

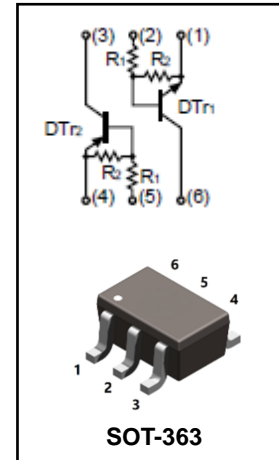


Features

- Both the DTA144E and DTC144E transistor in SOT-363 Package
- Built-in biasing resistors (R₁: 47kΩ, R₂: 47kΩ)
- Reduces board space
- Reduces component count
- Surface mount package suited for automated assembly

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
UMD12N	SOT-363	3000 pcs / Tape & Reel	D12

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Symbol	Parameter	Value		Unit
		DT _{r1}	DT _{r2}	
V _{CC}	Supply Voltage	50	-50	V
V _{IN}	Input Voltage	-10 to +40	-40 to +10	V
I _O	Output Current	30	-30	mA
I _C	Collector Current	100	-100	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	150	mW
Operating Junction Temperature Range	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C



Electrical Characteristics-DT_{r1} (@ T_A = 25°C 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
Input Voltage	V _{I(ON)}	V _O = 0.3V, I _o = 2mA	-	-	3	V
Output Voltage	V _{O(on)}	I _o = 10mA, I _I = 0.5mA	-	-	0.3	V
Input Current	I _I	V _I = 5V	-	-	0.18	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 = 5mA	68	-	-	-
Input Resistor	R ₁		32.9	47	61.1	kΩ
Resistance ratio	R ₂ /R ₁		0.8	1.0	1.2	-
Gain-Bandwidth Product	f _T	V _{CE} = 10V, I _E = 5mA f = 100MHz	-	250	-	MHz

Electrical Characteristics-DT_{r2} (@ T_A = 25°C 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
Input Voltage	V _{I(ON)}	V _O = -0.3V, I _o = -2mA	-	-	-3	V
Output Voltage	V _{O(on)}	I _o = -10mA, I _I = -0.5mA	-	-	-0.3	V
Input Current	I _I	V _I = -5V	-	-	-0.18	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 = -5mA	68	-	-	-
Input Resistor	R ₁		32.9	47	61.1	kΩ
Resistance ratio	R ₂ /R ₁		0.8	1.0	1.2	-
Gain-Bandwidth Product	f _T	V _{CE} = -10V, I _E = -5mA f = 100MHz	-	250	-	MHz

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

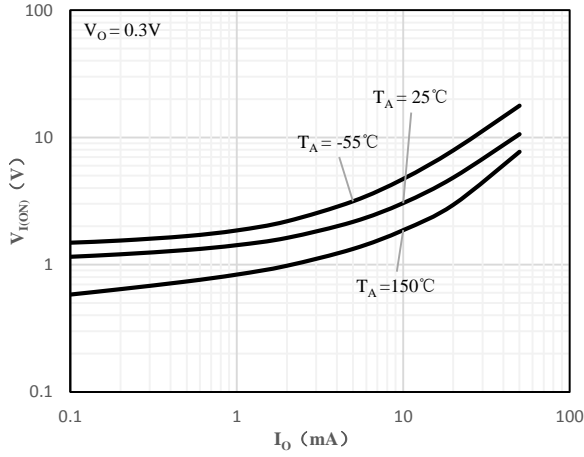


Fig 1 Input Voltage vs Output Current

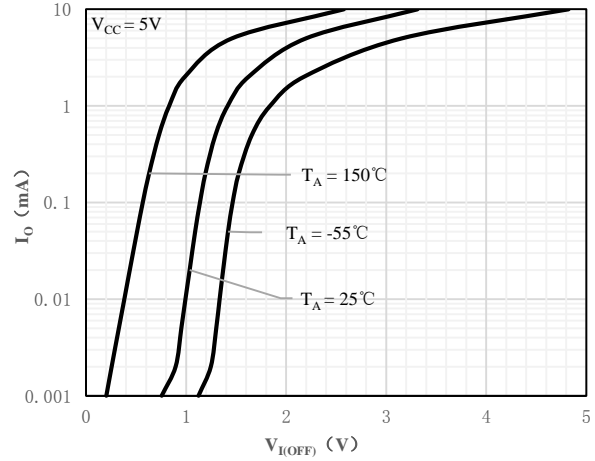


Fig 2 Output Current vs Input Voltage

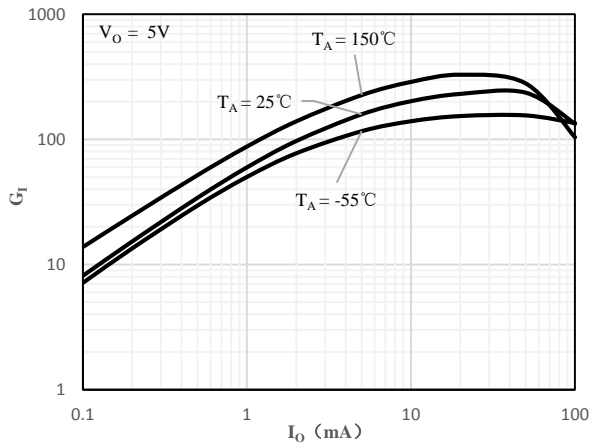


Fig 3 DC Current Gain vs Output Current

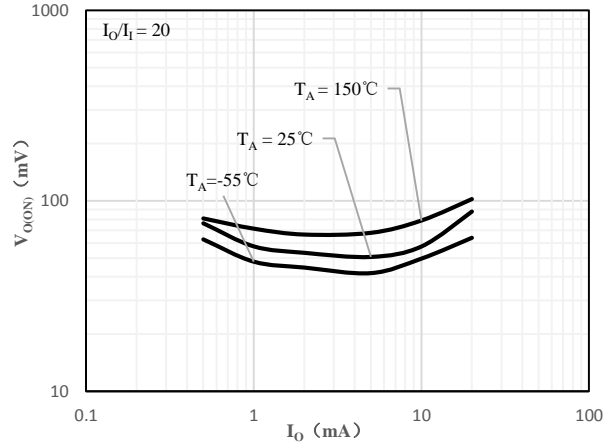


Fig 4 Output Voltage vs Output Current



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

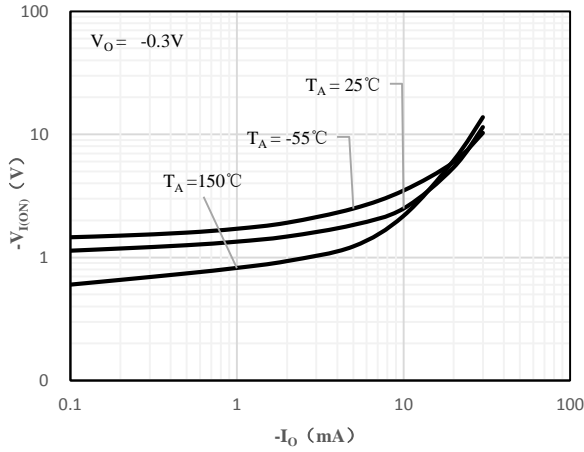


Fig 1 Input Voltage vs Output Current

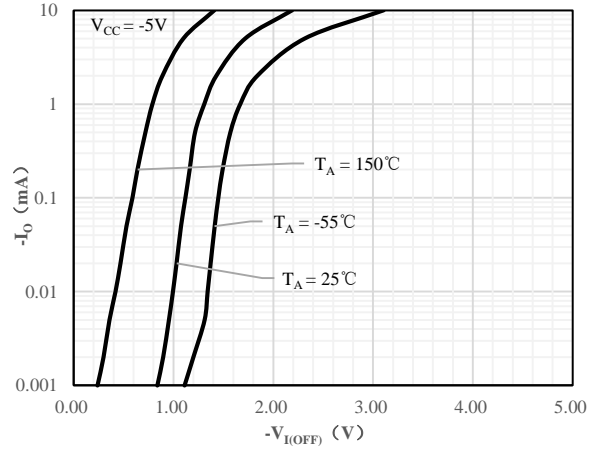


Fig 2 Output Current vs Input Voltage

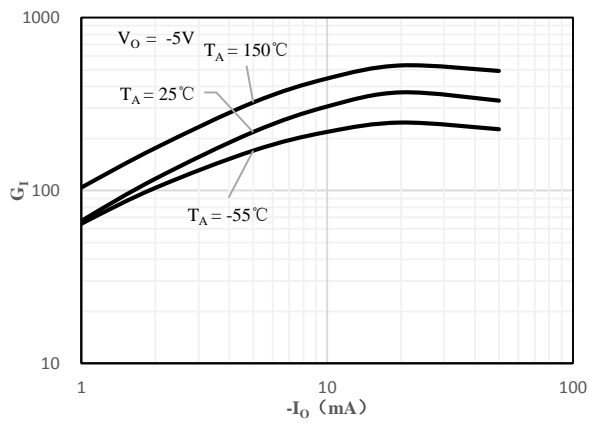


Fig 3 DC Current Gain vs Output Current

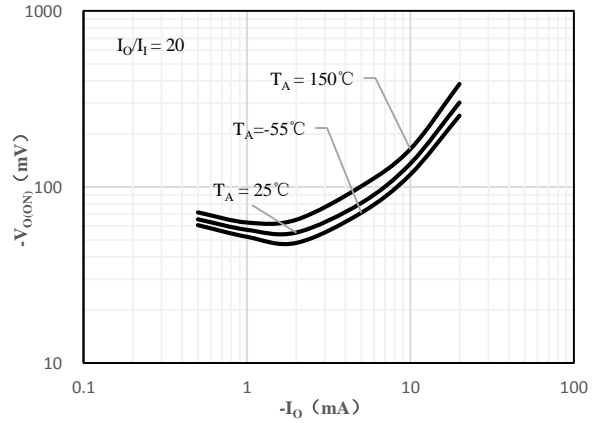
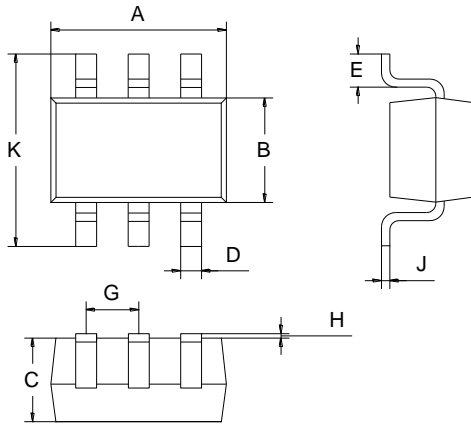


Fig 4 Output Voltage vs Output Current



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

