Elektronische Bauelemente

UMC2N

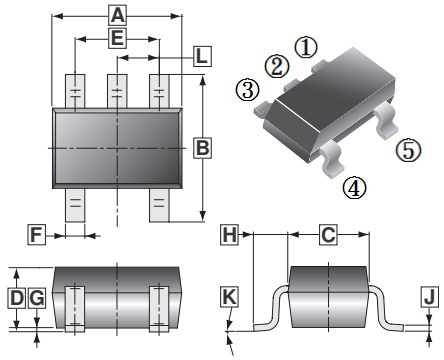
NPN+PNP Digital Transistors
(Built-in Resistors)

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

- DTC124E(NPN) and DTA124E(PNP) transistors are built-in a package
- Ideal for power switch circuits
- Mounting cost and area can be cut in half

SOT-353



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.00	2.20	G	0.100 REF.	
B	2.15	2.45	H	0.525 REF.	
C	1.15	1.35	J	0.08	0.15
D	0.90	1.10	K	8°	
E	1.20	1.40	L	0.650 TYP.	
F	0.15	0.35			

MARKING

C2

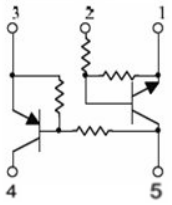
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-353	3K	7 inch

ORDER INFORMATION

Part Number	Type
UMC2N	Lead (Pb)-free
UMC2N-C	Lead (Pb)-free and Halogen-free

EQUIVALENT CIRCUIT



ABSOLUTE MAXIMUM RATINGS (NPN) (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-10~40	
Output Current	I_O	50	mA
	I_C	100	
Power Dissipation	P_D	150	mW
Junction and Storage Temperature	T_J, T_{STG}	150, -55~150	℃

ELECTRICAL CHARACTERISTICS (NPN) (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Input Voltage	$V_{I(off)}$	0.5	-	-	V	V_{CC}=5V, I_O=100μA
	$V_{I(on)}$	-	-	3		V_O=0.2V, I_O=5mA
Output Voltage	$V_{O(on)}$	-	-	0.3		I_O=10mA, I_I=0.5mA
Input Current	I_I	-	-	0.36	mA	V_I=5V
Output Current	$I_{O(off)}$	-	-	0.5	μA	V_{CC}=50V, V_I=0
DC Current Gain	G_I	56	-	-	V	V_O=5V, I_O=5mA
Input Resistance	R_1	15.4	22	28.6	kΩ	
Resistance Ratio	R_2/R_1	0.8	1	1.2		
Transition Frequency	f_T	-	250	-	MHz	V_{CE}=10V, I_E= -5mA, f=100MHz

ABSOLUTE MAXIMUM RATINGS (PNP) (T_A=25℃ unless otherwise specified)

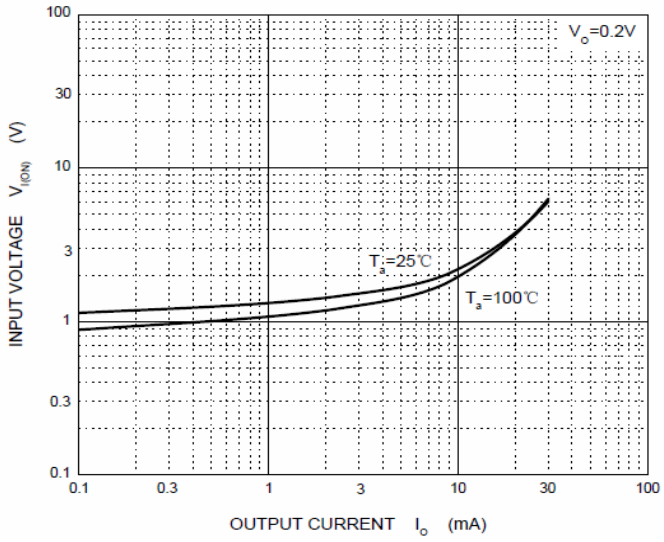
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	-50	V
Input Voltage	V_{IN}	-40~10	
Output Current	I_O	-50	mA
	I_C	-100	
Power Dissipation	P_D	150	mW
Junction and Storage Temperature	T_J, T_{STG}	150, -55~150	℃

ELECTRICAL CHARACTERISTICS (PNP) (T_A=25℃ unless otherwise specified)

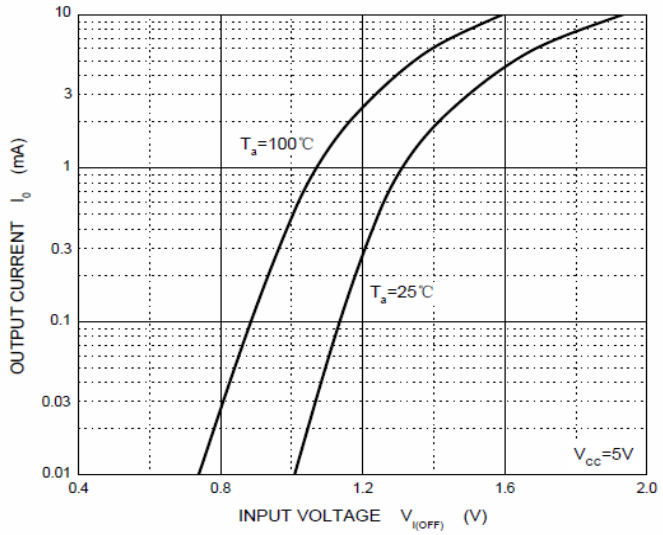
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Input Voltage	$V_{I(off)}$	-0.5	-	-	V	V_{CC}= -5V, I_O= -100μA
	$V_{I(on)}$	-	-	-3		V_O= -0.2V, I_O= -5mA
Output Voltage	$V_{O(on)}$	-	-	-0.3		I_O= -10mA, I_I= -0.5mA
Input Current	I_I	-	-	-0.36	mA	V_I= -5V
Output Current	$I_{O(off)}$	-	-	-0.5	μA	V_{CC}= -50V, V_I=0
DC Current Gain	G_I	56	-	-	V	V_O= -5V, I_O= -5mA
Input Resistance	R_1	15.4	22	28.6	kΩ	
Resistance Ratio	R_2/R_1	0.8	1	1.2		
Transition Frequency	f_T	-	250	-	MHz	V_{CE}= -10V, I_E= -5mA, f=100MHz

CHARACTERISTICS CURVE (NPN)

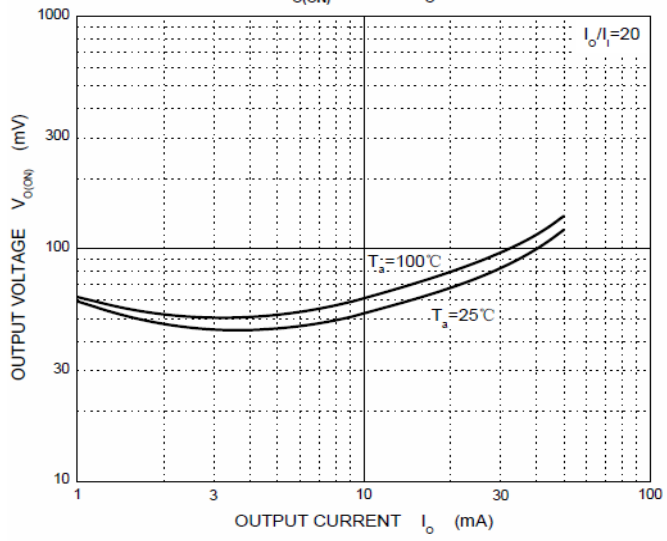
ON Characteristics



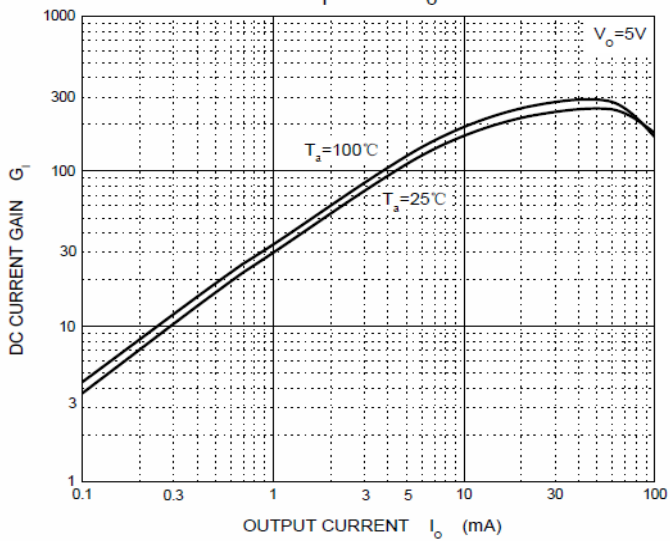
OFF Characteristics



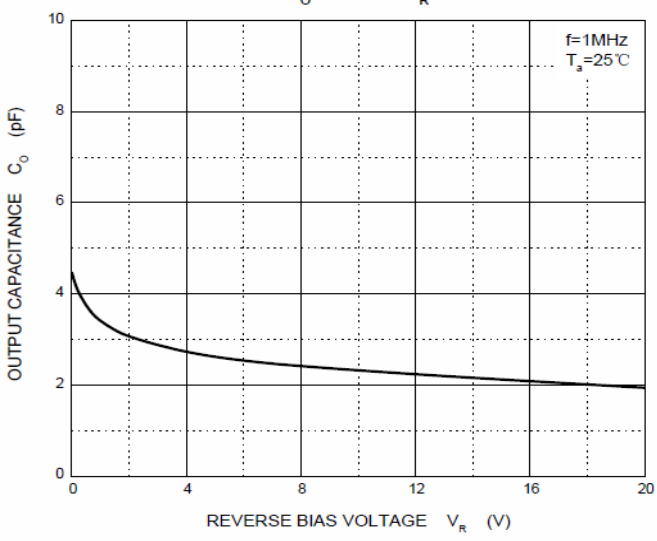
$V_{O(ON)}$ — I_O



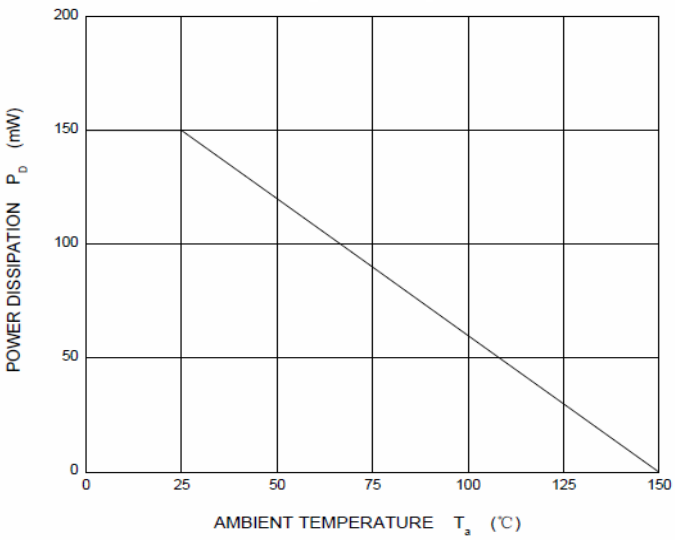
G_I — I_O



C_O — V_R

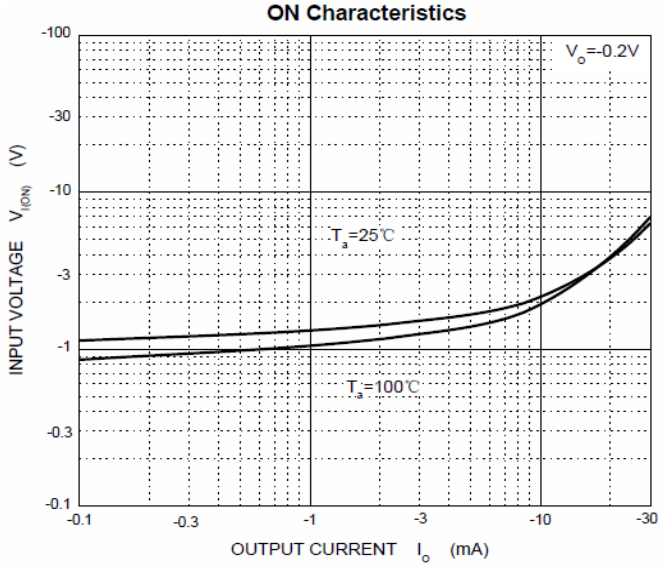


P_D — T_a

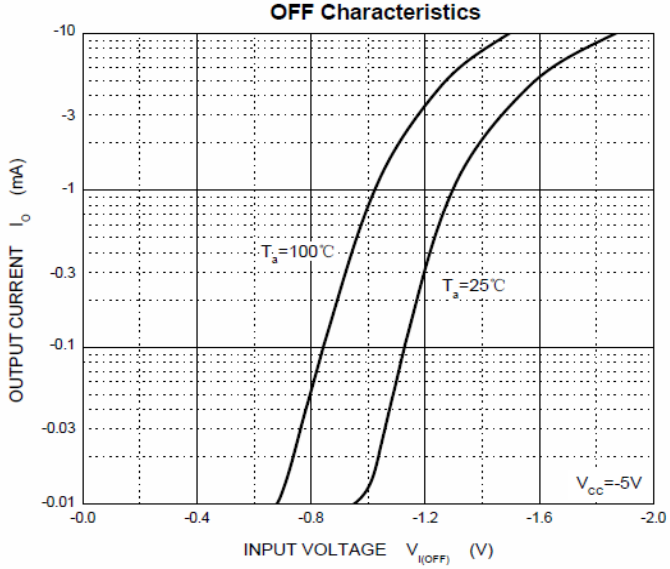


CHARACTERISTICS CURVE (PNP)

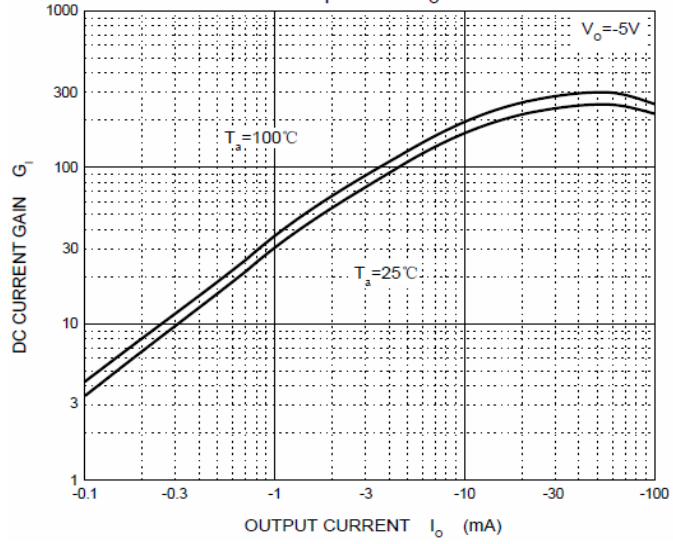
ON Characteristics



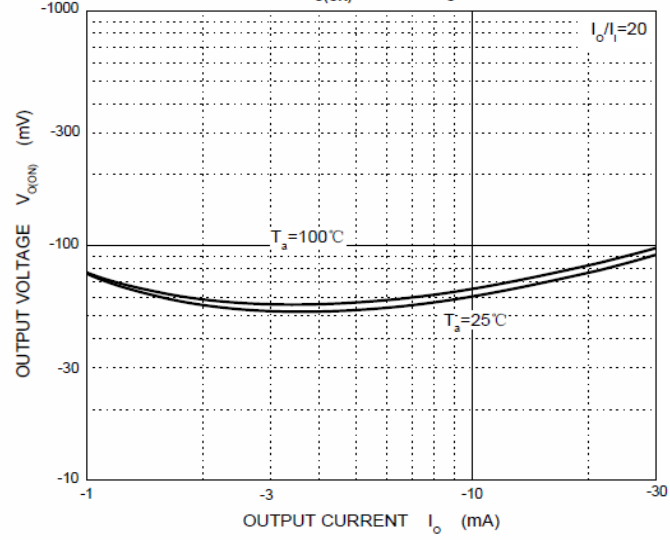
OFF Characteristics



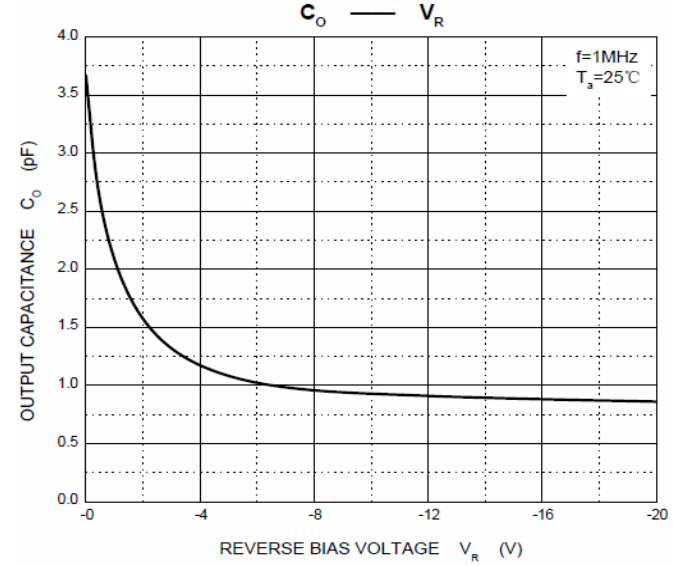
G_I — I_O



$V_{O(ON)}$ — I_O



C_O — V_R



P_D — T_a