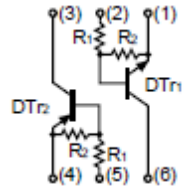
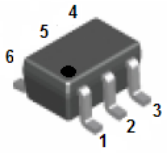
UMD22N

Dual Digital Transistor(NPN+PNP)

Features

- Both the DTA143Z chip and DTC143Z chip in SOT-363 Package
- Reduces board space
- Reduces component count
- Surface mount package suited for automated assembly





SOT-363

Mechanical Data

- Case: SOT-363
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
UMD22N	SOT-363	3000 pcs / Tape & Reel	D22

Maximum Ratings (@ T_A = 25℃ unless otherwise specified)

Symbol	Parameter	Value		Unit
		T_{r1}	T_{r2}	
V_{CC}	Supply Voltage	50	-50	V
V_{IN}	Input Voltage	-5 to +30	-30 to +5	V
I_O	Output Current	100	-100	mA
I_C	Collector Current	100	-100	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	200	mW
Operating Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Electrical Characteristics-T_{r1} (@ T_A = 25℃ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(off)}$	V_{CC} = 5V, I_O = 100μA	0.5	-	-	V
	$V_{I(on)}$	V_O = 0.3V, I_O = 5mA	-	-	1.3	V
Output Voltage	$V_{O(on)}$	Io = 5mA, I_I = 0.25mA	-	0.1	0.3	V
Input Current	I_I	V_I = 5V	-	-	1.8	mA
Output Current	$I_{O(off)}$	V_{CC} = 50V, V_I = 0V	-	-	0.5	μA
DC Current Gain	G_I	V_O = 5V, I_O = 10mA	80	-	-	-
Input Resistor	R_1		3.29	4.7	6.11	kΩ
Resistance Ratio	R_2/R_1		8	10	12	-
Gain-Bandwidth Product	f_T	V_{CE} = 10V, I_E = -5mA, f = 100MHz	-	250	-	MHz

Electrical Characteristics-T_{r2} (@ T_A = 25℃ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(off)}$	V_{CC} = -5V, I_O = -100μA	-0.5	-	-	V
	$V_{I(on)}$	V_O = -0.3V, I_O = -5mA	-	-	-1.3	V
Output Voltage	$V_{O(on)}$	Io = -5mA, I_I = -0.25mA	-	-0.1	-0.3	V
Input Current	I_I	V_I = -5V	-	-	-1.8	mA
Output Current	$I_{O(off)}$	V_{CC} = -50V, V_I = 0V	-	-	-0.5	uA
DC Current Gain	G_I	V_O = -5V, I_O = -10mA	80	-	-	-
Input Resistor	R_1		3.29	4.7	6.11	kΩ
Resistance Ratio	R_2/R_1		8	10	12	-
Gain-Bandwidth Product	f_T	V_{CE} = -10V, I_E = 5mA, f = 100MHz	-	250	-	MHz

Ratings and Characteristics Curves-T_{r1} (@ T_A = 25°C unless otherwise specified)

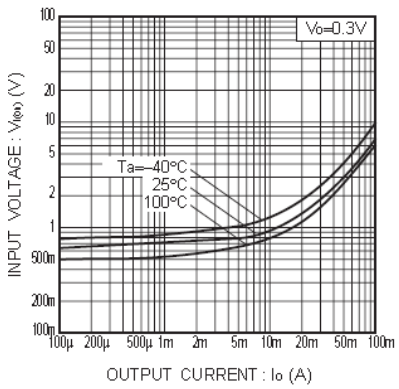


Fig.1 Input voltage vs. output current (ON characteristics)

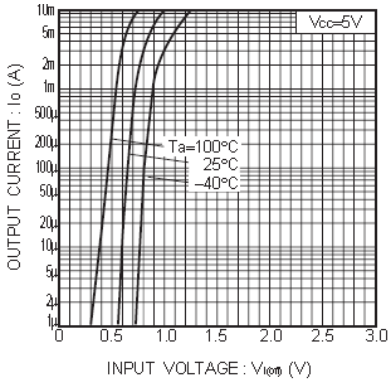


Fig.2 Output current vs. input voltage (OFF characteristics)

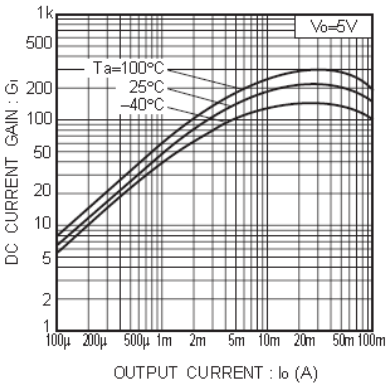


Fig.3 DC current gain vs. output current

Ratings and Characteristics Curves-T_{r2} (@ T_A = 25°C unless otherwise specified)

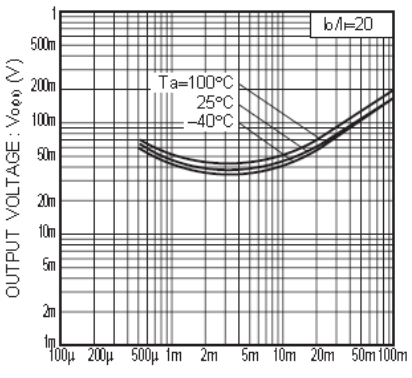


Fig.1 Output voltage vs. output current

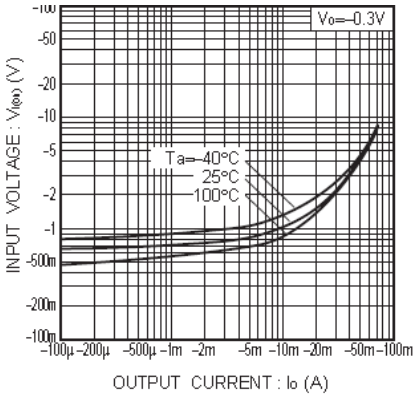


Fig.2 Input voltage vs. output current (ON characteristics)

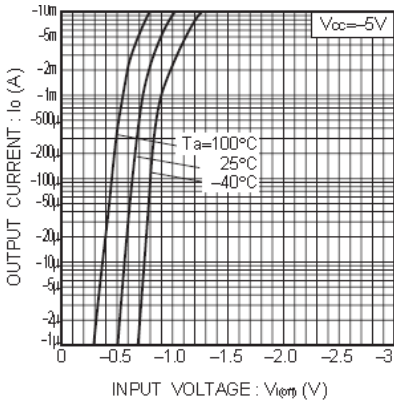


Fig.3 Output current vs. input voltag (OFF characteristics)

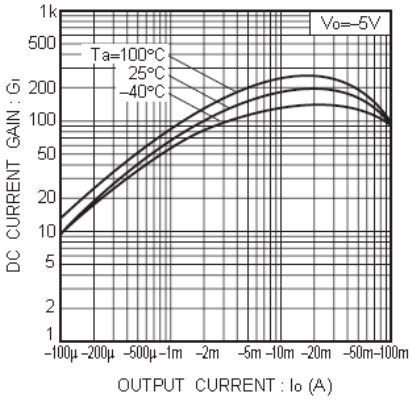


Fig.4 DC current gain vs. output current

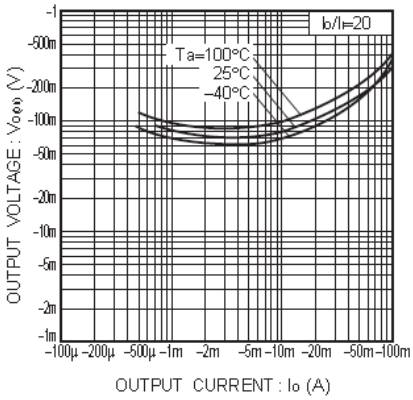
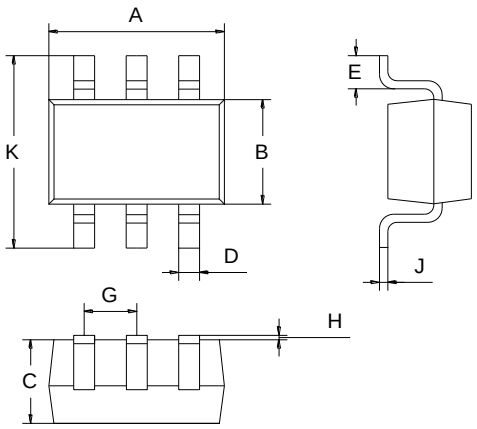


Fig.5 Output voltage vs. output current

Package Outline Dimensions (Unit: mm)



SOT-363		
Dimension	**Min.**	**Max.**
A	2.00	2.20
B	1.15	1.35
C	0.85	1.05
D	0.15	0.35
E	0.25	0.40
G	0.60	0.70
H	0.02	0.10
J	0.05	0.15
K	2.20	2.40

Package Outline Dimensions (Unit: mm)

SOT-363