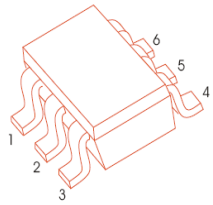
Digital transistors (built-in resistors)

UMD3N

DUAL DIGITAL TRANSISTOR (NPN+PNP)

SOT-363

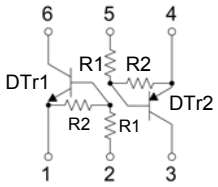


1. GND
2. IN
3. OUT
4.GND
5.IN
6.OUT

FEATURES

- DTA114E and DTC114E transistors are built-in a package.
- Transistor elements are independent, eliminating interference.
- Mounting cost and area can be cut in half.

External circuit



R1=10kΩ

R2=10kΩ

MARKING:D3

Absolute maximum ratings (Ta=25℃)

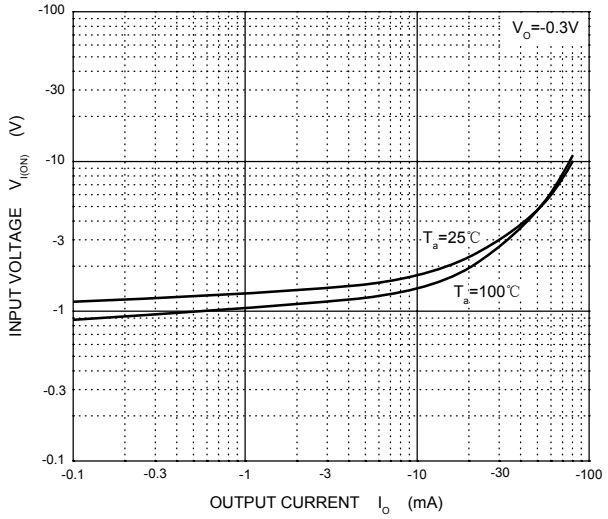
Parameter	Symbol	Limit	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	-10~40	V
Output current	I_O	50	mA
	$I_{C(MAX)}$	100	
Power dissipation	P_D*	150	mW
Junction temperature	Tj	150	℃
Storage temperature	Tstg	-55~150	℃

Note 1: 150mW per element must not be exceeded.

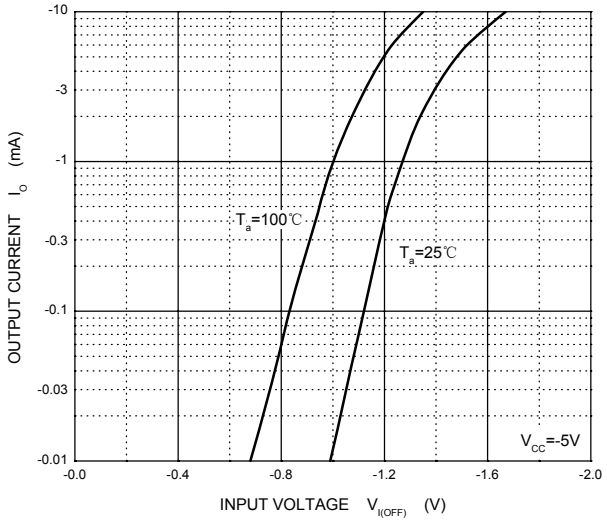
Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	0.5			V	V_{CC}=5V ,I_O=100μA
	$V_{I(on)}$			3		V_O=0.3V ,I_O=10mA
Output voltage	$V_{O(on)}$			0.3	V	I_O/I_I=10mA/0.5mA
Input current	I_I			0.88	mA	V_I=5V
Output current	$I_{O(off)}$			0.5	μA	V_{CC}=50V, V_I=0
DC current gain	G_I	30				V_O=5V,I_O=5mA
Input resistance	R_1	7	10	13	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

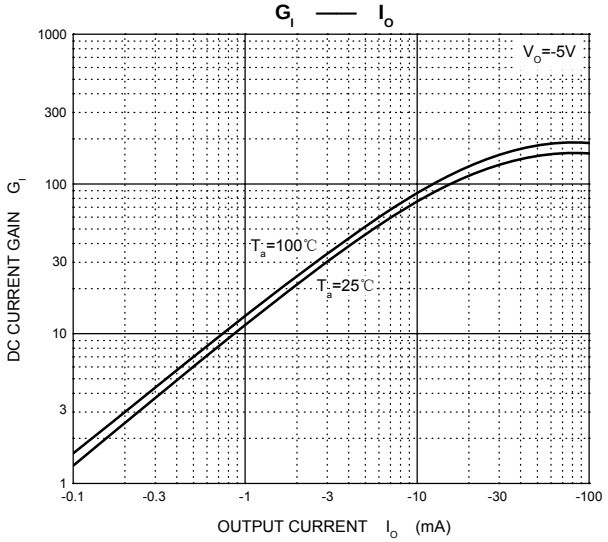
ON Characteristics



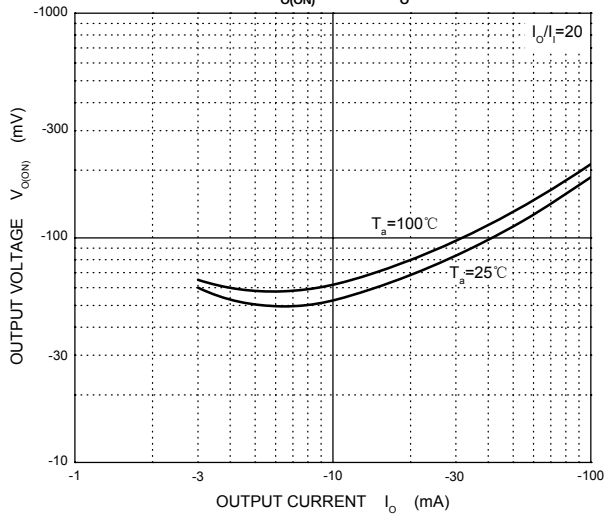
OFF Characteristics



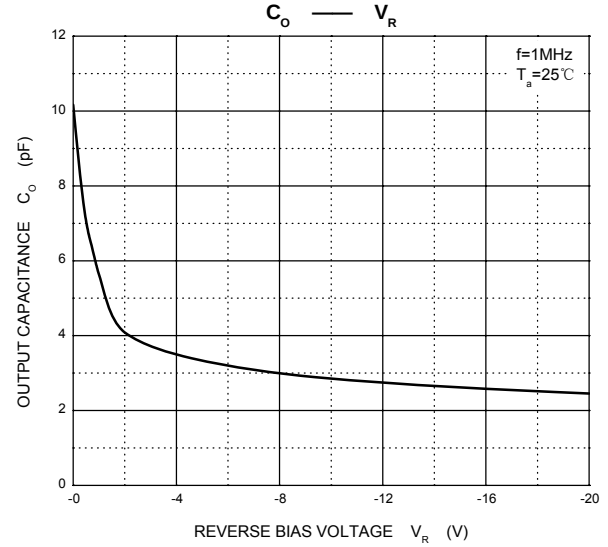
G_I —— I_O



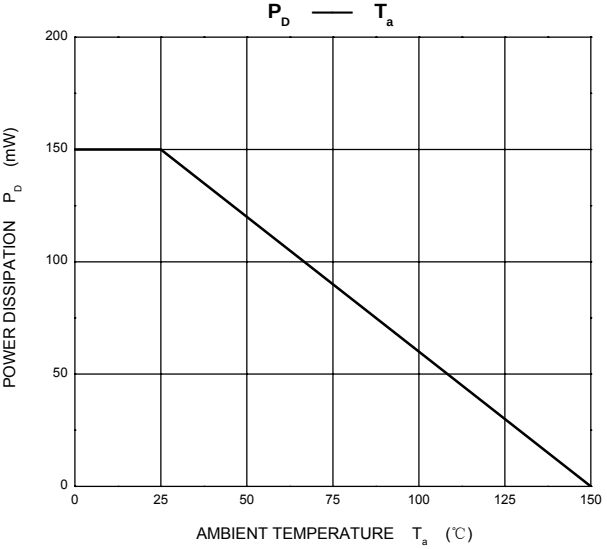
$V_{O(ON)}$ —— I_O



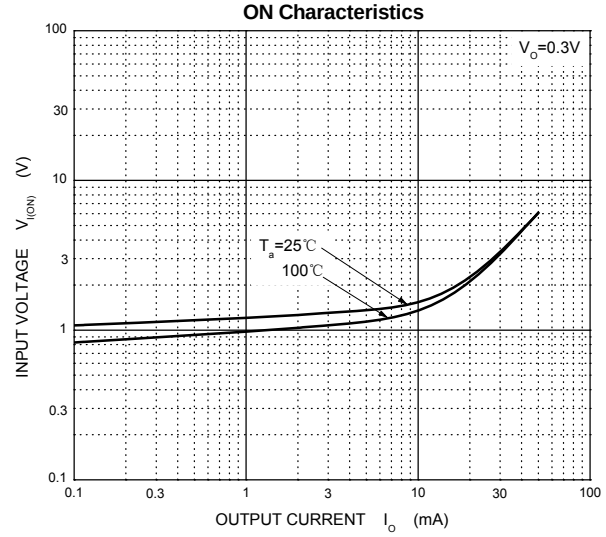
C_O —— V_R



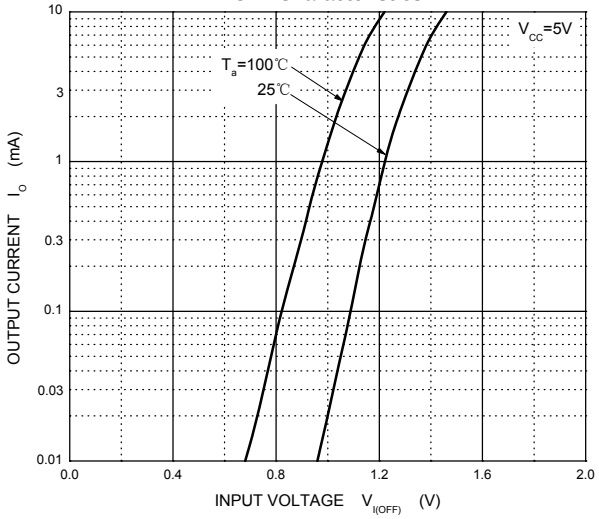
P_D —— T_a



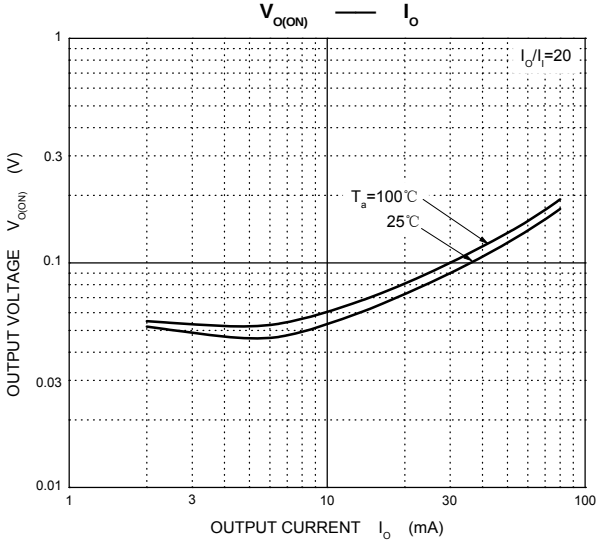
ON Characteristics



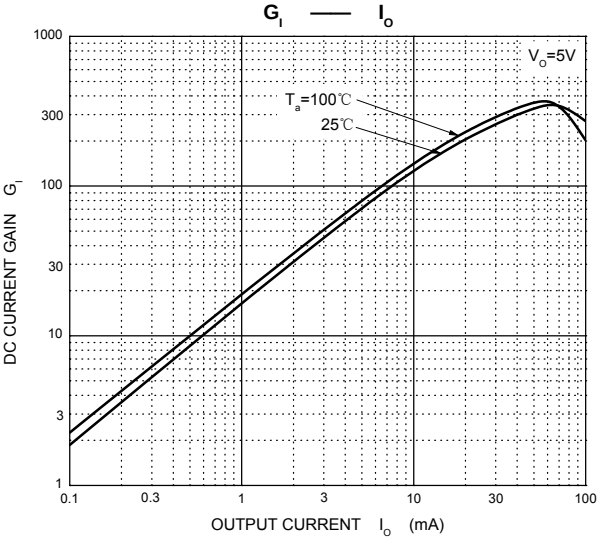
OFF Characteristics



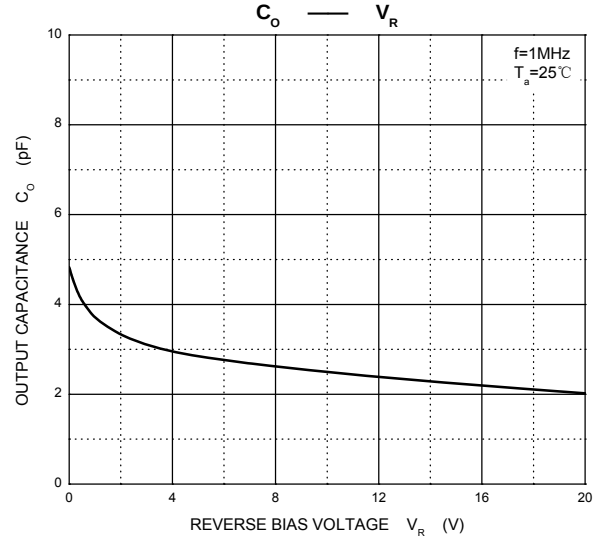
$V_{O(ON)}$ —— I_O



G_I —— I_O



C_O —— V_R



P_D —— T_a