Dual Digital Transistors

TEMD12

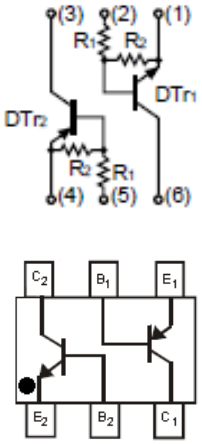
Features

HF

- Both the DTA144E chip and DTC144E chip in SOT-563 Package
- Reduces board space
- Reduces component count
- Surface mount package suited for automated assembly
- Halogen free
- Qualified to AEC-Q101 standards for high reliability

Mechanical Data

- Case: SOT-563
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



SOT-563

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
TEMD12	SOT-563	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	+10 to -40	V
I_O	Output Current	30	-30	mA
I_C	Collector Current	100	-100	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation *1	P_D	150	mW
Operating Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Note 1: 120mW per element must not be exceeded

Electrical Characteristics-DT_{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 = 2mA	-	-	3	V
Output Voltage	$V_{O(on)}$	Io = 10mA, I_I = 0.5mA	-	0.1	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	R2/R1		0.8	1	1.2	
Gain-Bandwidth Product	f_T	V_{CE} = 10V, I_E = 5mA, f = 100MHz	-	250	-	MHz

Electrical Characteristics- DT_{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 = -2mA	-	-	-3	V
Output Voltage	$V_{O(on)}$	Io = -10mA, I_I = -0.5mA	-	-0.1	-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	uA
DC Current Gain	G_I	V_O = -5V, I_O = -5mA	68	-	-	-
Input Resistor	R_1		32.9	47	61.1	kΩ
Resistance Ratio	R2/R1		0.8	1	1.2	
Gain-Bandwidth Product	f_T	V_{CE} = -10V, I_E = -5mA, f = 100MHz	-	250	-	MHz

Ratings and Characteristics Curves-DTr1 (@ T_A = 25°C unless otherwise specified)

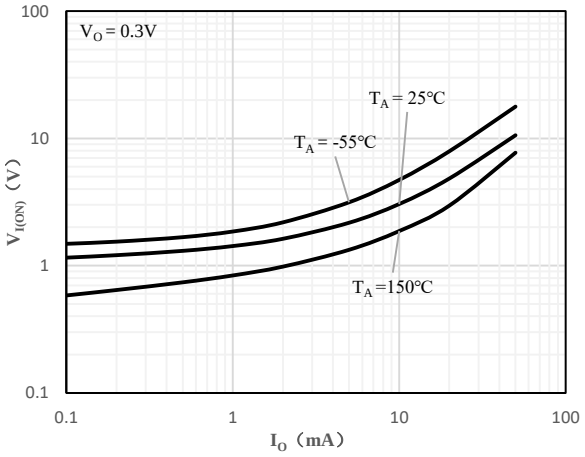


Fig 1 Input Voltage vs Output Current

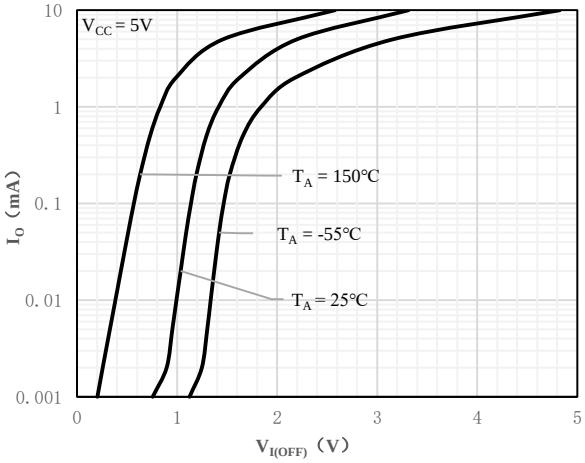


Fig 2 Output Current vs Input Voltage

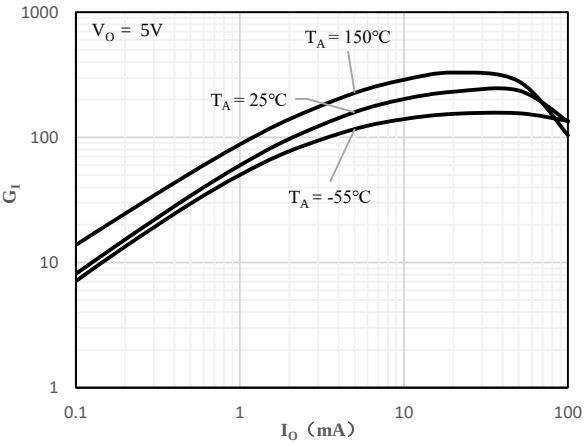


Fig 3 DC Current Gain vs Output Current

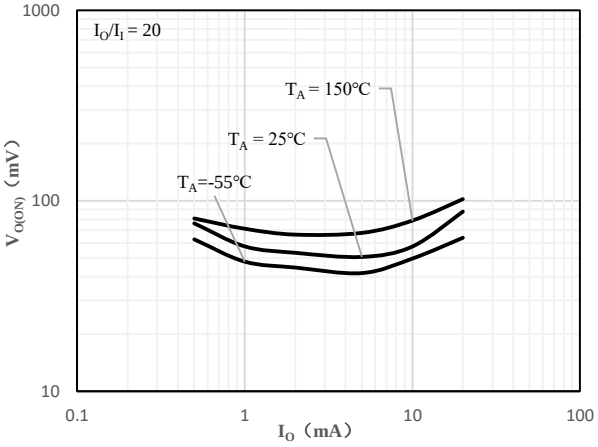


Fig 4 Output Voltage vs Output Current

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

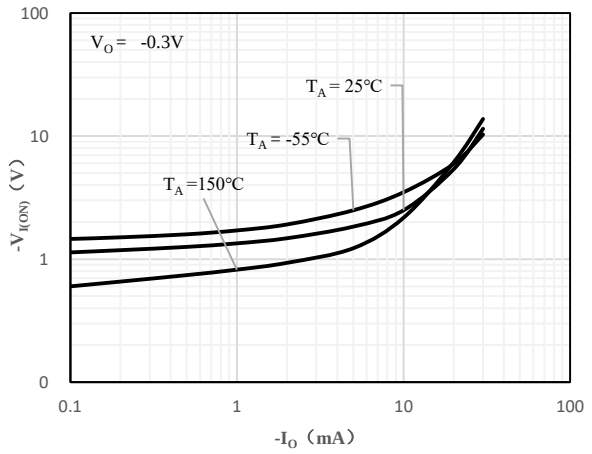


Fig 1 Input Voltage vs Output Current

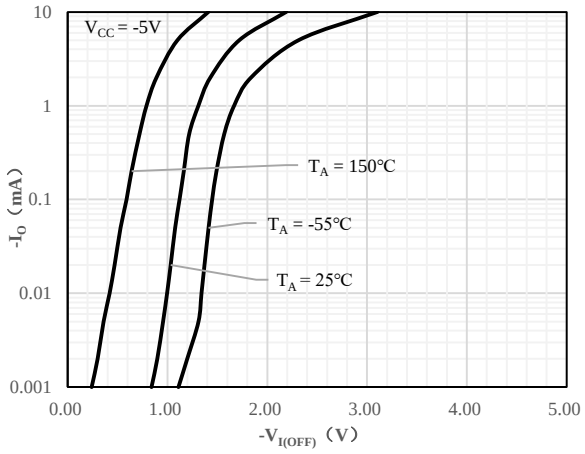


Fig 2 Output Current vs Input Voltage

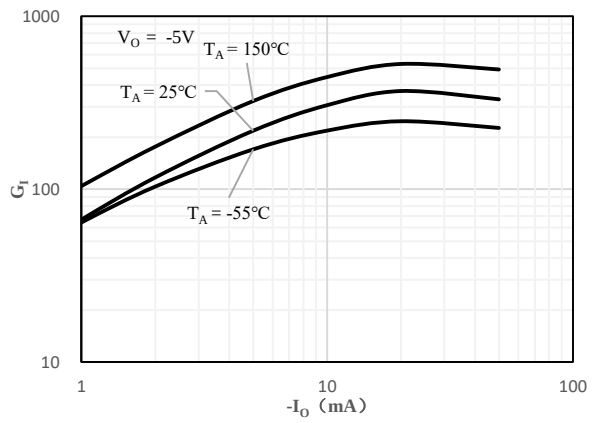


Fig 3 DC Current Gain vs Output Current

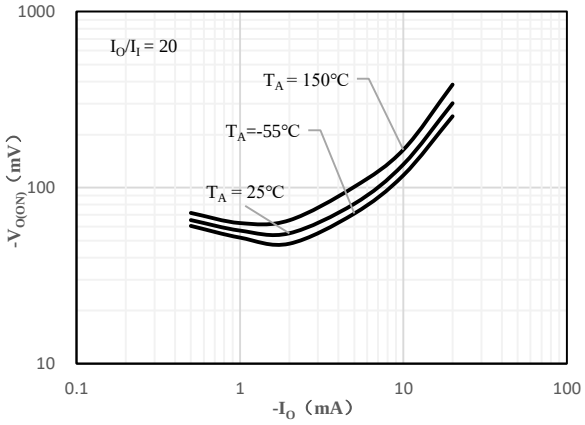
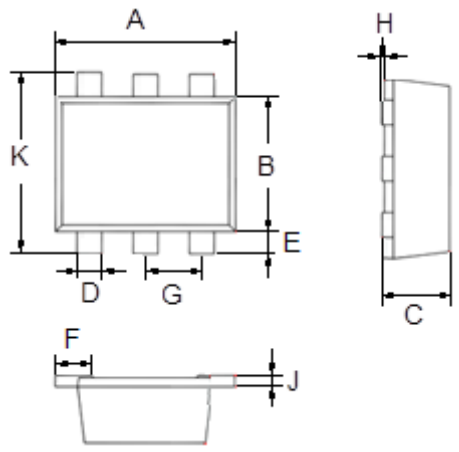


Fig 4 Output Voltage vs Output Current

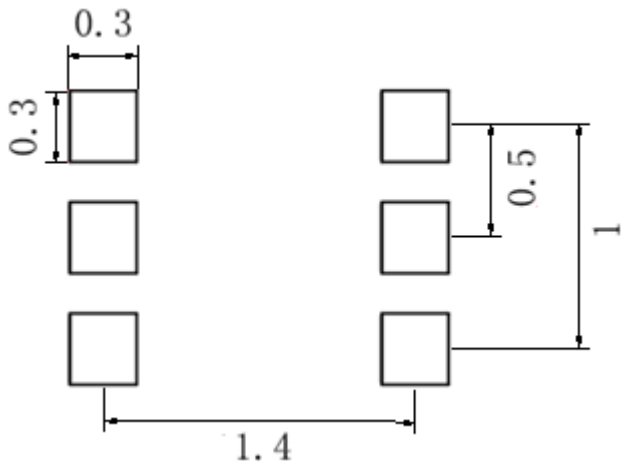
Package Outline Dimensions (Unit: mm)



SOT-563		
Dimension	**Min.**	**Max.**
A	1.500	1.700
B	1.100	1.300
C	0.525	0.600
D	0.170	0.270
E	0.100	0.300
F	0.250	0.350
G	0.450	0.550
H	0.000	0.050
J	0.090	0.160
K	1.500	1.700

Package Outline Dimensions (Unit: mm)

SOT-563



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