



DTNP143X

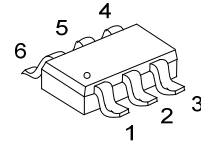
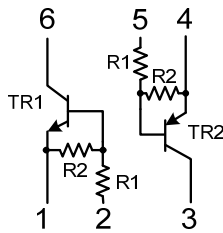
DUAL TRANSISTOR

GENERAL PURPOSE (DUAL DIGITAL TRANSISTOR)

FEATURES

- * Both the DTA143X chip and DTC143X chip in a SOT-363 package.
- * NPN/PNP silicon transistor(Built-in resistor type)

EQUIVALENT CIRCUIT



SOT-363

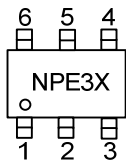
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
DTNP143XL-AL6-R	DTNP143XG-AL6-R	SOT-363	G1	I1	O2	G2	I2	O1	Tape Reel

Note: Pin Assignment: G: GND I: Input O: Output

DTNP143XG-AL6-R	(1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) AL6: SOT-363 (3) G: Halogen Free and Lead Free, L: Lead Free
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MARKING



■ **ABSOLUTE MAXIMUM RATINGS** ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS		UNIT
		TR1 (NPN)	TR2 (PNP)	
Supply Voltage	V_{CC}	50	-50	V
Input Voltage	V_{IN}	-3 ~ +20	-20 ~ +7	V
Output Current	I_{OUT}	100	-100	mA
	$I_{C(MAX)}$	100	-100	mA
Total Power Dissipation (120mW per element must not be exceeded)	P_D	150		mW
Junction Temperature	T_J	+150		$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150		$^{\circ}\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ **ELECTRICAL CHARACTERISTICS** ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

TR1 (NPN)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I(OFF)}$	$V_{CC}=5\text{V}$, $I_O=100\mu\text{A}$			0.3	V
	$V_{I(ON)}$	$V_O=0.3\text{V}$, $I_O=20\text{mA}$	2.5			V
Output Voltage	$V_{O(ON)}$	$I_O/I_I=10\text{mA}/0.5\text{mA}$		0.1	0.3	V
Input Current	I_I	$V_I=5\text{V}$			1.8	mA
Output Current	$I_{O(OFF)}$	$V_{CC}=50\text{V}$, $V_I=0\text{V}$			0.5	μA
DC Current Gain	h_{FE}	$V_O=5\text{V}$, $I_O=10\text{mA}$	30			
Input Resistance	R_1		3.29	4.7	6.11	K Ω
Resistance Ratio	R_2/R_1		1.7	2.1	2.6	
Transition Frequency	f_T	$V_{CE}=10\text{V}$, $I_E=-5\text{mA}$, $f=100\text{MHz}$ (Note)		250		MHz

Note: Transition Frequency of the Device.

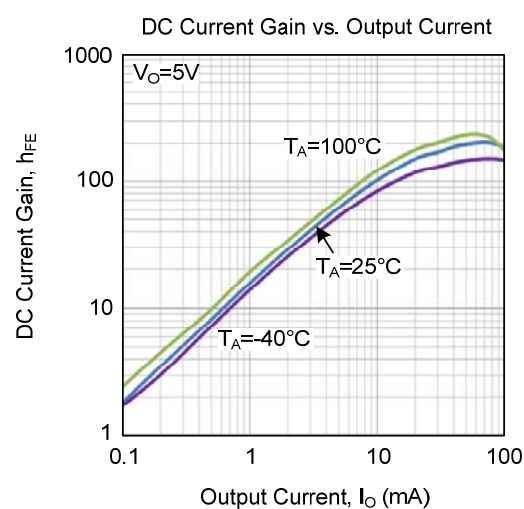
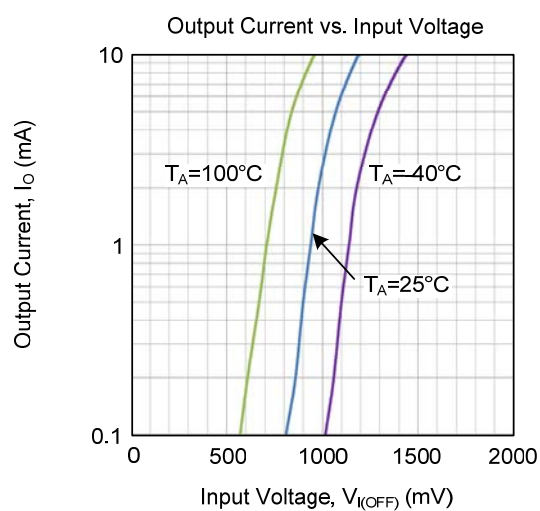
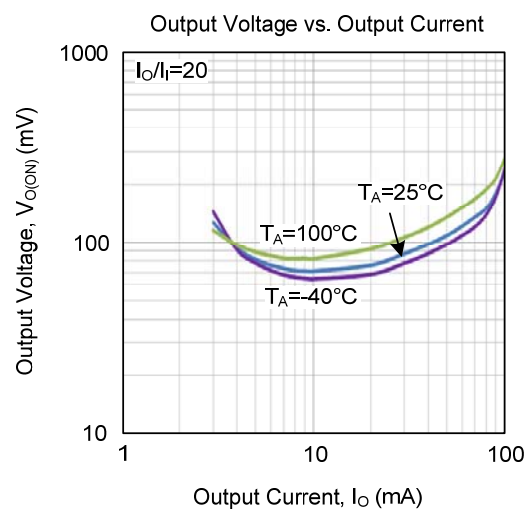
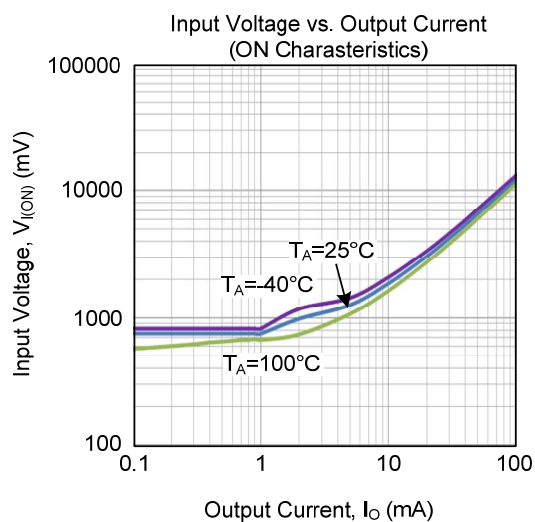
TR2 (PNP)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I(OFF)}$	$V_{CC}=-5\text{V}$, $I_O=-100\mu\text{A}$			-0.3	V
	$V_{I(ON)}$	$V_O=-0.3\text{V}$, $I_O=-20\text{mA}$	-2.5			V
Output Voltage	$V_{O(ON)}$	$I_O/I_I=-10\text{mA}/-0.5\text{mA}$		-0.1	-0.3	V
Input Current	I_I	$V_I=-5\text{V}$			-1.8	mA
Output Current	$I_{O(OFF)}$	$V_{CC}=-50\text{V}$, $V_I=0\text{V}$			-0.5	μA
DC Current Gain	h_{FE}	$V_O=-5\text{V}$, $I_O=-10\text{mA}$	30			
Input Resistance	R_1		3.29	4.7	6.11	K Ω
Resistance Ratio	R_2/R_1		1.7	2.1	2.6	
Transition Frequency	f_T	$V_{CE}=-10\text{V}$, $I_E=5\text{mA}$, $f=100\text{MHz}$ (Note)		250		MHz

Note: Transition Frequency of the Device.

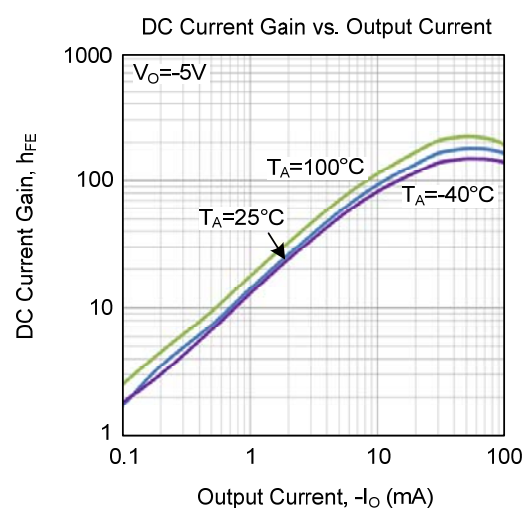
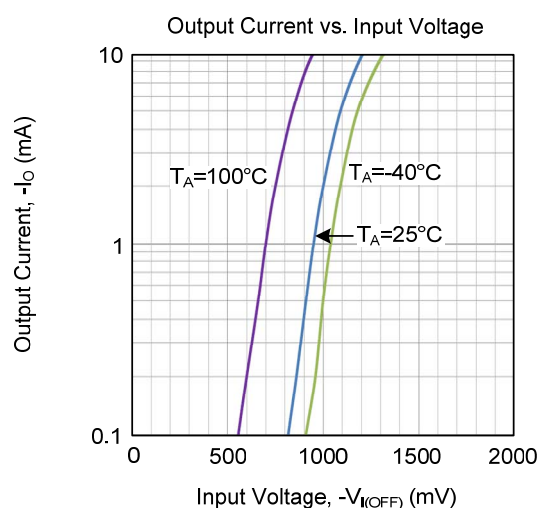
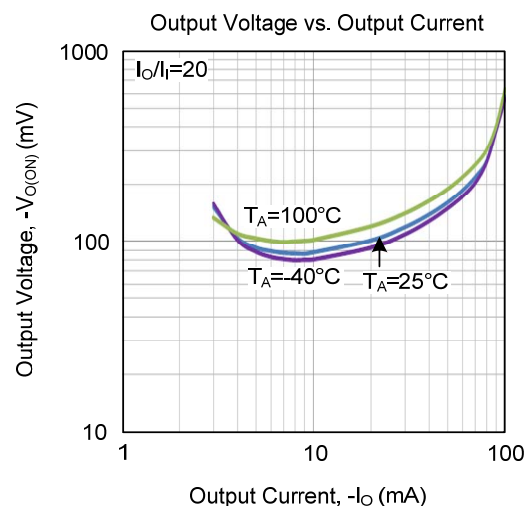
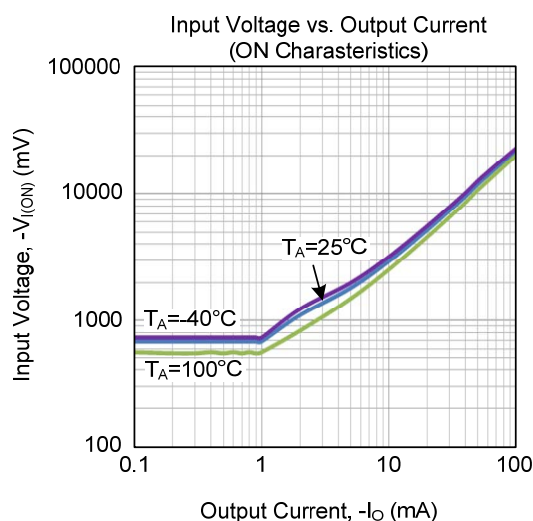
■ TYPICAL CHARACTERISTICS

NPN



■ TYPICAL CHARACTERISTICS

PNP



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