

Features

- 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}	-5~+30	V
Output Current	I_O	100	mA
Power Dissipation	P_D	150	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{stg}	-55~+150	°C

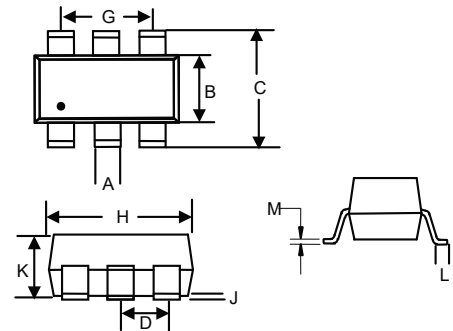
DTR2 PNP

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	-50	V
Input Voltage	V_{IN}	-30~+5	V
Output Current	I_O	-100	mA
Power Dissipation	P_D	150	mW
Junction Temperature	T_J	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.

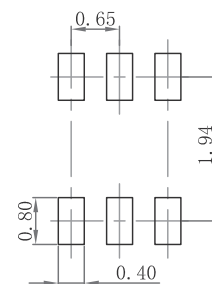
NPN&PNP Digital Transistors

SOT-363

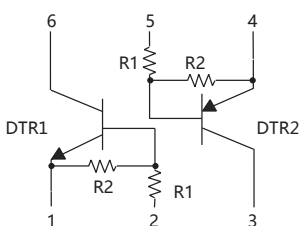


DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.006	0.014	0.15	0.35	
B	0.045	0.053	1.15	1.35	
C	0.079	0.096	2.00	2.45	
D	0.026		0.65		TYP.
G	0.047	0.055	1.20	1.40	
H	0.071	0.087	1.80	2.20	
J	-----	0.004	-----	0.10	
K	0.031	0.043	0.80	1.10	
L	0.010	0.018	0.26	0.46	
M	0.003	0.006	0.08	0.15	

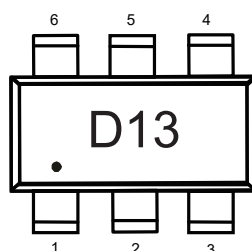
Suggested Solder Pad Layout



Internal Structure



Marking Code



Electrical Characteristics @ 25°C Unless Otherwise Specified
DTR1 NPN

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input Voltage	$V_{I(off)}$	0.5			V	$V_{CC}=5V, I_O=100\mu A$
	$V_{I(on)}$			1.3	V	$V_O=0.3V, I_O=5mA$
Output Voltage	$V_{O(on)}$			0.3	V	$I_O=10mA, I_I=0.5mA$
Input Current	I_I			1.8	mA	$V_I=5V$
Output Current	$I_{O(off)}$			0.5	μA	$V_{CC}=50V, V_I=0$
DC Current Gain	G_I	80				$V_O=5V, I_O=10mA$
Input Resistance	R_I	3.3	4.7	6.1	K Ω	
Resistance Ratio	R_2/R_1	8	10	12		
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	$V_{CC}=-5V, I_O=-100\mu A$
	$V_{I(on)}$			-1.3	V	$V_O=-0.3V, I_O=-2mA$
Output Voltage	$V_{O(on)}$			-0.3	V	$I_O=-10mA, I_I=-0.5mA$
Input Current	I_I			-1.8	mA	$V_I=-5V$
Output Current	$I_{O(off)}$			-0.5	μA	$V_{CC}=-50V, V_I=0$
DC Current Gain	G_I	80				$V_O=-5V, I_O=-10mA$
Input Resistance	R_I	3.3	4.7	6.1	K Ω	
Resistance Ratio	R_2/R_1	8	10	12		
Transition Frequency	f_T	200			MHz	$V_{CE}=-10V, I_E=-5mA, f=100MHz$

Curve Characteristics
DTR1-NPN

Fig. 1 - DC Current Gain Characteristics

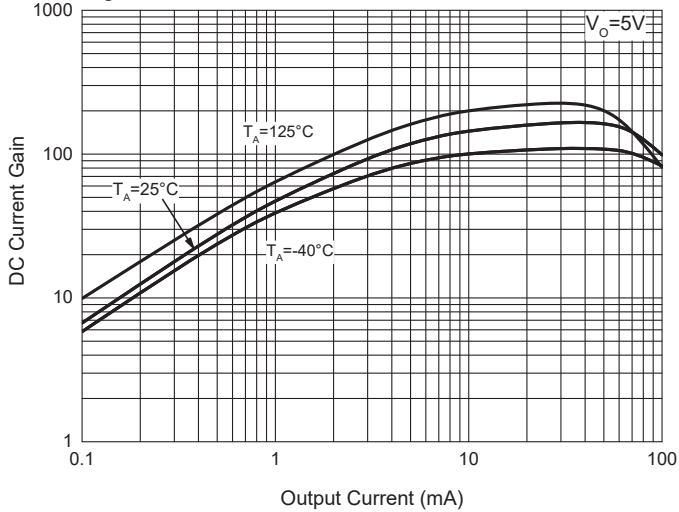


Fig. 2 - Input Voltage (on) Characteristics

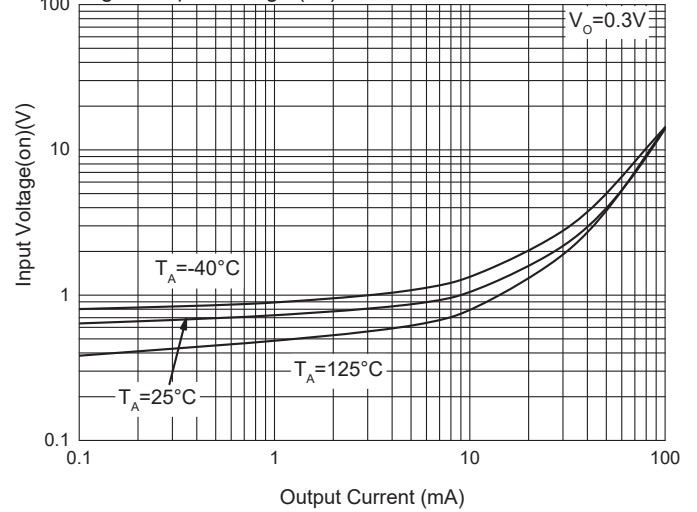


Fig. 3 - Input Voltage (off) Characteristics

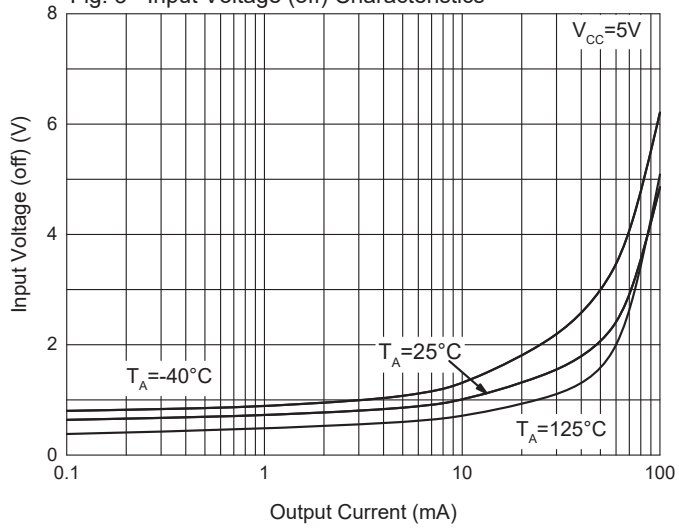


Fig. 4 - Output Voltage Characteristics

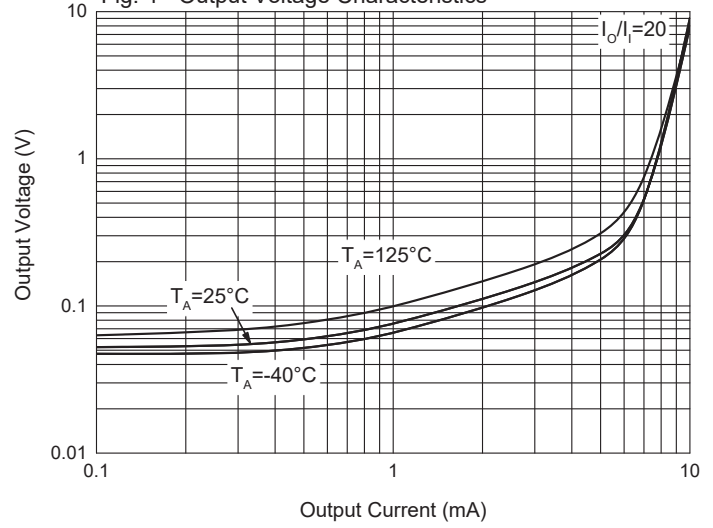
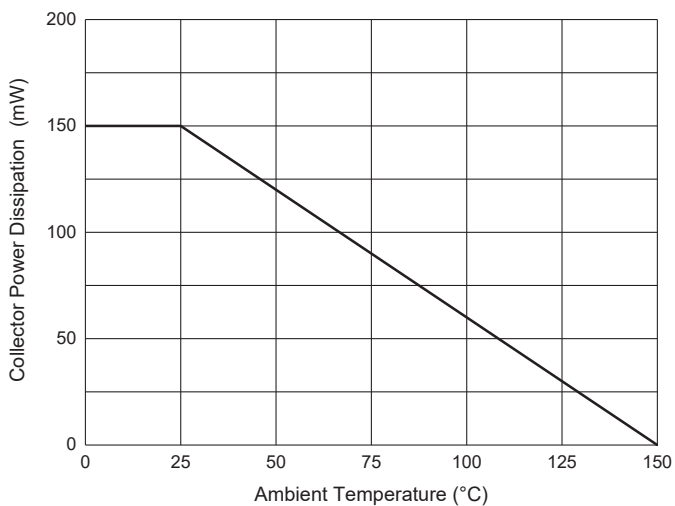


Fig. 5 - Power Derating Curve



Curve Characteristics
DTR2-PNP

Fig. 1 - DC Current Gain Characteristics

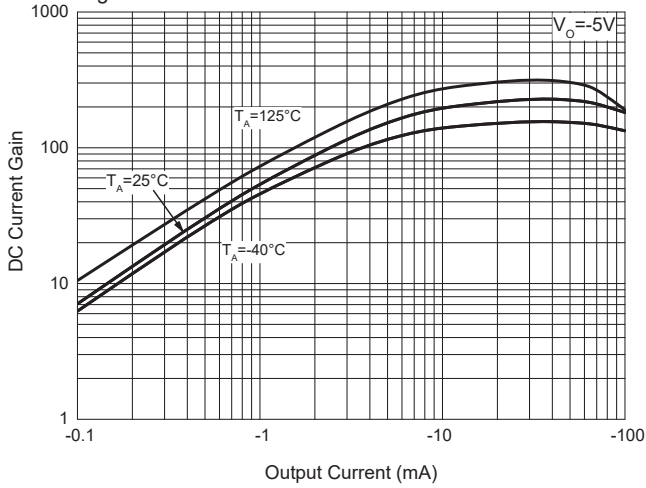


Fig. 2 - Input Voltage (on) Characteristics

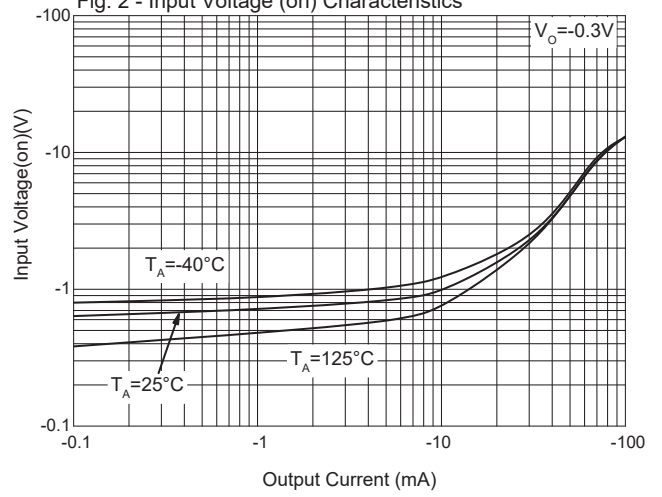


Fig. 3 - Input Voltage (off) Characteristics

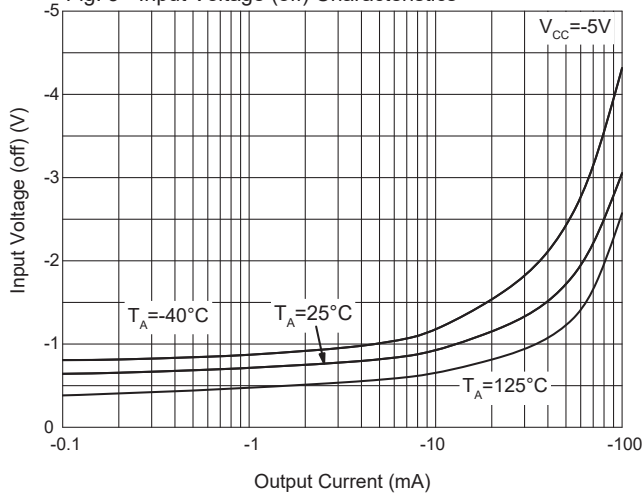


Fig. 4 - Output Voltage Characteristics

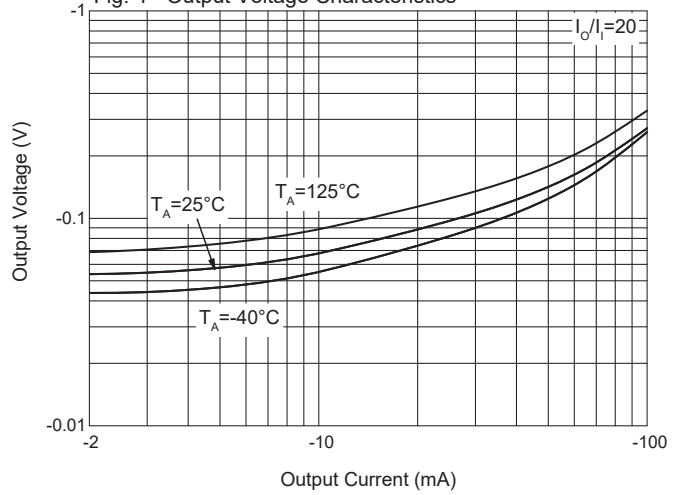
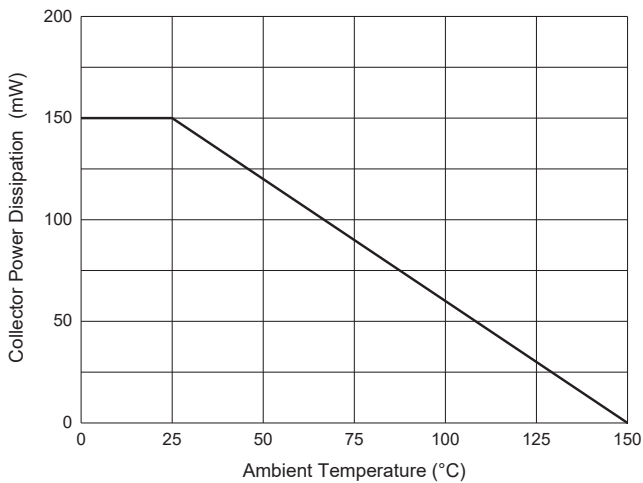


Fig. 5 - Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel
Part Number-13P	Tape&Reel:10Kpcs/Reel

For packaging details, go to our website at <https://www.mccsemi.com/pdf/ProductPackaging/SOT-363%20Package.pdf>

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