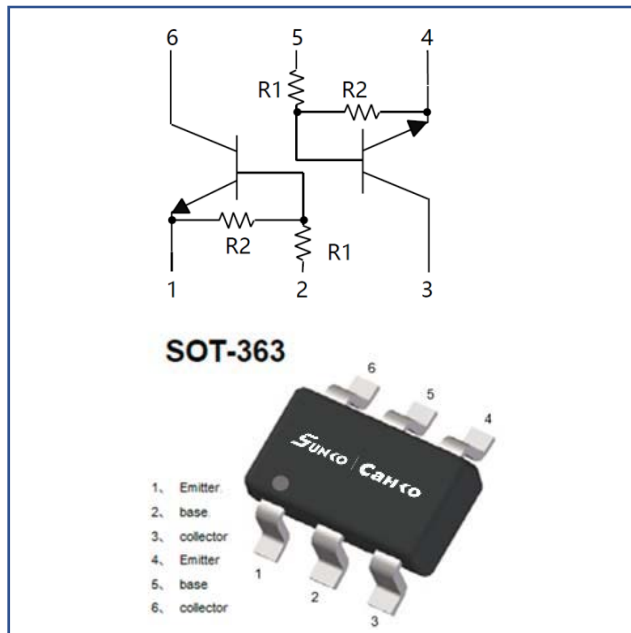


UMH18N

Dual NPN 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-363
- **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				H18
Collector-base voltage	V_{CC}	V		50
Collector-emitter voltage	V_{IN}	V		-7 to +20
Collector 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 _c =100uA	0.3		
	V _{I(on)}	V	V _o =0.3V, I _c =20mA			2.5
Output voltage	V _{O(on)}	V	I _o / I _i =10mA/0.5 mA			0.3
Input current	I _i	mA	V _i =5V			0.6
Output current	I _{O(off)}	uA	V _{CC} =50V, V _i =0			0.5
DC current gain	G _i		V _o =5V, I _o =10mA	50		
Input resistance	R ₁	kΩ		3.3	4.7	6.1
Resistance ratio	R ₂ /R ₁			1.7	2.1	2.6
Transition frequency	f _T	MHz	V _o =10V, I _o =5mA, f=100MHz		250	

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	834
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	667

Note:

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

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■ Characteristics

Fig 1: Input Voltage (On) Characteristics

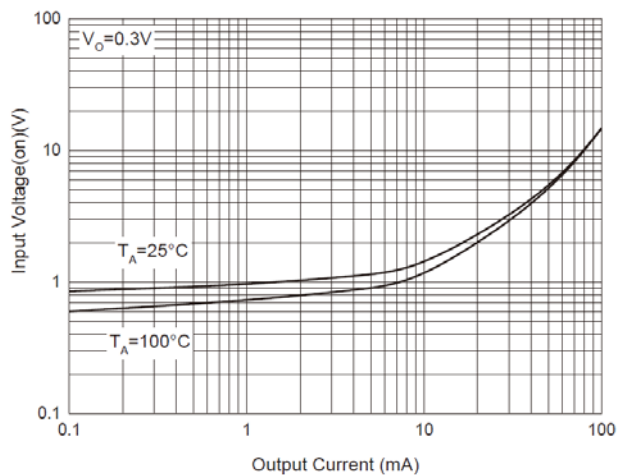


Fig 2: Input Voltage (Off) Characteristic

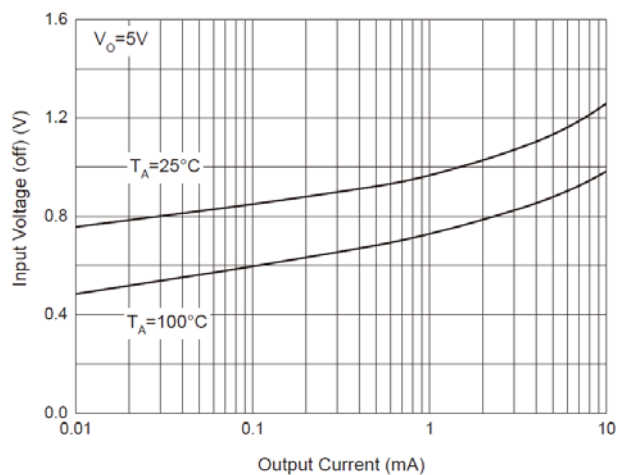


Fig 3: DC Current Gain Characteristics

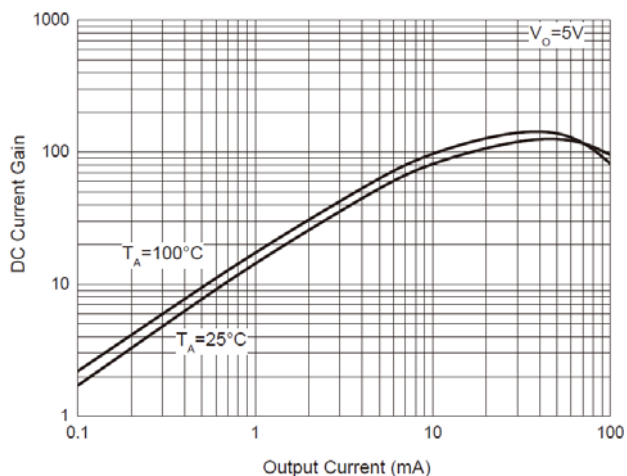


Fig 4: Output Voltage Characteristics

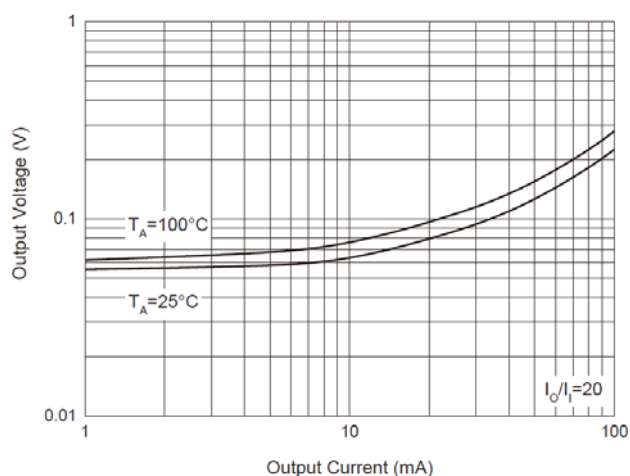
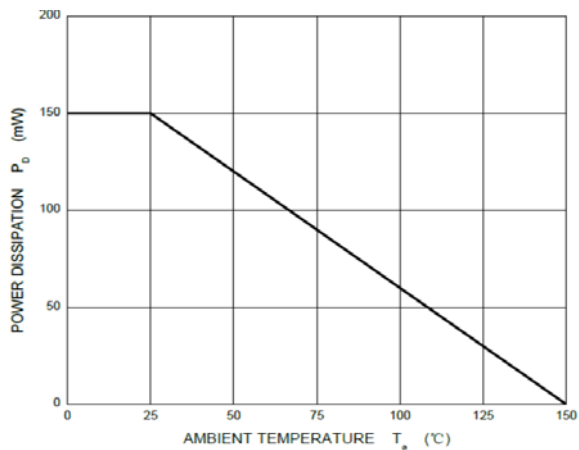


Fig 5: P_D-T_a Curve

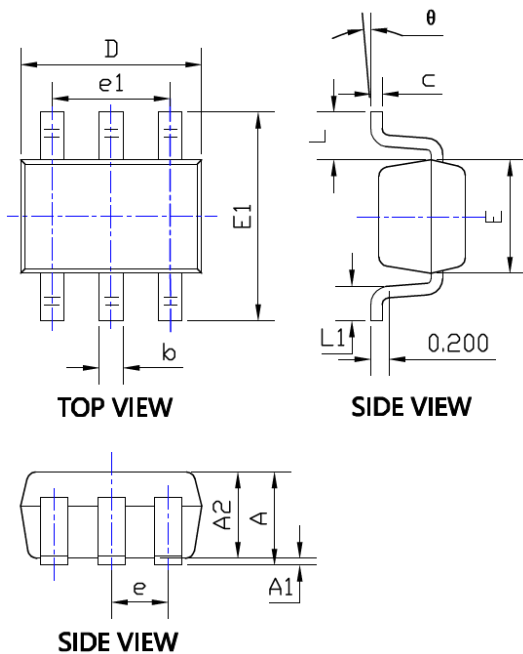


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■ Ordering Information

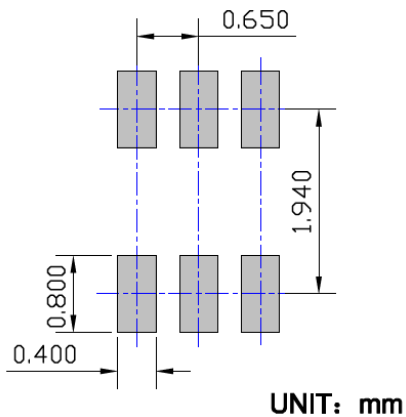
Prefered P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
UMH18N	F2	Approximate 0.009	3000	30000	120000	7" reel
UMH18N	F3	Approximate 0.009	10000		210000	7" reel

■ Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.014	0.150	0.350
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026TYP		0.650TYP	
e1	0.047	0.055	1.200	1.400
L	0.021REF		0.525REF	
L1	0.010	0.018	0.260	0.460
θ	0°	8°	0°	8°

■ Suggested Pad Layout



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