

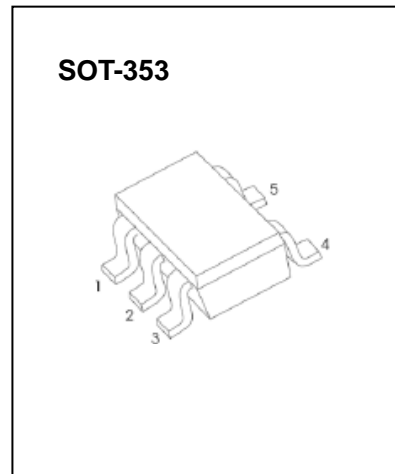
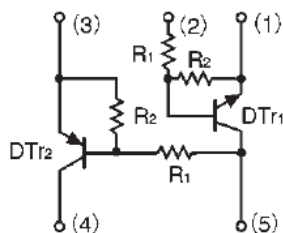
## Digital Transistors(built-in resistors)

**UMC5N** dual digital transistor (NPN+PNP)

### FEATURES

- Both the DTA143X and DTC144E chips in a SOT-353 package
- Ideal for power switch circuits
- Mounting cost and area can be cut in half

**MARKING: C5**



### DTTr1 Absolute maximum ratings (T<sub>a</sub>=25°C)

Parameter	Symbol	Value	Unit
Supply voltage	V <sub>CC</sub>	50	V
Input voltage	V <sub>IN</sub>	-10~+40	V
Output current	I <sub>O</sub>	30	mA
	I <sub>C(MAX)</sub>	100	
Power dissipation	P <sub>d</sub>	150	mW
Thermal Resistance From Junction To Ambient	R <sub>θJA</sub>	833	°C/W
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55~+150	°C

### DTTr1 Electrical characteristics (T<sub>a</sub>=25°C)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input voltage	V <sub>I(off)</sub>	0.5			V	V <sub>CC</sub> =5V, I <sub>O</sub> =100μA
	V <sub>I(on)</sub>			3		V <sub>O</sub> =0.3V, I <sub>O</sub> =2mA
Output voltage	V <sub>O(on)</sub>			0.3	V	I <sub>O</sub> =10mA, I <sub>I</sub> =0.5mA
Input current	I <sub>I</sub>			0.18	mA	V <sub>I</sub> =5V
Output current	I <sub>O(off)</sub>			0.5	μA	V <sub>CC</sub> =50V, V <sub>I</sub> =0
DC current gain	G <sub>I</sub>	68				V <sub>O</sub> =5V, I <sub>O</sub> =5mA
Input resistance	R <sub>1</sub>	32.9	47	61.1	kΩ	
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>	0.8	1	1.2		
Transition frequency	f <sub>T</sub>		250		MHz	V <sub>O</sub> =10V, I <sub>O</sub> =5mA, f=100MHz

**DTr2 Absolute maximum ratings (T<sub>a</sub>=25°C)**

Parameter	Symbol	Value	Unit
Supply voltage	V <sub>CC</sub>	-50	V
Input voltage	V <sub>IN</sub>	-20~+7	V
Output current	I <sub>O</sub>	-100	mA
	I <sub>C(MAX)</sub>	-100	
Power dissipation	P <sub>d</sub>	150	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55~+150	°C

**DTr2 Electrical characteristics (T<sub>a</sub>=25°C)**

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input voltage	V <sub>I(off)</sub>	-0.3			V	V <sub>CC</sub> =-5V, I <sub>O</sub> =-100μA
	V <sub>I(on)</sub>			-2.5		V <sub>O</sub> =-0.3V, I <sub>O</sub> =-20mA
Output voltage	V <sub>O(on)</sub>			-0.3	V	I <sub>O</sub> =-10mA, I <sub>I</sub> =-0.5mA
Input current	I <sub>I</sub>			-1.8	mA	V <sub>I</sub> =-5V
Output current	I <sub>O(off)</sub>			-0.5	μA	V <sub>CC</sub> =-50V, V <sub>I</sub> =0
DC current gain	G <sub>I</sub>	30				V <sub>O</sub> =-5V, I <sub>O</sub> =-10mA
Input resistance	R <sub>1</sub>	3.29	4.7	6.11	kΩ	
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>	1.7	2.1	2.6		
Transition frequency	f <sub>T</sub>		250		MHz	V <sub>O</sub> =-10V, I <sub>O</sub> =-5mA, f=100MHz