

**Features**

- Both the DTA114Y Chip and DTC114Y Chip In a Package
- Mounting Possible With SOT-363 Automatic Mounting Machines
- 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**

**DTR1**

Parameter	Symbol	Value	Unit
Supply Voltage	$V_{CC}$	50	V
Input Voltage	$V_{IN}$	-6~40	V
Output Current	$I_O$	70	mA
	$I_{C(Max)}$	100	mA
Power Dissipation	$P_D$	150	mW
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{stg}$	-55~150	°C

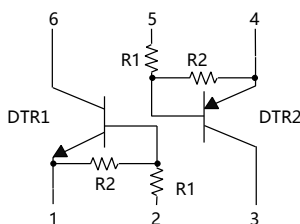
**DTR2**

Parameter	Symbol	Value	Unit
Supply Voltage	$V_{CC}$	-50	V
Input Voltage	$V_{IN}$	-40~6	V
Output Current	$I_O$	-70	mA
	$I_{C(Max)}$	-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.

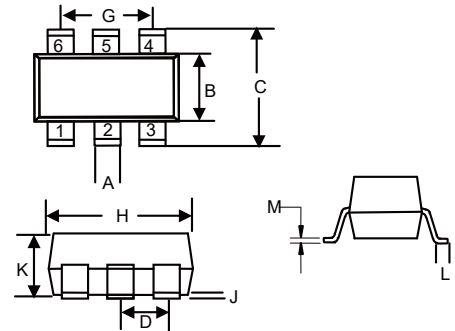
**Device Marking: D9**

**Internal Structure**



**NPN&PNP  
Digital Transistor**

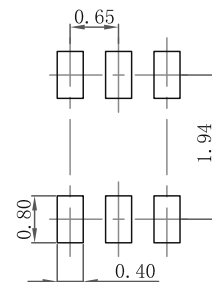
**SOT-363**



**DIMENSIONS**

DIM	INCHES		MM		NOTE
	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**



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

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input Voltage	$V_{I(off)}$	0.3	---	---	V	$V_{CC}=5V, I_O=100\mu A$
	$V_{I(on)}$	---	---	1.4	V	$V_O=0.3V, I_O=1mA$
Output Voltage	$V_{O(on)}$	---	---	0.3	V	$I_O=5mA, I_I=0.25mA$
Input Current	$I_I$	---	---	0.88	mA	$V_I=5V$
Output Current	$I_{O(off)}$	---	---	0.5	$\mu A$	$V_{CC}=50V, V_I=0$
DC Current Gain	$G_I$	68	---	---		$V_O=5V, I_O=5mA$
Input Resistance	$R_I$	7	10	13	K $\Omega$	
Resistance Ratio	$R_2/R_1$	3.7	4.7	5.7		
Transition Frequency	$f_T$	---	250	---	MHz	$V_{CE}=10V, I_E=-5mA, f=100MHz$

**DTR2 PNP**

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input Voltage	$V_{I(off)}$	-0.3	---	---	V	$V_{CC}=-5V, I_O=-100\mu A$
	$V_{I(on)}$	---	---	-1.4	V	$V_O=-0.3V, I_O=-1mA$
Output Voltage	$V_{O(on)}$	---	---	-0.3	V	$I_O=-5mA, I_I=-0.25mA$
Input Current	$I_I$	---	---	-0.88	mA	$V_I=-5V$
Output Current	$I_{O(off)}$	---	---	-0.5	$\mu A$	$V_{CC}=-50V, V_I=0$
DC Current Gain	$G_I$	68	---	---		$V_O=-5V, I_O=-5mA$
Input Resistance	$R_I$	7.0	10	13	K $\Omega$	
Resistance Ratio	$R_2/R_1$	3.7	4.7	5.7		
Transition Frequency	$f_T$	---	250	---	MHz	$V_{CE}=-10V, I_E=5mA, f=100MHz$

Curve Characteristics

Fig. 1 - DTR1 DC Current Gain Characteristics

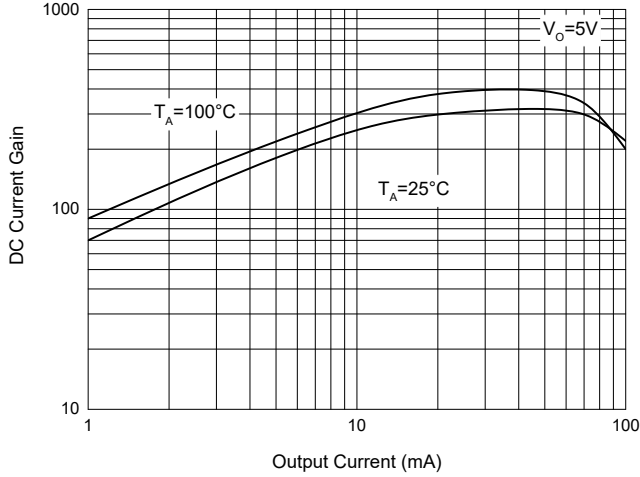


Fig. 2 - DTR1 Input Voltage (on) Characteristics

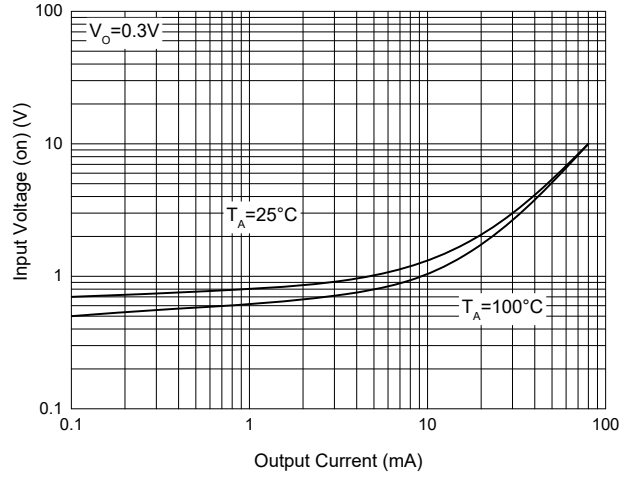


Fig. 3 - DTR1 Input Voltage (off) Characteristics

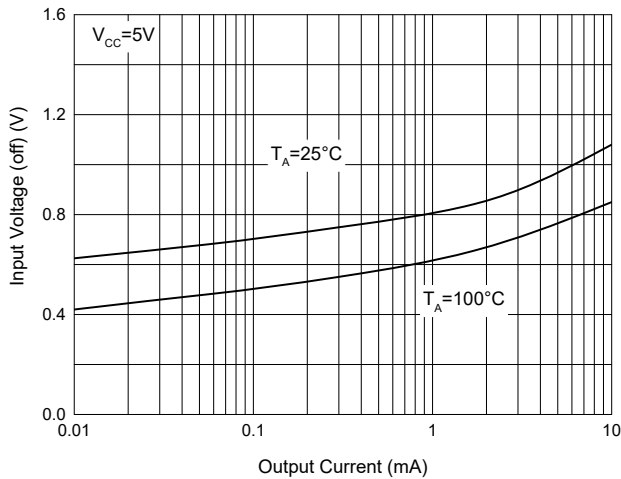


Fig. 4 - DTR1 Output Voltage Characteristics

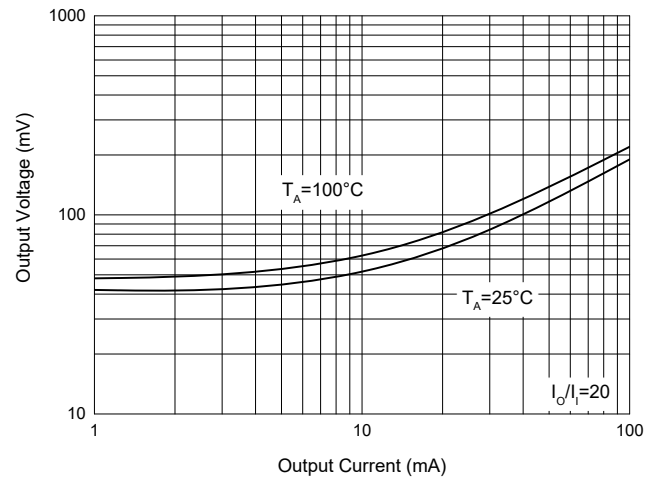


Fig. 5 - DTR2 DC Current Gain Characteristics

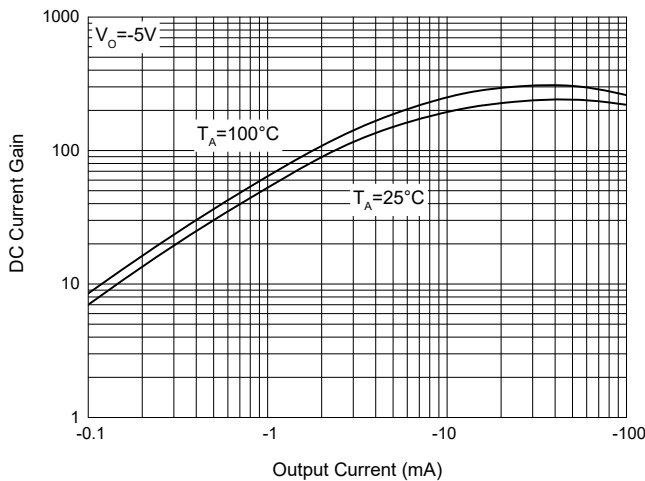
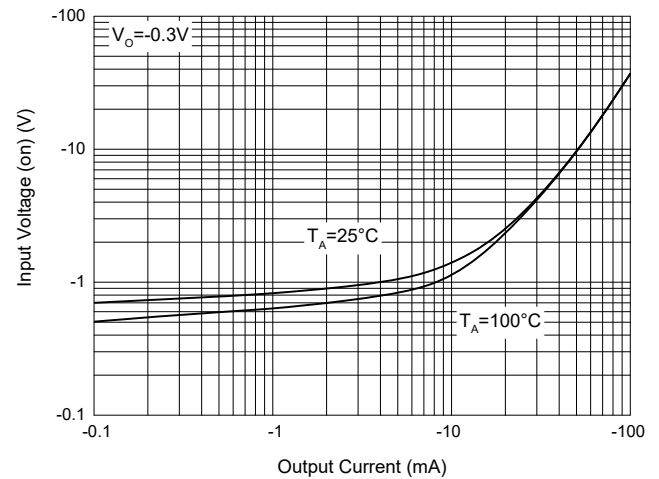


Fig. 6 - DTR2 Input Voltage (on) Characteristics



Curve Characteristics

Fig. 7 - DTR2 Input Voltage (off) Characteristics

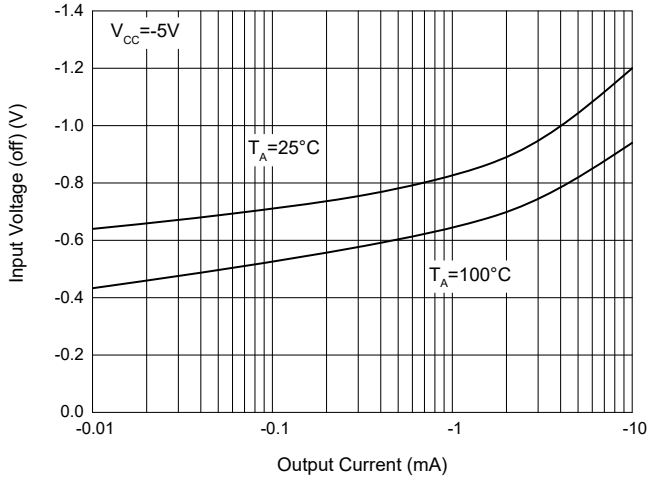


Fig. 8 - DTR2 Output Voltage Characteristics

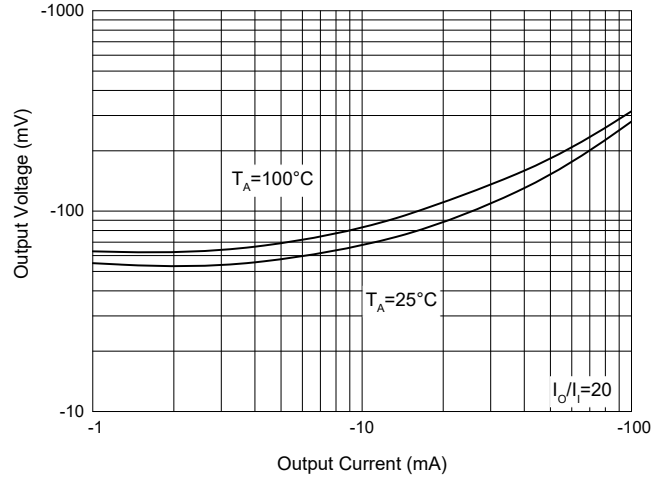
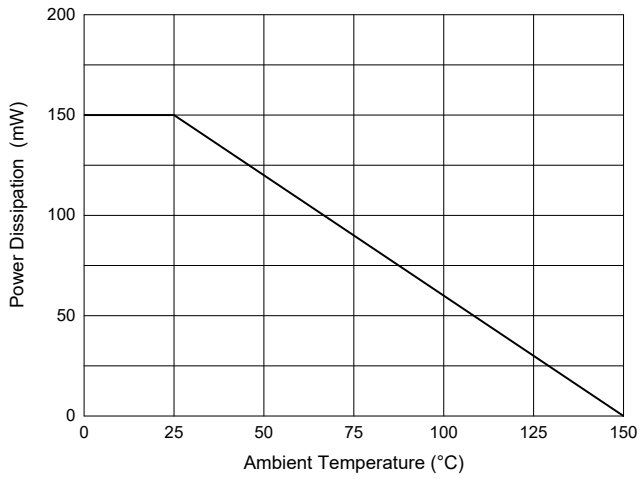


Fig. 9 - Power Derating Curve



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel
Part Number-TPQ2	Tape&Reel:3Kpcs/Reel

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

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