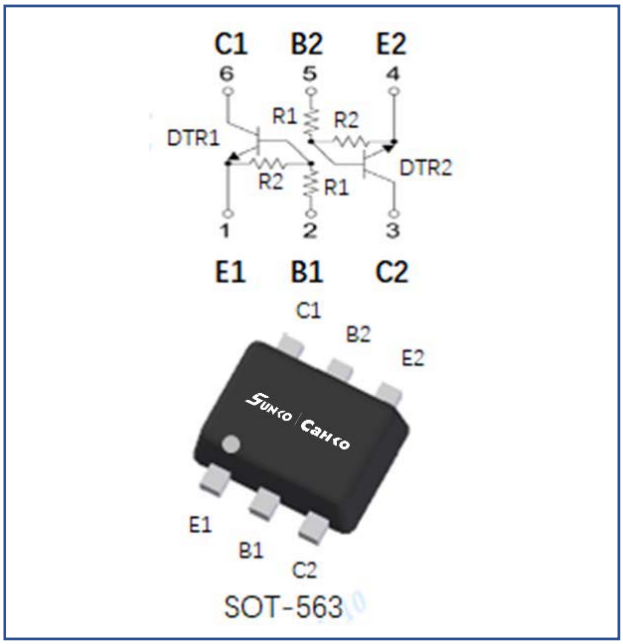
EMH13

Dual NPN Digital Transistors (Built-in Resistors)



Features

- Moisture sensitivity level 1
- Halogen free and
- Surface mount package ideally suited for auto matic 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_a=25℃ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				H13
Supply voltage	V_{CC}	V		50
Input voltage	V_{IN}	V		-5 to +30
Output current	I_O	mA		100
Power dissipation	P_D	mW		150
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	V_{CC}=5V,Ic=100uA	0.5		
	$VI_{(on)}$	V	V_O=0.3V,Ic=5mA			1.3
Output voltage	$V_{O(on)}$	V	I_O /Ii =5mA/0.25 mA			0.3
Input current	I_I	mA	V_I=5V			1.8
Output current	$I_{O(off)}$	uA	V_{CC}=50V, Vi=0			0.5
DC current gain	G_I		V_O=5V, I_O =10mA	80		
Input resistance	R_1	kΩ		3.29	4.7	6.11
Resistance ratio	R_2/R_1			8	10	12
Transition frequency	f_T	MHz	V_{CE}=10V,I_E=5mA,f=100MHz		250	

■ Thermal Characteristics

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

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■Characteristics

Fig 1：DC Current Gain Characteristics

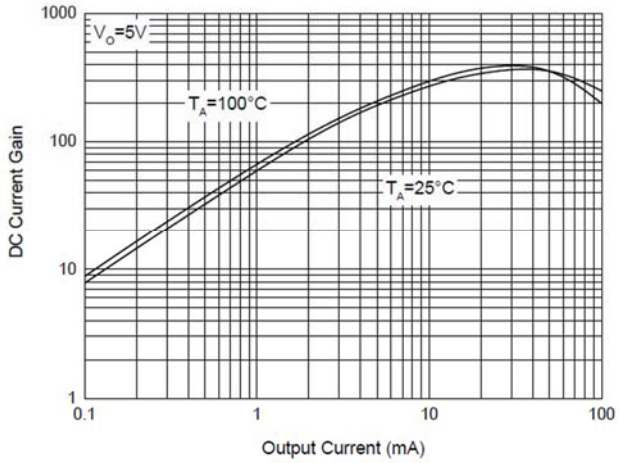


Fig 2：Input Voltage (On) Characteristics

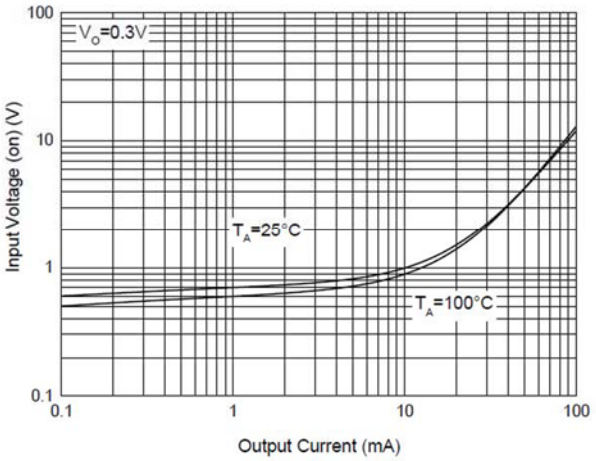


Fig 3：Input Voltage (Off) Characteristics

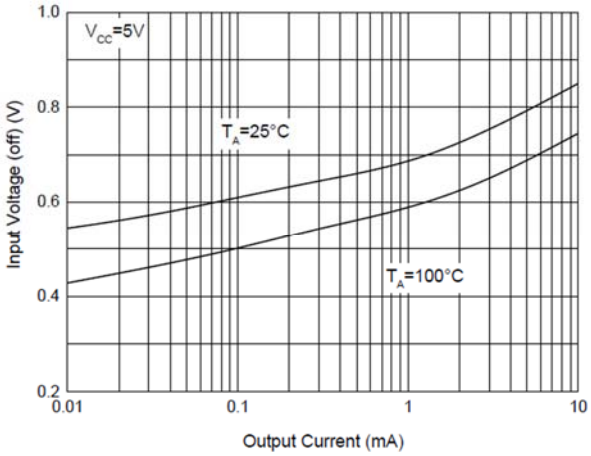


Fig 4：Output Voltage Characteristi

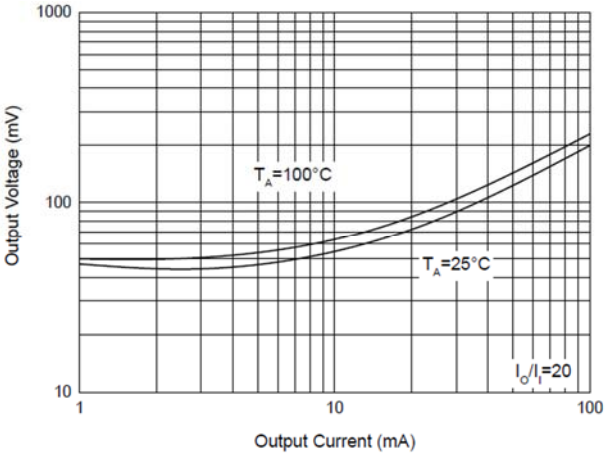
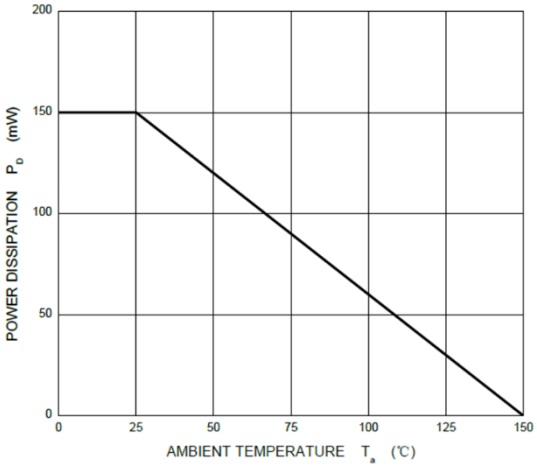


Fig 5：P_D-Ta Curve



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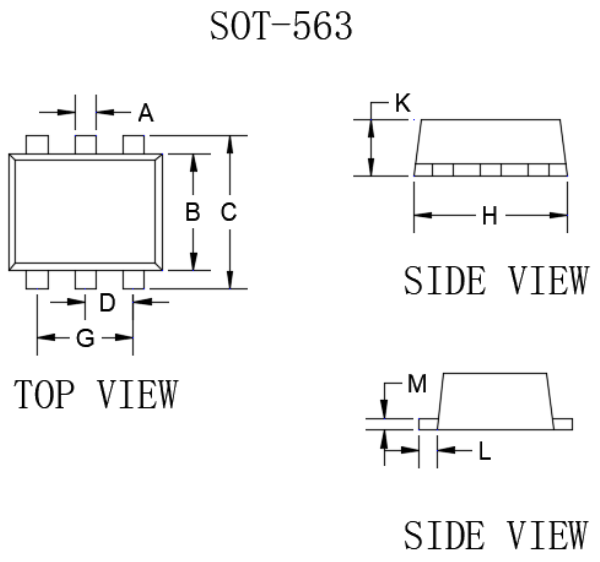
■Ordering Information

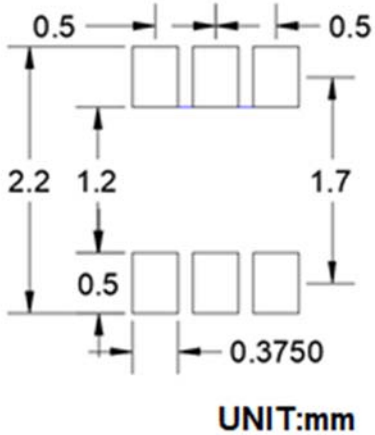
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
EMH13	F2	Approximate 0.0035	3000	30000	120000	7" reel

■ Outline Dimensions



DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MN	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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