



DTNP114E

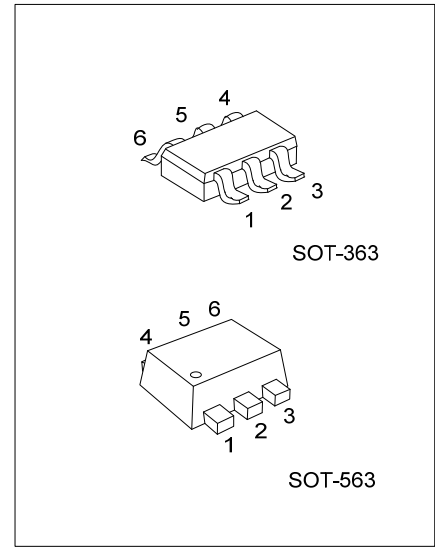
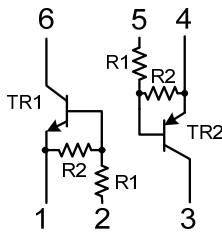
DUAL TRANSISTOR

GENERAL PURPOSE (DUAL DIGITAL TRANSISTOR)

■ FEATURES

- * Both the DTA114E chip and DTC114E chip in a SOT-363 package.
- * NPN/PNP silicon transistor(Built-in resistor type)

■ EQUIVALENT CIRCUIT



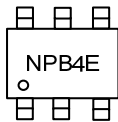
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
DTNP114EL-AL6-R	DTNP114EG-AL6-R	SOT-363	G1	I1	O2	G2	I2	O1	Tape Reel
DTNP114EL-AN6-R	DTNP114EG-AN6-R	SOT-563	G1	I1	O2	G2	I2	O1	Tape Reel

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

DTNP114EG-AL6-R	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) AL6: SOT-363, AN6: SOT-563
	(3)Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

■ 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}	-10 ~ +40	-40 ~ +10	V
Output Current	I_{OUT}	50	-50	mA
	$I_{C(MAX)}$	100	-100	mA
Total Power Dissipation (120mW per element must not be exceeded)	SOT-363	150		mW
	SOT-563	120		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	$V_{I(OFF)}$	$V_{CC}=5V, I_{OUT}=100\mu\text{A}$			0.5	V
	$V_{I(ON)}$	$V_{OUT}=0.3V, I_{OUT}=10\text{mA}$	3			V
Output Voltage	$V_{O(ON)}$	$I_{OUT}=10\text{mA}, I_{IN}=0.5\text{mA}$		0.1	0.3	V
Input Current	I_{IN}	$V_{IN}=5V$			0.88	mA
Output Current	$I_{O(OFF)}$	$V_{CC}=50V, V_{IN}=0V$			0.5	μA
DC Current Gain	h_{FE}	$V_{OUT}=5V, I_{OUT}=5\text{mA}$	30			
Transition Frequency	f_T	$V_{CE}=10V, I_E=-5\text{mA}, f=100\text{MHz}$ (Note)		250		MHz
Input Resistance	R_1		7	10	13	K Ω
Resistance Ratio	R_2/R_1		0.8	1	1.2	

Note: Transition Frequency of the Device

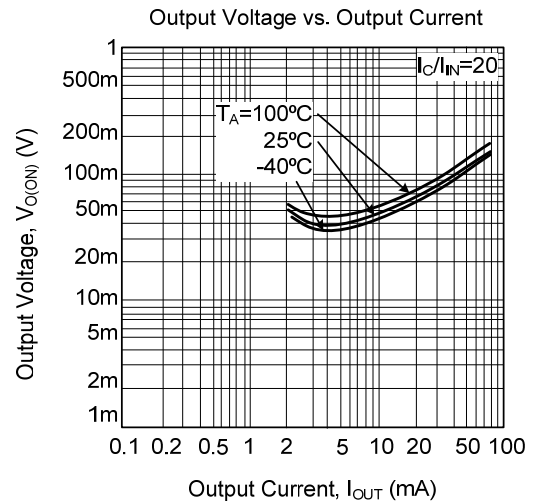
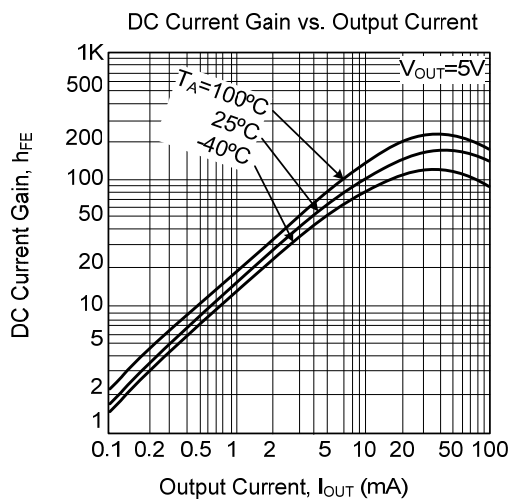
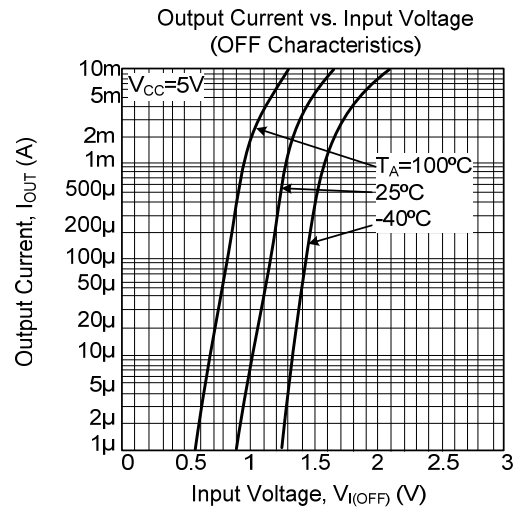
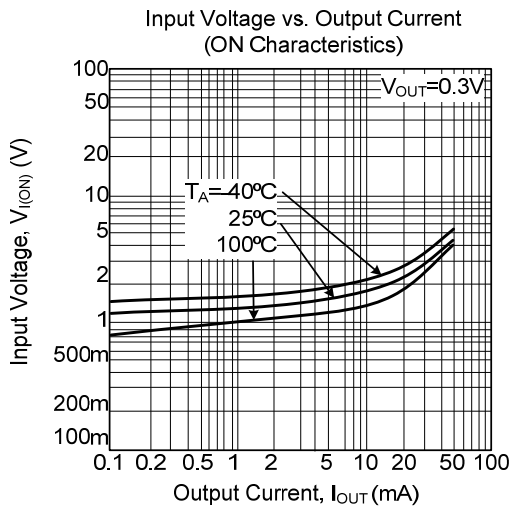
TR2 (PNP)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I(OFF)}$	$V_{CC}=-5V, I_{OUT}=-100\mu\text{A}$			-0.5	V
	$V_{I(ON)}$	$V_{OUT}=-0.3V, I_{OUT}=-10\text{mA}$	-3			V
Output Voltage	$V_{O(ON)}$	$I_{OUT}=-10\text{mA}, I_{IN}=-0.5\text{mA}$		-0.1	-0.3	V
Input Current	I_{IN}	$V_{IN}=-5V$			-0.88	mA
Output Current	$I_{O(OFF)}$	$V_{CC}=-50V, V_{IN}=0V$			-0.5	μA
DC Current Gain	h_{FE}	$V_{OUT}=-5V, I_{OUT}=-5\text{mA}$	30			
Transition Frequency	f_T	$V_{CE}=-10V, I_E=5\text{mA}, f=100\text{MHz}$ (Note)		250		MHz
Input Resistance	R_1		7	10	13	K Ω
Resistance Ratio	R_2/R_1		0.8	1	1.2	

Note: Transition Frequency of the Device.

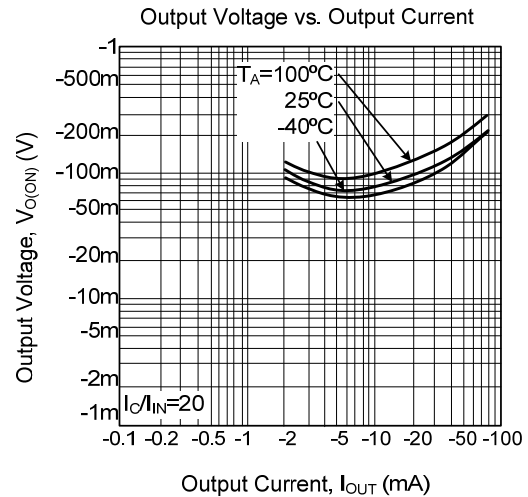
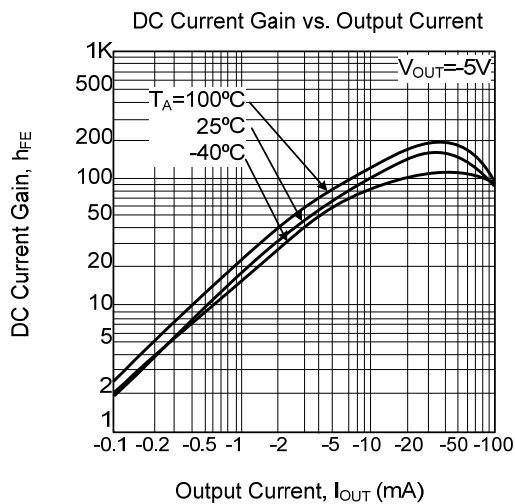
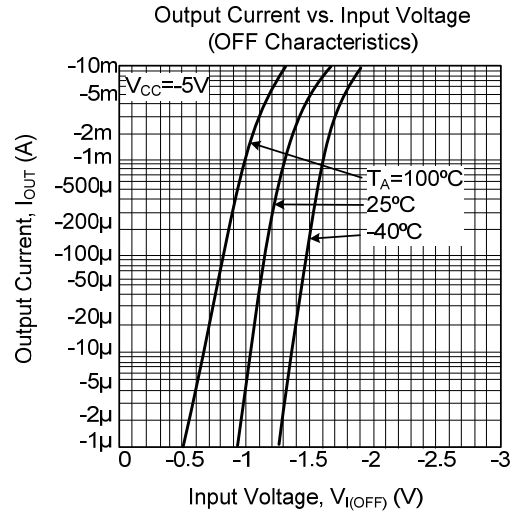
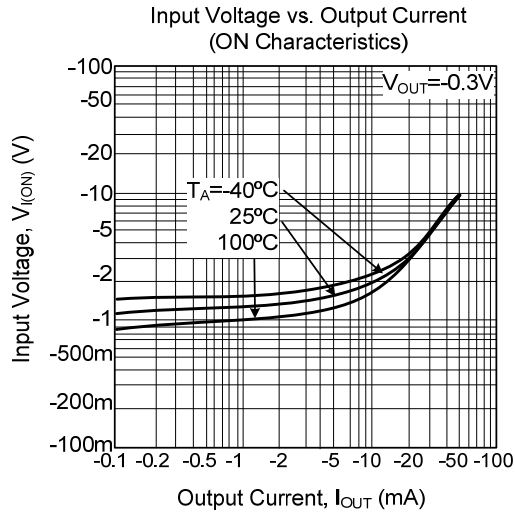
TYPICAL CHARACTERISTICS

TR1 (NPN)



■ TYPICAL CHARACTERISTICS (Cont.)

TR2 (PNP)



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