Elektronische Bauelemente

UMD10N-C

NPN+PNP Digital Transistors (Built-in Resistors)

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

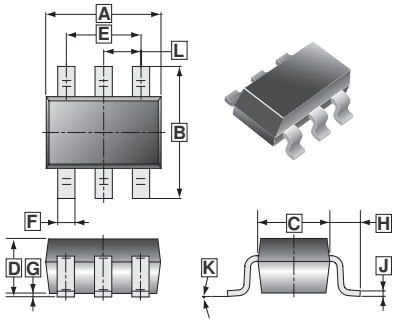
FEATURES

- DTC123J(NPN) and DTA123J(PNP) transistors are built-in a package
- Transistor elements are independent, eliminating Interference
- Mounting cost and area be cut in half

MARKING

D10

SOT-363



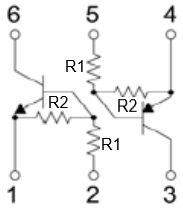
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.80	2.20	G	0.10 REF.	
B	1.80	2.45	H	0.525 REF.	
C	1.15	1.35	J	0.05	0.25
D	0.70	1.10	K	8°	
E	1.30 REF.		L	0.65 TYP.	
F	0.10	0.35			

PACKAGE INFORMATION

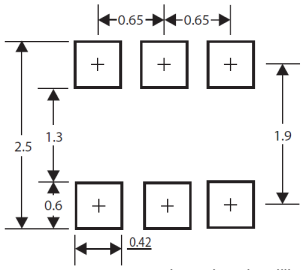
Package	MPQ	Leader Size
SOT-363	3K	7 inch

ORDER INFORMATION

Part Number	Type
UMD10N-C	Lead (Pb)-free and Halogen-free



Mounting Pad Layout



*Dimensions in millimeters

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

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-5~12	
Output Current	I_O	100	mA
	I_C	100	
Power Dissipation	P_D	150	mW
Junction & Storage Temperature Range	T_J, T_{STG}	-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
	$V_{I(on)}$	-	-	1.1		V_O=0.3V, I_O=5mA
Output Voltage	$V_{O(on)}$	-	0.1	0.3		I_O/I_I=5mA/0.25mA
Input Current	I_I	-	-	3.6	mA	V_I=5V
Output Current	$I_{O(off)}$	-	-	0.5	μA	V_{CC}=50V, V_I=0
DC Current Gain	G_I	80	-	-	V	V_O=5V, I_O=10mA
Input Resistance	R_1	1.54	2.2	2.86	kΩ	
Resistance Ratio	R_2/R_1	17	21	26		
Transition Frequency	f_T	-	250	-	MHz	V_{CE}=10V, I_E=5mA, f=100MHz

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

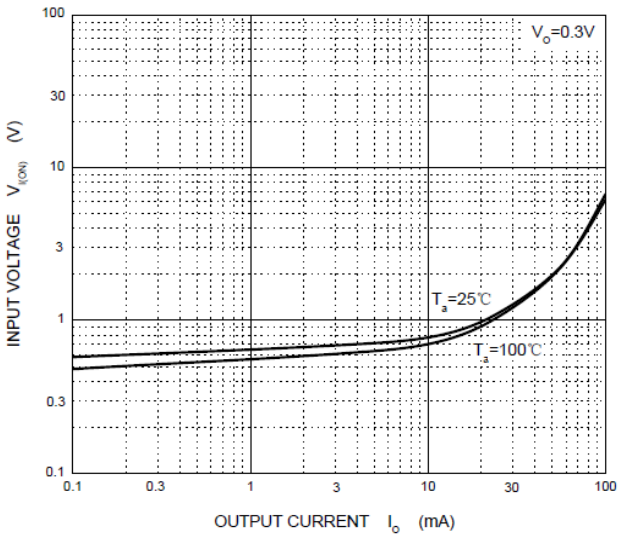
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	-50	V
Input Voltage	V_{IN}	-12~5	
Output Current	I_O	-100	mA
	I_C	-100	
Power Dissipation	P_D	150	mW
Junction & Storage Temperature Range	T_J, T_{STG}	-55~150	℃

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

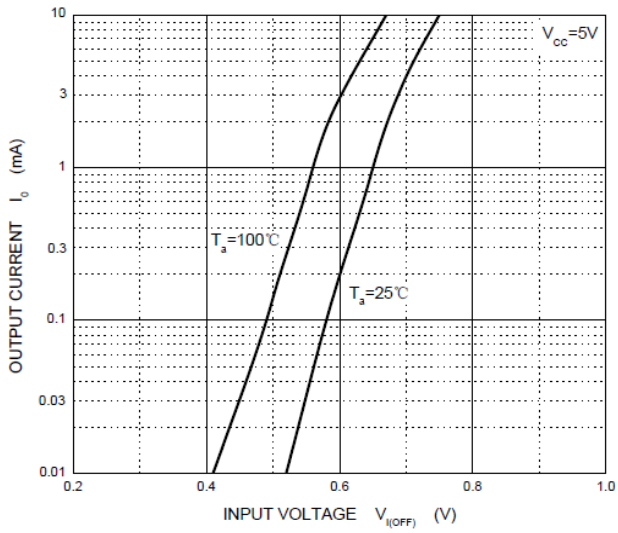
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Input Voltage	$V_{I(off)}$	-0.5	-	-	V	V_{CC}= -5V, I_O= -100μA
	$V_{I(on)}$	-	-	-1.1		V_O= -0.3V, I_O= -5mA
Output Voltage	$V_{O(on)}$	-	-0.1	-0.3		I_O/I_I= -5mA/-0.25mA
Input Current	I_I	-	-	-3.6	mA	V_I= -5V
Output Current	$I_{O(off)}$	-	-	-0.5	μA	V_{CC}= -50V, V_I=0
DC Current Gain	G_I	80	-	-	V	V_O= -5V, I_O= -5mA
Input Resistance	R_1	1.54	2.2	2.86	kΩ	
Resistance Ratio	R_2/R_1	17	21	26		
Transition Frequency	f_T	-	250	-	MHz	V_{CE}= -10V, I_E= -5mA, f=100MHz

CHARACTERISTICS CURVE (NPN)

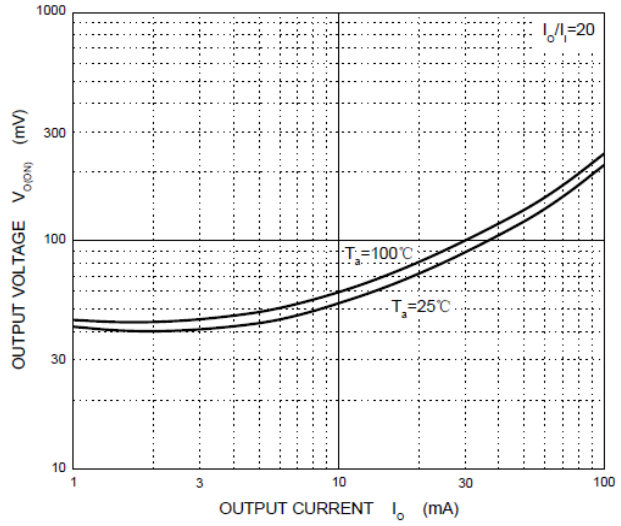
ON Characteristics



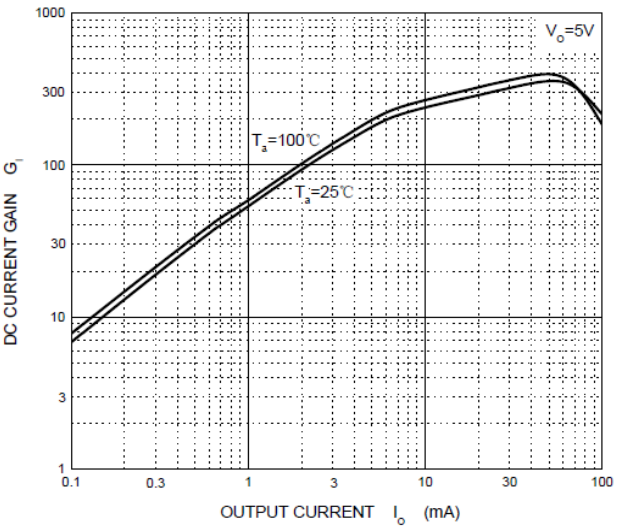
OFF Characteristics



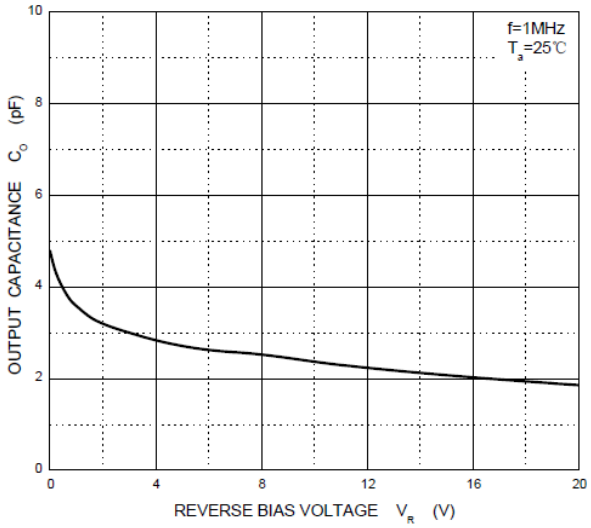
$V_{O(ON)}$ —— I_O



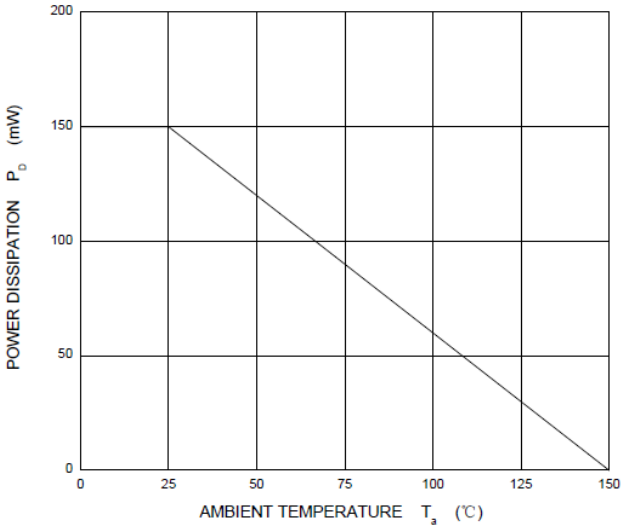
G_I —— I_O



C_O —— V_R

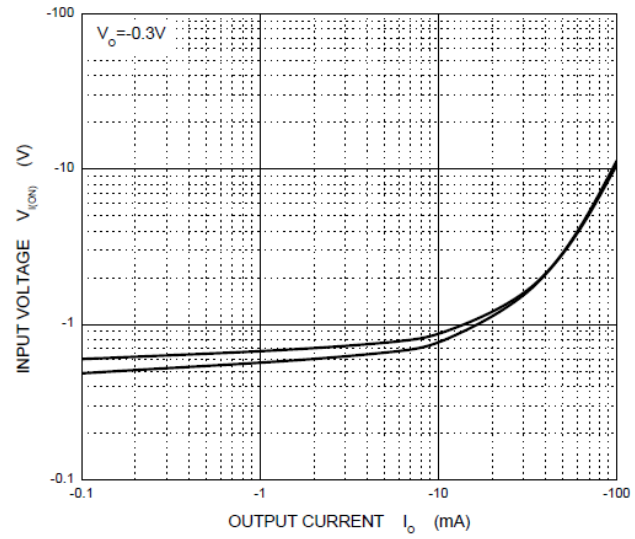


P_D —— T_a

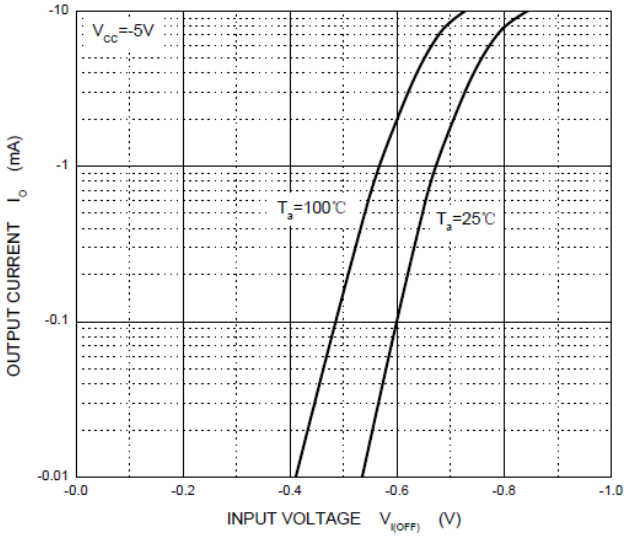


CHARACTERISTICS CURVE (PNP)

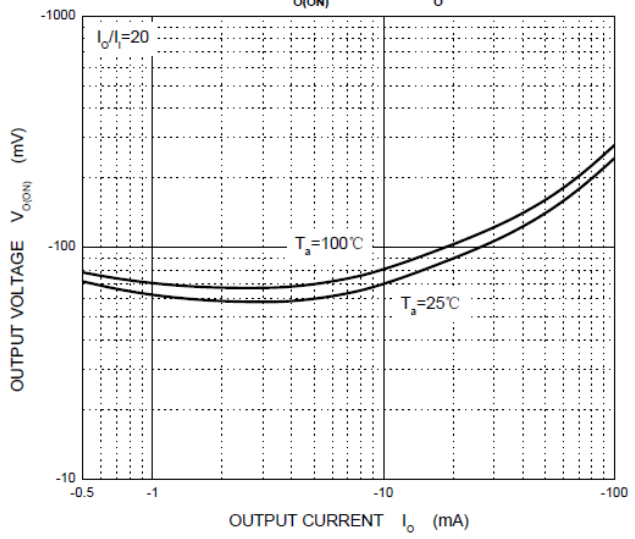
ON Characteristics



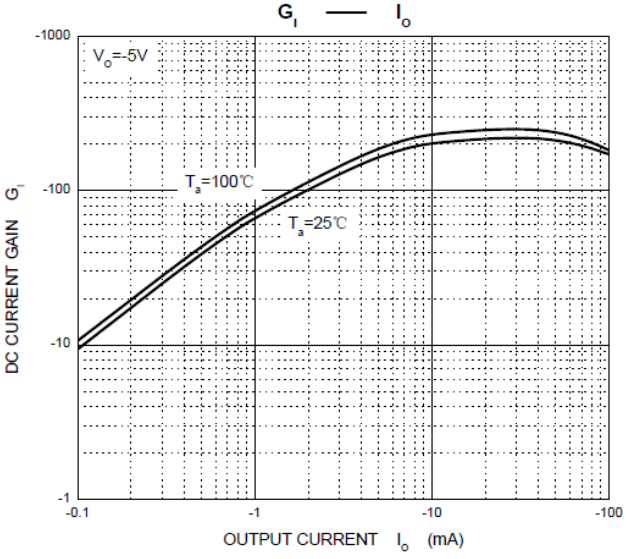
OFF Characteristics



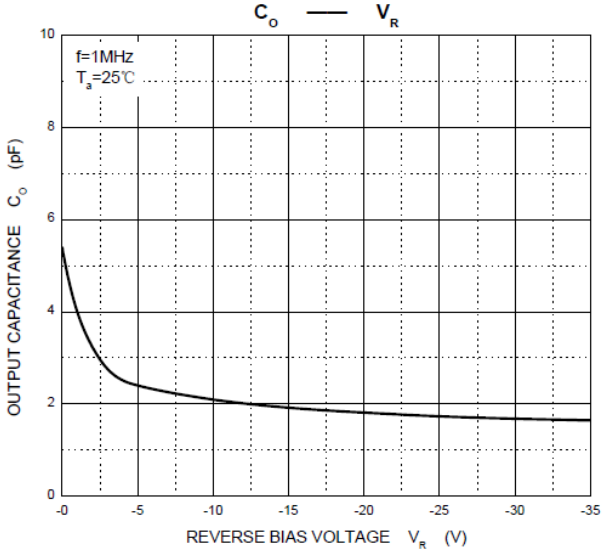
$V_{O(ON)}$ — I_O



G_I — I_O



C_O — V_R



P_D — T_a