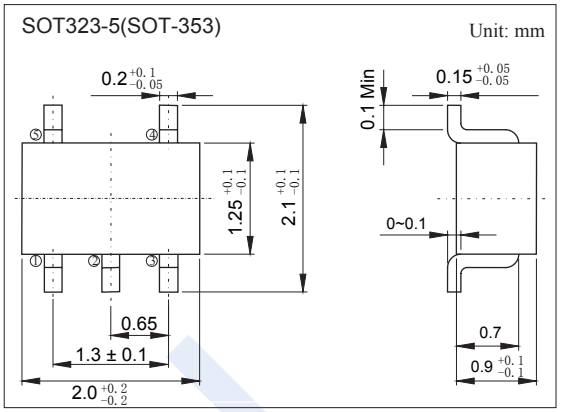
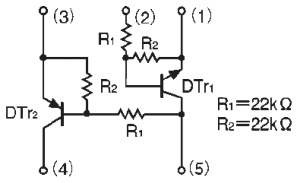
NPN And PNP Digital Transistors

UMC2N



■ Features

- Includes a DTA124E and a DTC124E transistor in a single UMT and a SMT package.
- Ideal for power switch circuits.
- Mounting cost and area can be cut in half.



■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-10 to 40	
Output Current	I_O	30	mA
	$I_{C(Max)}$	100	
Power Dissipation (Note.1)	P_d	150	mW
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-65 to 150	

Note.1: 120mW per element must not be exceeded.

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Voltage	$V_{I(off)}$	Vcc= 5V， I_O= 100uA			0.5	V
	$V_{I(on)}$	Vcc= 0.2V， I_O= 5mA	3			
Output Voltage	$V_{O(on)}$	I_O/I_I= 10 mA/0.5mA		0.1	0.3	
Input current	I_I	V_I= 5V			0.36	mA
Output current	$I_{O(off)}$	Vcc= 50V， V_I= 0			0.5	uA
DC current gain	h_{FE}	Vo= 5V， I_O= 5mA	56			
Input resistance	R_1		15.4	22	28.6	kΩ
Resistance ratio	R_2/R_1		0.8	1	1.2	
Transition frequency (Note.1)	f_T	V_{CE}= 10V, I_E= 5mA,f=100MHz		250		MHz

Note.1: Transition frequency of the device

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■ Typical Characterisitics

NPN digital transistors

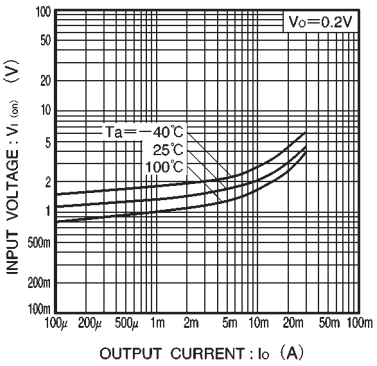

Fig.1 Input voltage vs. output current (ON characteristics)

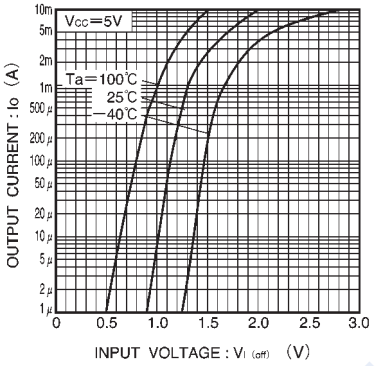

Fig.2 Output current vs. input voltage (OFF characteristics)

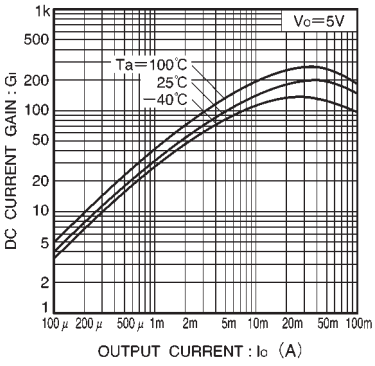

Fig.3 DC current gain vs. output current

PNP digital transistors

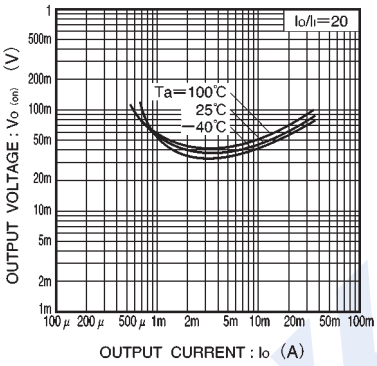

Fig.4 Output voltage vs. output current

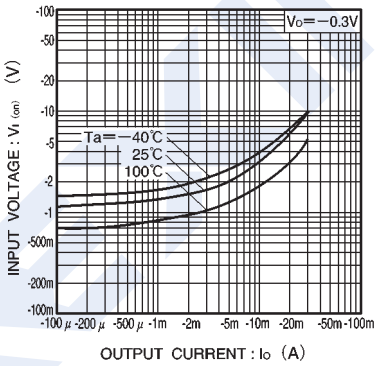

Fig.5 Input voltage vs. output current (ON characteristics)

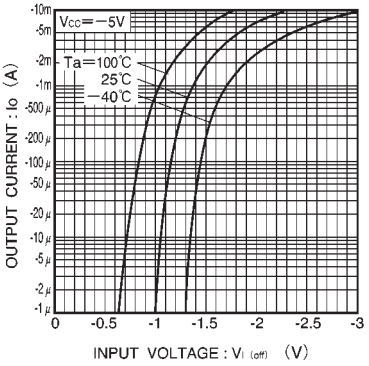

Fig.6 Output current vs. input voltage (OFF characteristics)

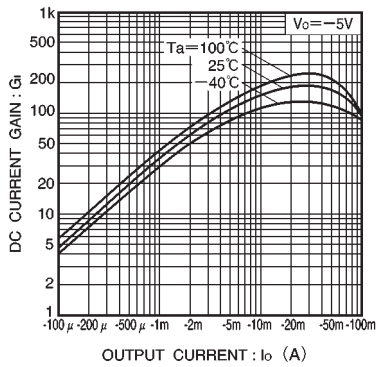

Fig.7 DC current gain vs. output current

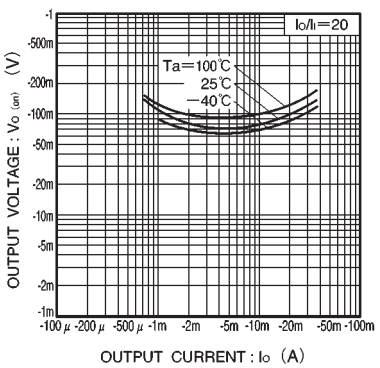

Fig.8 Output voltage vs. output current