



UD12K

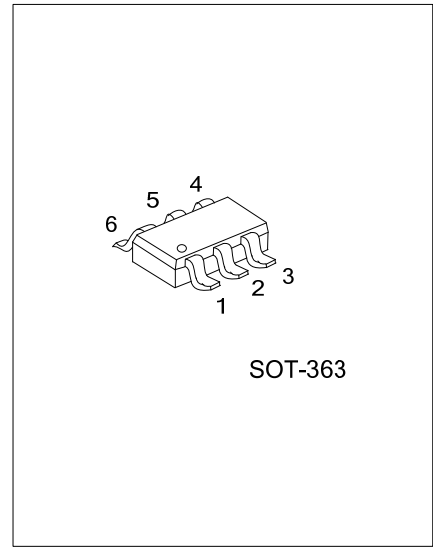
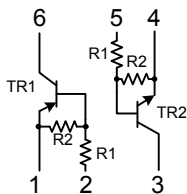
DUAL TRANSISTOR

GENERAL PURPOSE (DUAL DIGITAL TRANSISTOR)

FEATURES

- * Both the DTA144E chip and DTC144E chip in a SOT-363 package.
- * NPN/PNP silicon transistor(Built-in resistor type)

EQUIVALENT CIRCUIT

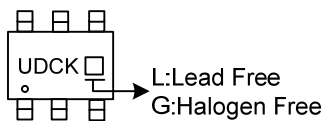


ORDERING INFORMATION

Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen-Free		1	2	3	4	5	6	
UD12KL-AL6-R	UD12KG-AL6-R	SOT-363	E1	B1	C2	E2	B2	C1	Tape Reel

<p>UD12KL-AL6-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Free</p>	<p>(1) R: Tape Reel</p> <p>(2) AL6: SOT-363</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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MARKING



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

TR₁ (PNP)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V _{CC}	-50	V
Input Voltage	V _{IN}	-40~10	V
Output Current	I _C	-100	mA
Total Power Dissipation (120mW per element must not be exceeded)	P _D	150	mW
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-55 ~ +150	°C

TR₂ (NPN)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V _{CC}	50	V
Input Voltage	V _{IN}	-10~40	V
Output Current	I _C	100	mA
Total Power Dissipation (120mW per element must not be exceeded)	P _D	150	mW
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-55 ~ +150	°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 (Ta=25°C)

TR₁ (PNP)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	V _{I(OFF)}	V _{CC} =-5V, I _{OUT} =-100μA			-0.5	V
	V _{I(ON)}	V _{OUT} =-0.3V, I _{OUT} =-2mA	-3			V
Output Voltage	V _{O(ON)}	I _{OUT} =-10mA, I _{IN} =-0.5mA		-0.1	-0.3	V
Input Current	I _{IN}	V _{IN} =-5V			-0.18	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} =-5mA	68			
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C =5mA, I _B =0.25mA		0.1	0.3	V
Transition Frequency	f _T	V _{CE} =-10V, I _E =-5mA, f=100MHz (Note)		250		MHz
Input Resistance	R ₁		32.9	47	61.1	KΩ
Resistance Ratio	R ₂ /R ₁		0.8	1	1.2	

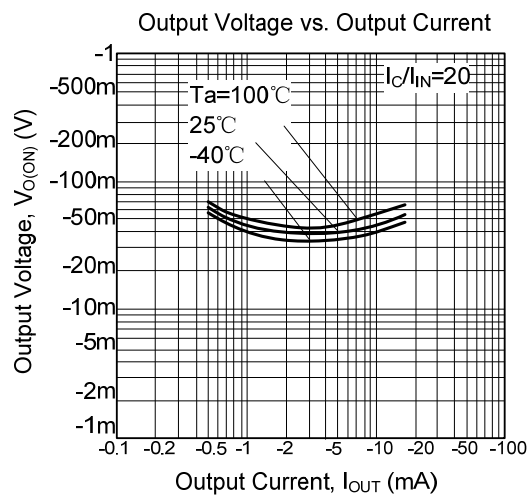
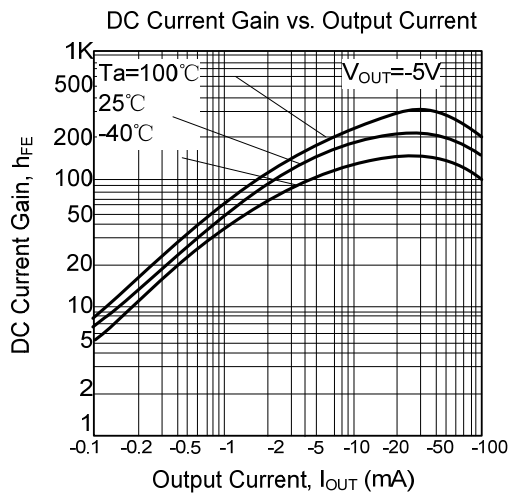
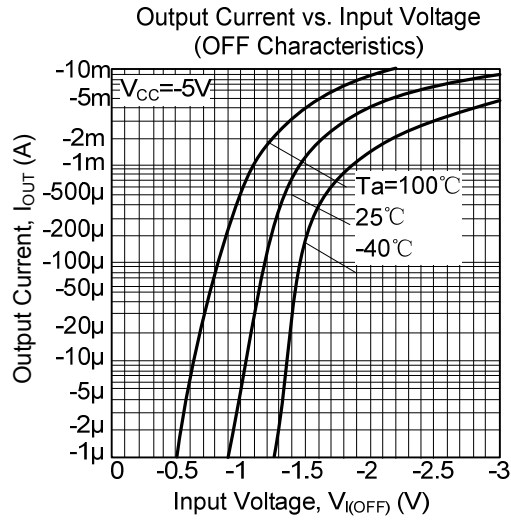
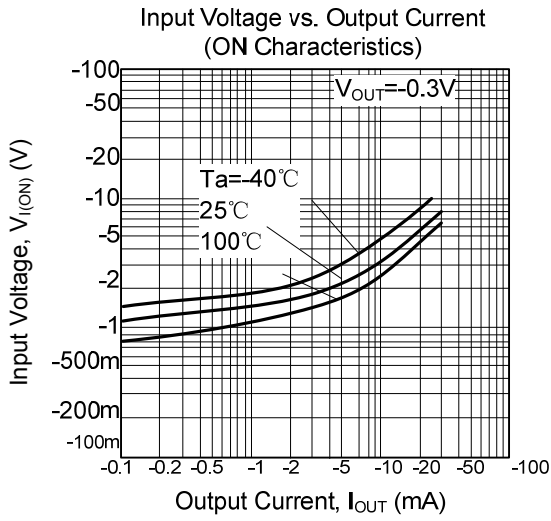
TR₂ (NPN)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage	V _{I(OFF)}	V _{CC} =5V, I _{OUT} =100μA			0.5	V
	V _{I(ON)}	V _{OUT} =0.3V, I _{OUT} =2mA	3			V
Output Voltage	V _{O(ON)}	I _{OUT} =10mA, I _{IN} =0.5mA		0.1	0.3	V
Input Current	I _{IN}	V _{IN} =5V			0.18	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} =5mA	68			
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C =-5mA, I _B =-0.25mA		-0.1	-0.3	V
Transition Frequency	f _T	V _{CE} =10V, I _E =-5mA, f=100MHz (Note)		250		MHz
Input Resistance	R ₁		32.9	47	61.1	KΩ
Resistance Ratio	R ₂ /R ₁		0.8	1	1.2	

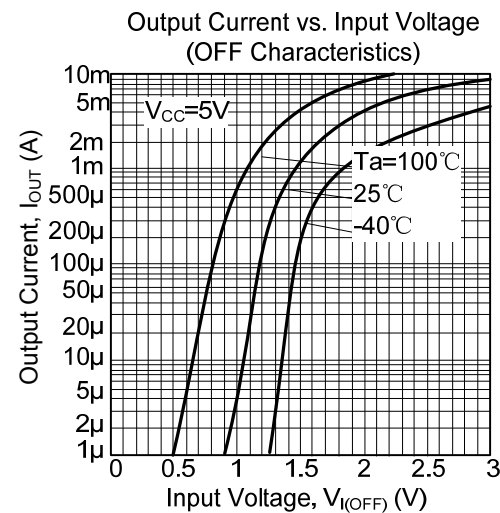
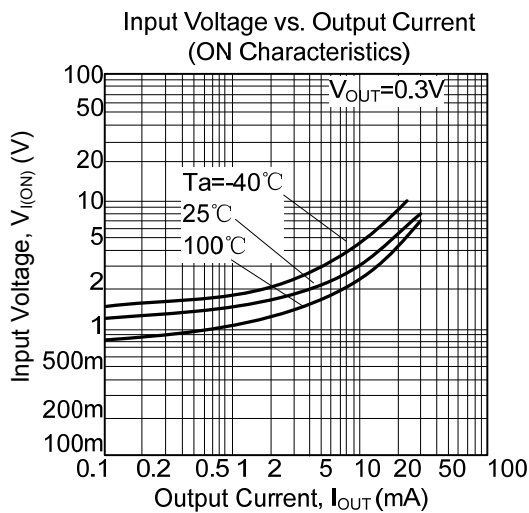
Note: Transition frequency of the device

TYPICAL CHARACTERISTICS

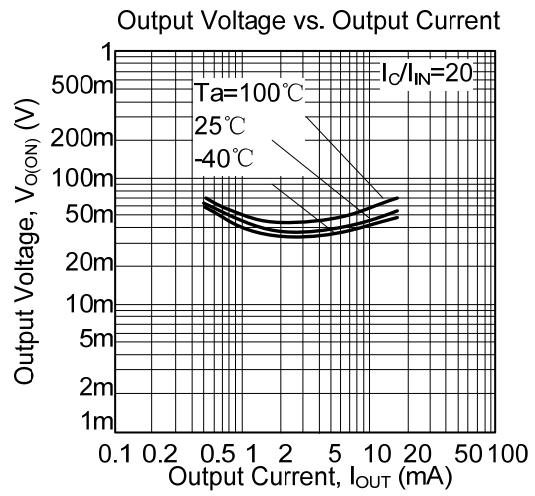
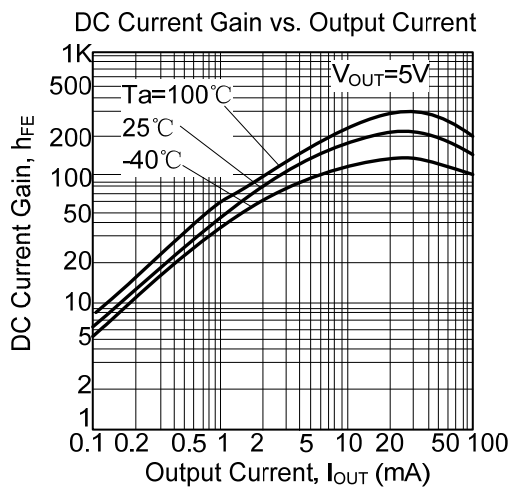
TR₁ (PNP)



TR₂ (NPN)



■ TYPICAL CHARACTERISTICS(Cont.)



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