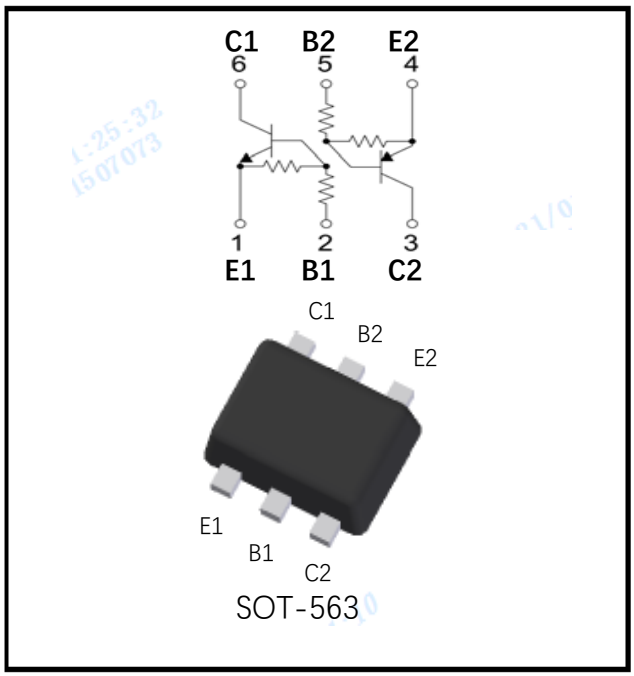
Digital Transistors (Built-in Resistors)



Features

- Epoxy meets UL-94 V-0 flammability rating
- Surface mount package ideally Suited for Automatic Insertion
- NPN+PNP

Mechanical Data

- **Package**: SOT-563
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** D3
- **Solid point:** E1 positioning point

■Maximum Ratings (Ta=25℃ Unless otherwise specified）

DTR1-NPN

Item	Symbol	Unit	Conditions	Value
Supply Voltage	V_{CC}	V		50
Input Voltage	V_{IN}	V		-10 to +40
Output Current	I_O	mA		100
Power Dissipation	P_D	mW		150
Junction Temperature （Single）	Tj	℃		150
Storage Temperature	T_{STG}	℃		-55 to +150

DTR2-PNP

Item	Symbol	Unit	Conditions	Value
Supply Voltage	V_{CC}	V		-50
Input Voltage	V_{IN}	V		-40 to +10
Output Current	I_O	mA		-100
Power Dissipation	P_D	mW		150
Junction Temperature	Tj	℃		150
Storage Temperature	T_{STG}	℃		-55 to +150

■Electrical Characteristics (Ta=25℃ unless otherwise specified)

DTR1-NPN

Item	Symbol	Unit	Conditions	Min	TYP	Max
Input voltage	$VI_{(off)}$	V	V_{CC}=5V,Ic=100uA	0.5	-	-
	$VI_{(on)}$	V	V_O=0.3V,Ic=10mA	-	-	3
Output voltage	$Vo_{(on)}$	V	Io /Ii =10mA/0.5 mA	-	-	0.3
Input current	I_I	mA	V_I=5V	-	-	0.88
Output current	$I_{O(off)}$	uA	V_{CC}=50V, Vi=0	-	-	0.5
DC current gain	G_I		Vo=5V, Io =5mA	30	-	-
Input resistance	R_1	kΩ		7	10	13
Resistance ratio	R_2/R_1			0.8	1	1.2
Transition frequency	f_T	MHz	V_{CE}=10V,I_E=5mA,f=100MHz	-	250	-

DTR2-PNP

Item	Symbol	Unit	Conditions	Min	TYP	Max
Input voltage	$VI_{(off)}$	V	V_{CC}=-5V,Ic=-100uA	-0.5	-	-
	$VI_{(on)}$	V	V_O=-0.3V,Ic=-10mA	-	-	-3
Output voltage	$Vo_{(on)}$	V	Io /Ii =-10mA/-0.5 mA	-	-	-0.3
Input current	I_I	mA	V_I=-5V	-	-	-0.88
Output current	$I_{O(off)}$	uA	V_{CC}=-50V, Vi=0	-	-	-0.5
DC current gain	G_I		Vo=-5V, Io =-5mA	30	-	-
Input resistance	R_1	kΩ		7	10	13
Resistance ratio	R_2/R_1			0.8	1	1.2
Transition frequency	f_T	MHz	V_{CE}=-10V,I_E=-5mA,f=100MHz	-	250	-

■ Ordering Information (Example)

Prefered P/N	Packing Code	Unit Weight(G)	Minimum Package(Pcs)	Inner Box Quantity(Pcs)	Outer Carton Quantity(Pcs)	Delivery Mode
EMD3	F2	Approximate 0.0035	3000	30000	120000	7” reel

■ **Characteristics** (Typical)

Fig. 1 - DTR1 DC Current Gain Characteristics

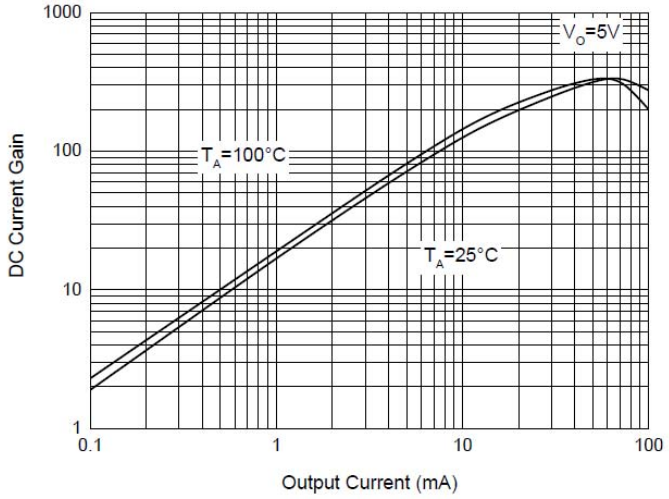


Fig. 2 - DTR1 Input Voltage (on) Characteristics

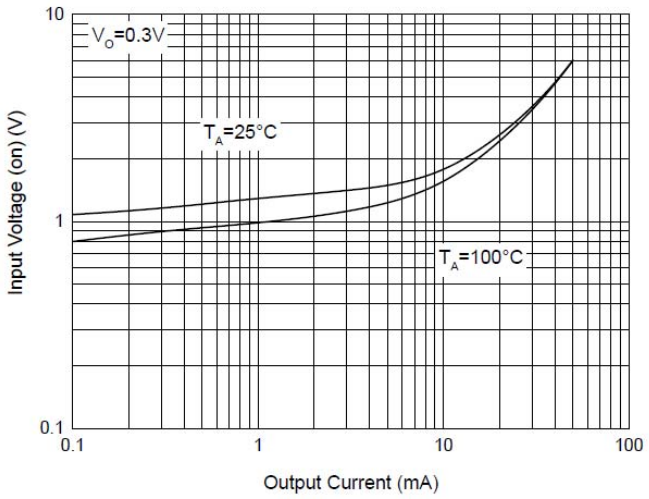


Fig. 3 - DTR1 Input Voltage (off) Characteristics

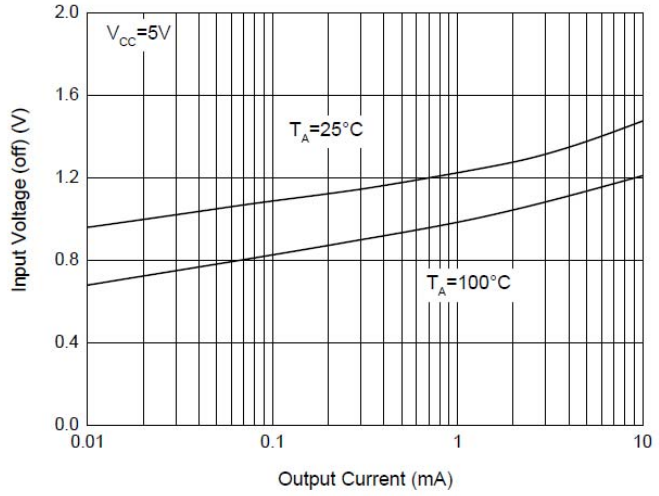


Fig. 4 - DTR1 Output Voltage Characteristics

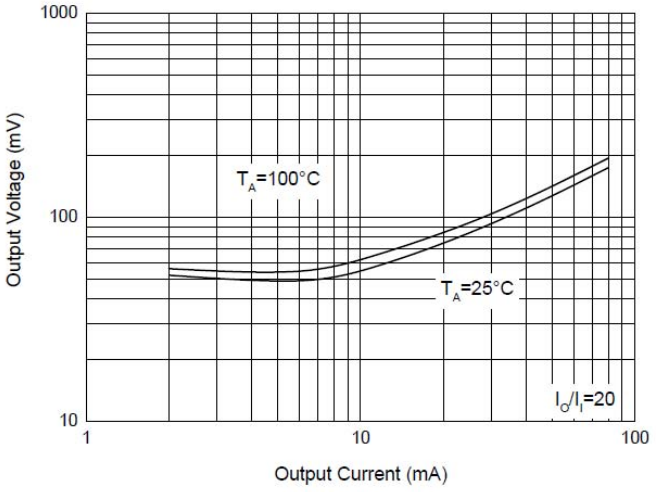


Fig. 5 - DTR2 DC Current Gain Characteristics

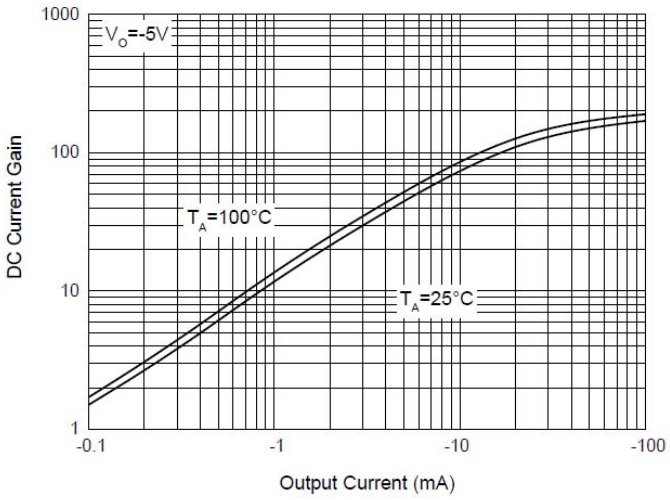


Fig. 6 - DTR2 Input Voltage (on) Characteristics

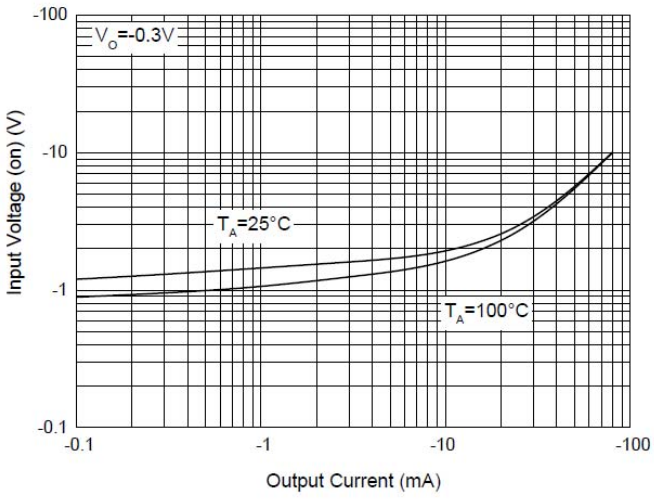


Fig. 7 - DTR2 Input Voltage (off) Characteristics

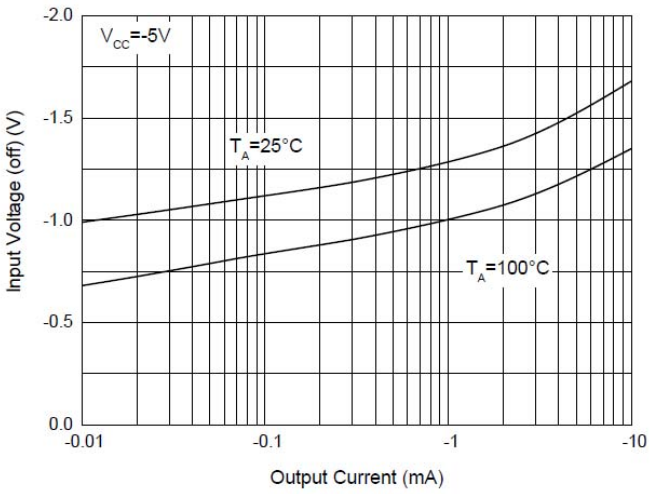
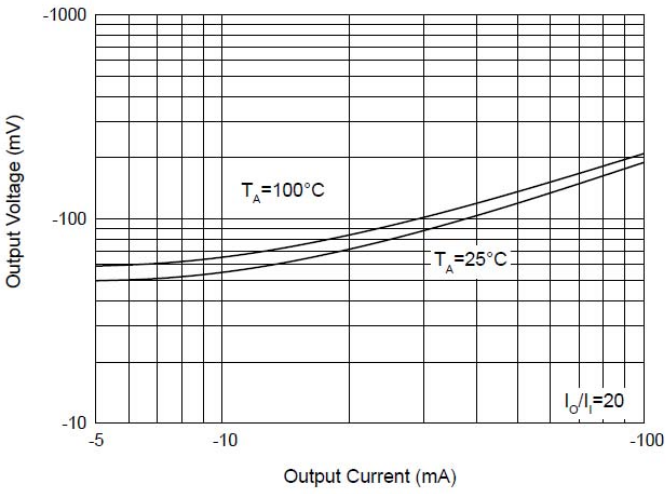
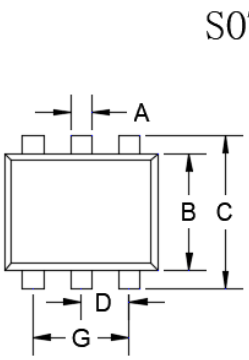


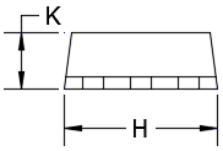
Fig. 8 - DTR2 Output Voltage Characteristics



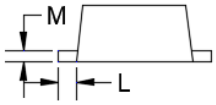
■ Outline Dimensions



TOP VIEW



SIDE VIEW

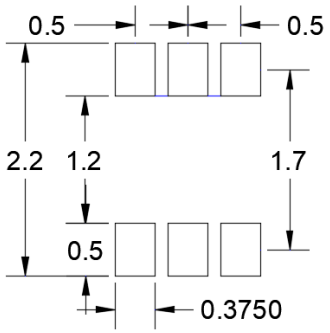


SIDE VIEW

SOT-563

DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MN	MAX
A	0.006	0.011	0.150	0.300
B	0.043	0.051	1.100	1.300
C	0.059	0.067	1.500	1.700
D	0.016	0.024	0.400	0.600
G	0.035	0.043	0.900	1.100
H	0.059	0.067	1.500	1.700
K	0.021	0.026	0.550	0.650
L	0.004	0.011	0.100	0.300
M	0.004	0.007	0.100	0.180

■ Suggested Pad Layout



单位：mm

SUGGESTED SOLDER PAD LAYOUT

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