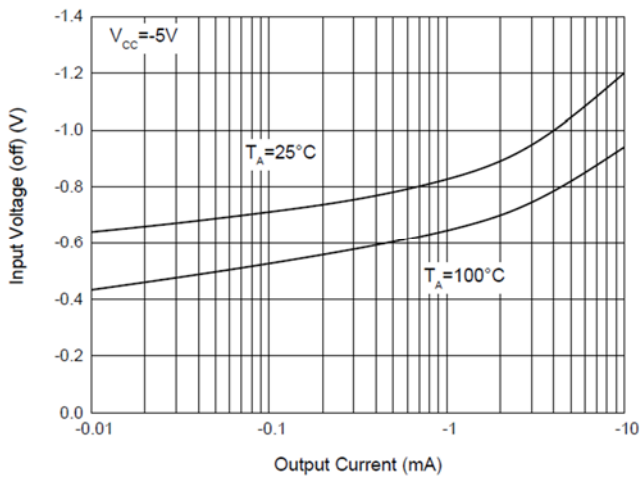


Fig 4: Output Voltage Characteristics

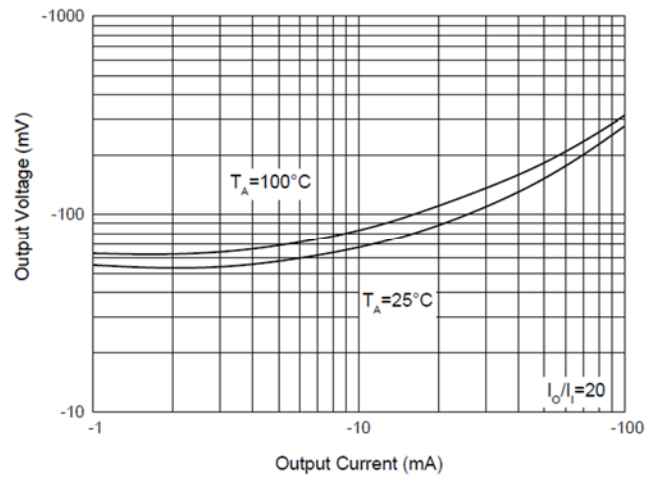
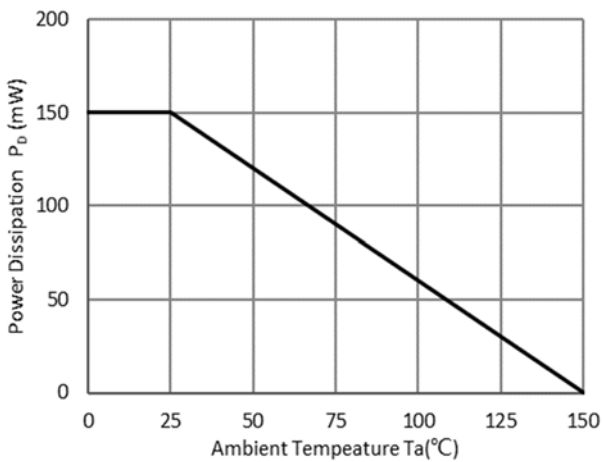


Fig 5:  $P_D$ - $T_a$  Curve



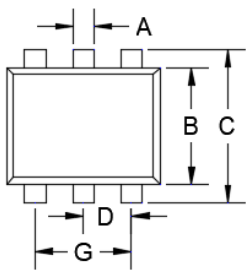


## Ordering Information

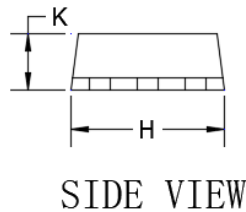
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
EMB9	F2	Approximate 0.0035	3000	30000	120000	7" reel

## Outline Dimensions

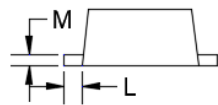
SOT-563



TOP VIEW



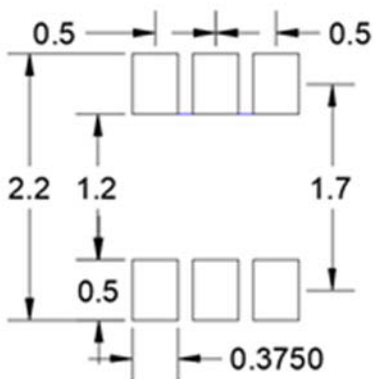
SIDE VIEW



SIDE VIEW

DIM	DIMENSIONS			
	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.006	0.011	0.150	0.300
B	0.043	0.051	1.100	1.300
C	0.059	0.067	1.500	1.700
D	0.016	0.024	0.400	0.600
G	0.035	0.043	0.900	1.100
H	0.059	0.067	1.500	1.700
K	0.021	0.026	0.550	0.650
L	0.004	0.011	0.100	0.300
M	0.004	0.007	0.100	0.180

## Suggested Pad Layout



UNIT:mm



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