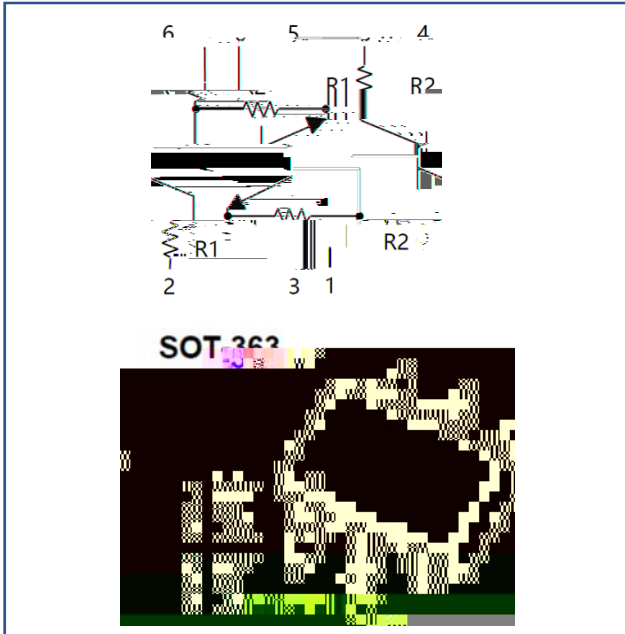


## Dual NPN Digital Transistors (Built-in Resistors)



### 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-363
- 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				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	$T_J$			-55 to +150
Storage temperature	$T_{STG}$			-55 to +150



# UMH18N

RoHS  
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## Electrical Characteristics (T<sub>a</sub>=25 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	0.3		
	V <sub>I(on)</sub>	V	V <sub>O</sub> =0.3V, I <sub>C</sub> =20mA			2.5
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			0.6
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> = 10mA	50		
Input resistance	R <sub>1</sub>	k		3.3	4.7	6.1
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>			1.7	2.1	2.6
Transition frequency	f <sub>T</sub>	MHz	V <sub>O</sub> =10V, I <sub>O</sub> =5mA, f=100MHz		250	

## Thermal Characteristics

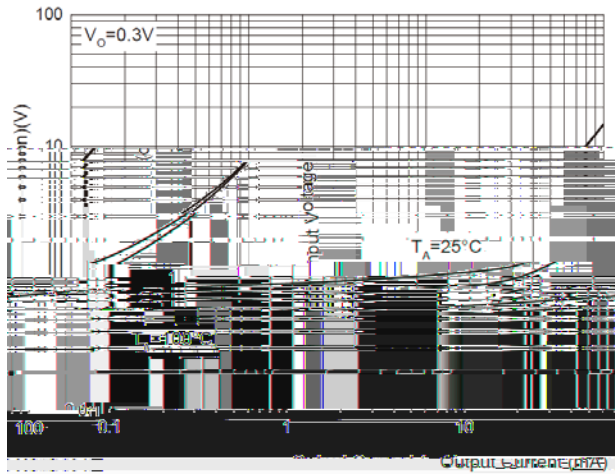
Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R <sub>J-A</sub> <sup>(1)</sup>	/W	834
Thermal resistance, junction-to-case	R <sub>J-C</sub> <sup>(1)</sup>	/W	667

### Note:

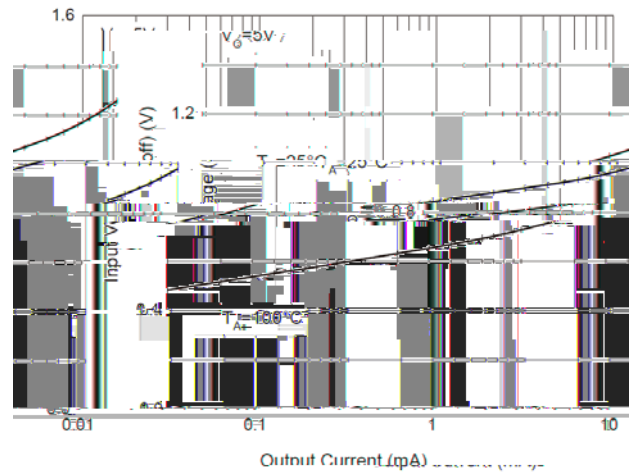
- 1 Device mounted on PCB, single-sided copper with standard footprint

## Characteristics

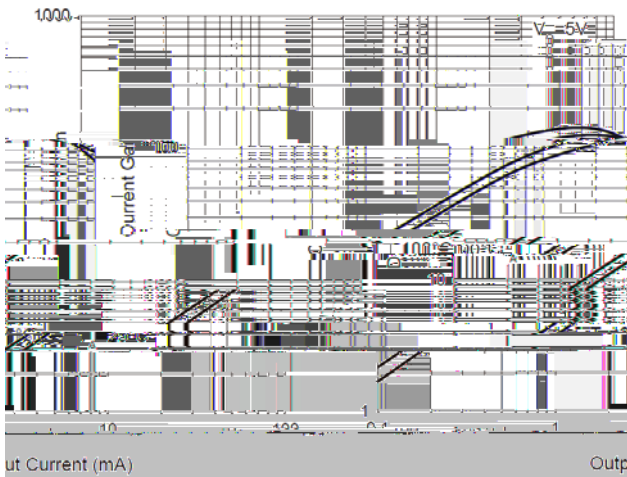
**Fig 1 Input Voltage (On) Characteristics**



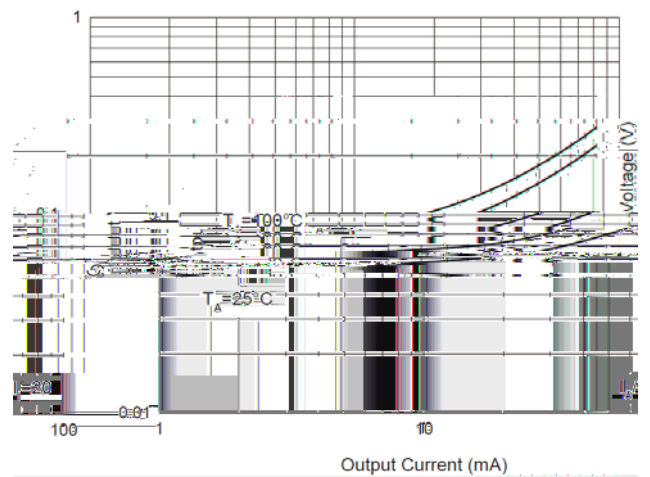
**Fig 2 Input Voltage (Off) Characteristic**



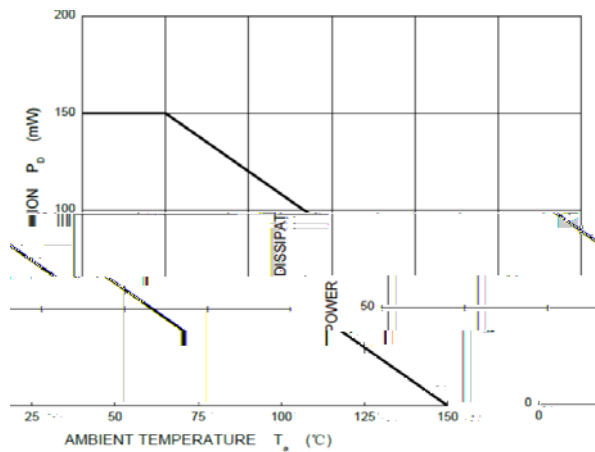
**Fig 3 DC Current Gain Characteristics**



**Fig 4 Output Voltage Characteristics**



**Fig 5 P<sub>D</sub>-T<sub>a</sub> Curve**





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