

Features

- Transistor Elements Independent, Eliminating Interference
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings @ 25°C Unless Otherwise Specified

- Thermal Resistance: 833°C/W Junction to Ambient

DTR1-NPN

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-10~+40	V
Output Current	I_O	100	mA
Power Dissipation	P_D	150	mW
Junction Temperature	T_J	-55~+150	°C
Storage Temperature	T_{stg}	-55~+150	°C

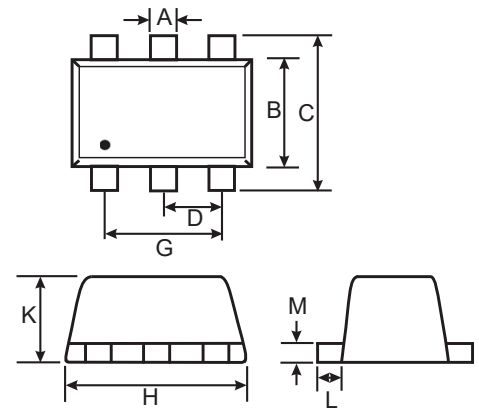
DTR2-PNP

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	-50	V
Input Voltage	V_{IN}	-40~+10	V
Output Current	I_O	-100	mA
Power Dissipation	P_D	150	mW
Junction Temperature	T_J	-55~+150	°C
Storage Temperature	T_{stg}	-55~+150	°C

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

NPN&PNP Digital Transistor

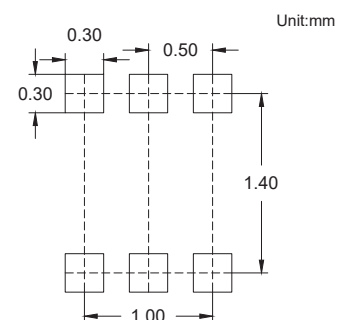
SOT-563



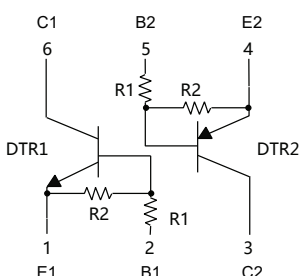
DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.006	0.011	0.15	0.30	
B	0.043	0.051	1.10	1.30	
C	0.059	0.067	1.50	1.70	
D	0.020		0.50		TYP.
G	0.035	0.043	0.90	1.10	
H	0.059	0.067	1.50	1.70	
K	0.022	0.026	0.55	0.65	
L	0.004	0.011	0.10	0.30	
M	0.004	0.007	0.10	0.18	

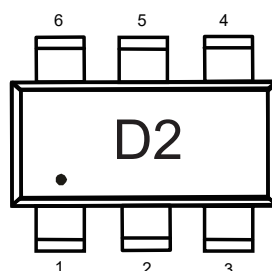
Suggested Solder Pad Layout



Internal Structure



Device Marking



Electrical Characteristics @ 25°C Unless Otherwise Specified
DTR1-NPN

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input Voltage	$V_{I(off)}$	0.5	---	---	V	$V_{CC}=5V, I_O=100\mu A$
	$V_{I(on)}$	---	---	3.0	V	$V_O=0.2V, I_C=5mA$
Output Voltage	$V_{O(on)}$	---	---	0.3	V	$I_O=10mA, I_I=0.5mA$
Input Current	I_I	---	---	0.36	mA	$V_I=5V$
Output Current	$I_{O(off)}$	---	---	0.5	μA	$V_{CC}=50V, V_I=0$
DC Current Gain	G_I	56	---	---		$V_O=5V, I_O=5mA$
Input Resistance	R_I	15.4	22	28.6	K Ω	
Resistance Ratio	R_2/R_1	0.8	1.0	1.2		
Transition Frequency	f_T	200	---	---	MHz	$V_{CE}=10V, I_E=5mA, f=100MHz$

DTR2-PNP

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input Voltage	$V_{I(off)}$	-0.5	---	---	V	$V_{CC}=-5V, I_O=-100\mu A$
	$V_{I(on)}$	---	---	-3.0	V	$V_O=-0.2V, I_O=-5mA$
Output Voltage	$V_{O(on)}$	---	---	-0.3	V	$I_O=-10mA, I_I=-0.5mA$
Input Current	I_I	---	---	-0.36	mA	$V_I=-5V$
Output Current	$I_{O(off)}$	---	---	-0.5	μA	$V_{CC}=-50V, V_I=0$
DC Current Gain	G_I	56	---	---		$V_O=-5V, I_O=-5mA$
Input Resistance	R_I	15.4	22	28.6	K Ω	
Resistance Ratio	R_2/R_1	0.8	1.0	1.2		
Transition Frequency	f_T	200	---	---	MHz	$V_{CE}=-10V, I_E=-5mA, f=100MHz$

Curve Characteristics

DTR1-NPN

Fig. 1 - DC Current Gain Characteristics

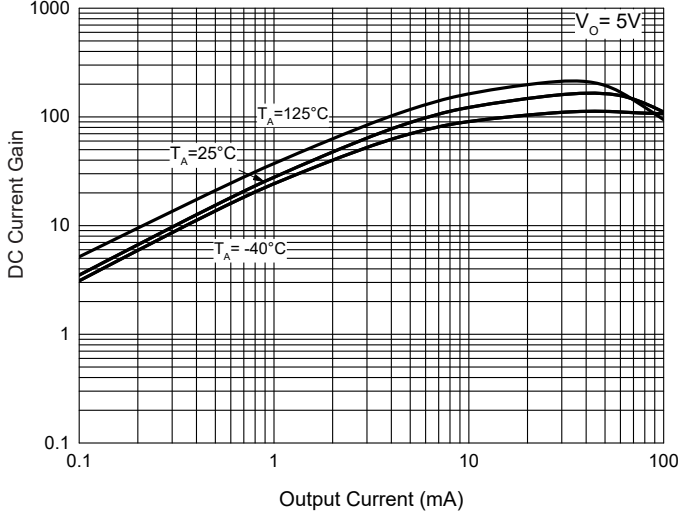


Fig. 2 - Input Voltage (on) Characteristics

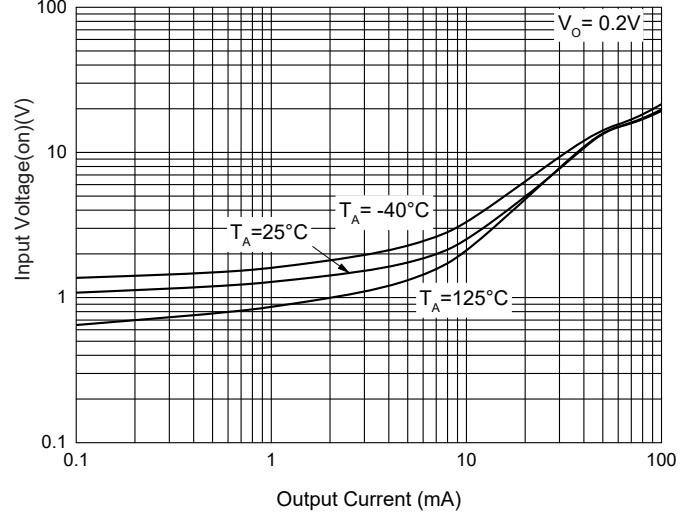


Fig. 3 - Input Voltage (off) Characteristics

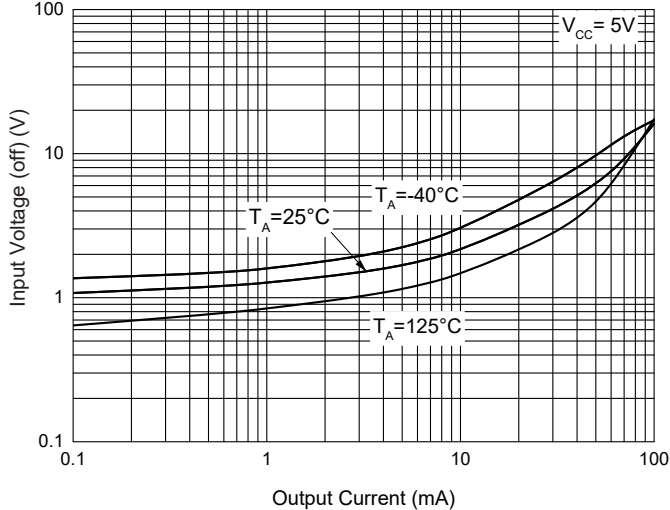


Fig. 4 - Output Voltage Characteristics

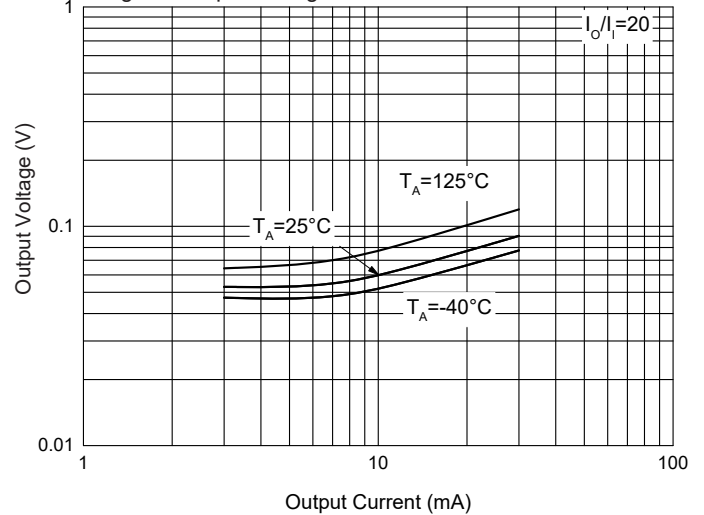
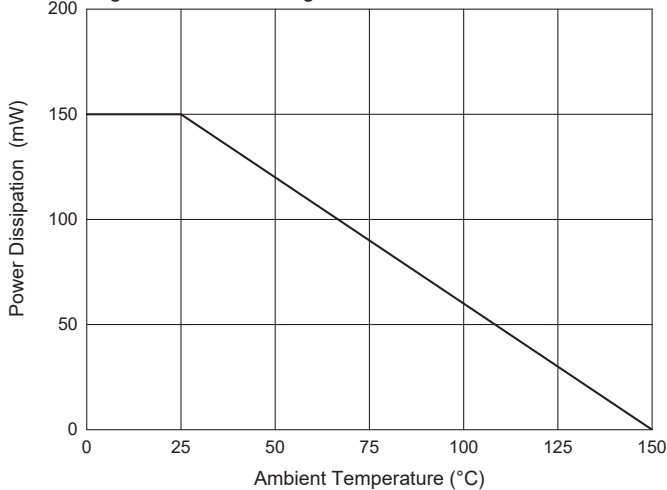


Fig. 5 - Power Derating Curve



Curve Characteristics

DTR2-PNP

Fig. 1 - DC Current Gain Characteristics

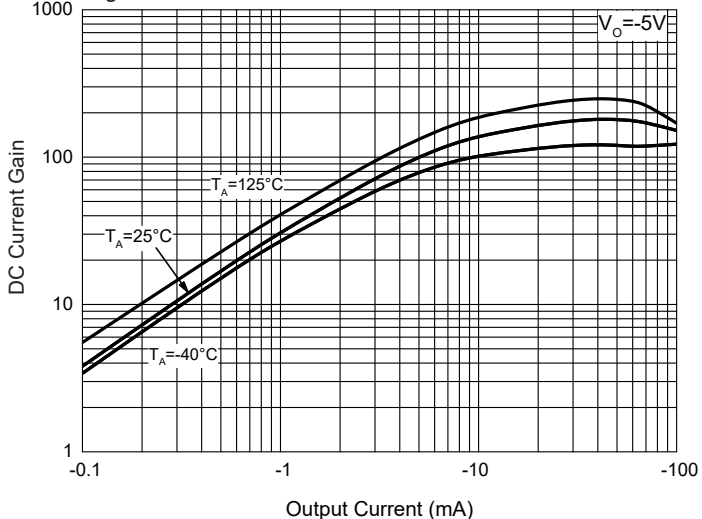


Fig. 2 - Input Voltage (on) Characteristics

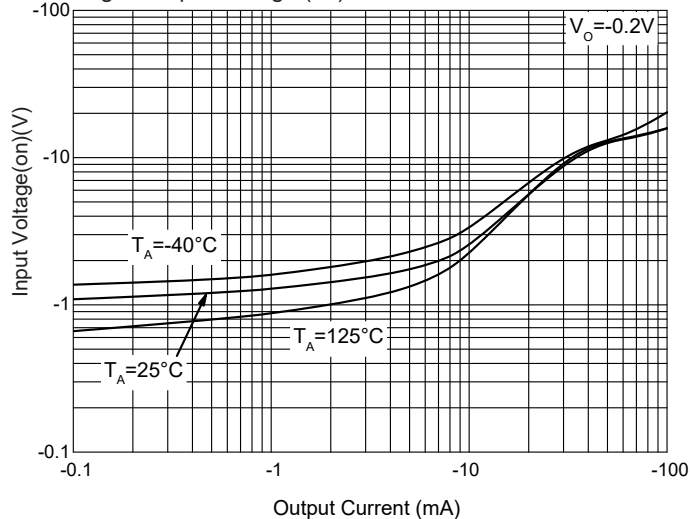


Fig. 3 - Input Voltage (off) Characteristics

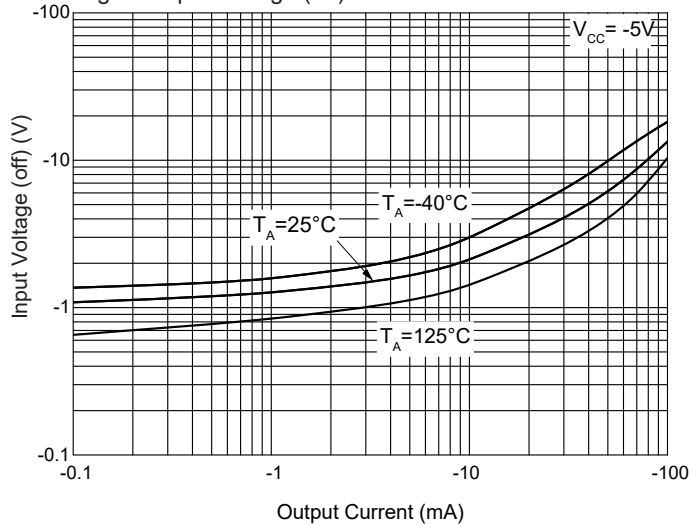


Fig. 4 - Output Voltage Characteristics

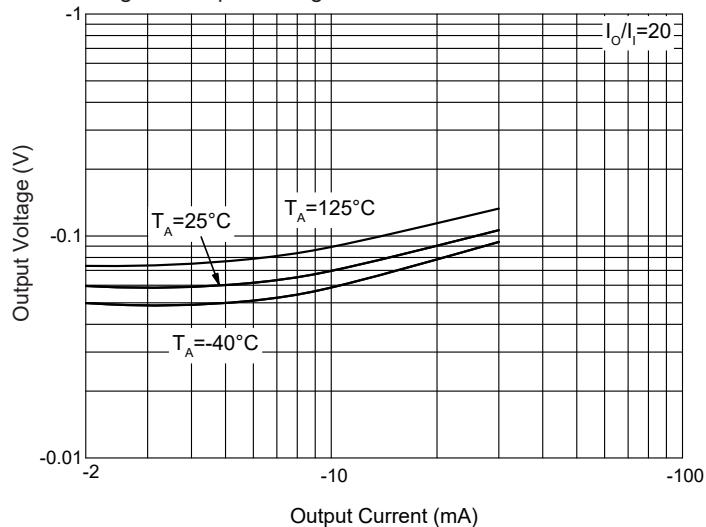
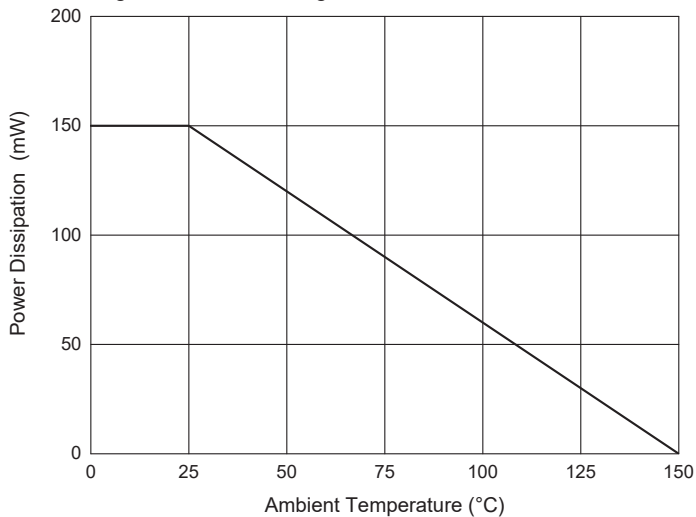


Fig. 5 - Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel

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