

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

- DTC144E(NPN) and DTA114Y(PNP) transistors are built-in a package

MARKING

C4

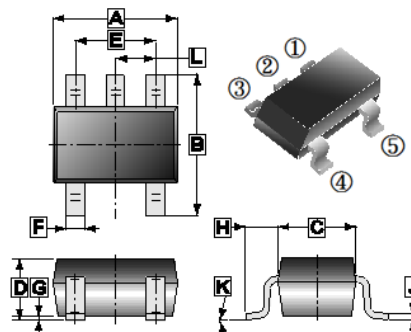
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-353	3K	7 inch

ORDER INFORMATION

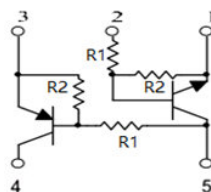
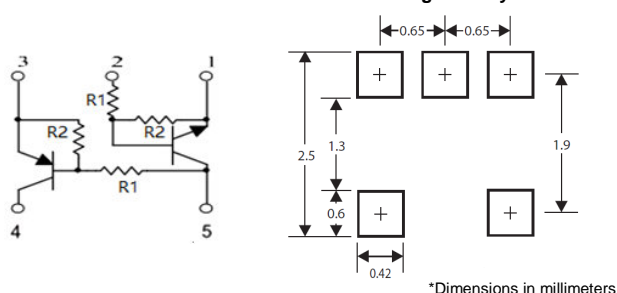
Part Number	Type
UMC4N-C	Lead (Pb)-free and Halogen-free

SOT-353



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.00	2.20	G	0.100 REF.	
B	2.15	2.45	H	0.525 REF.	
C	1.15	1.35	J	0.08	0.15
D	0.90	1.10	K	8°	
E	1.20	1.40	L	0.650 TYP.	
F	0.15	0.35			

Mounting Pad Layout



ABSOLUTE MAXIMUM RATINGS (NPN) (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Supply Voltage	V _{CC}	50	V
Input Voltage	V _{IN}	-10~40	
Output Current	I _O	100	mA
	I _C	100	
Power Dissipation	P _D	150	mW
Junction & Storage Temperature Range	T _J , T _{STG}	-55~150	°C

ELECTRICAL CHARACTERISTICS (NPN) (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Input Voltage	V _{I(off)}	0.5	-	-	V	V _{CC} =5V, I _O =100μA
	V _{I(on)}	-	-	3		V _O =0.3V, I _O =2mA
Output Voltage	V _{O(on)}	-	-	0.3		I _O /I _I =10mA/0.5mA
Input Current	I _I	-	-	0.18	mA	V _I =5V
Output Current	I _{O(off)}	-	-	0.5	μA	V _{CC} =50V, V _I =0
DC Current Gain	G _I	68	-	-	V	V _O =5V, I _O =5mA
Input Resistance	R ₁	32.9	47	61.1	kΩ	
Resistance Ratio	R ₂ /R ₁	0.8	1	1.2		
Transition Frequency	f _T	-	250	-	MHz	V _{CE} =10V, I _E =-5mA, f=100MHz

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

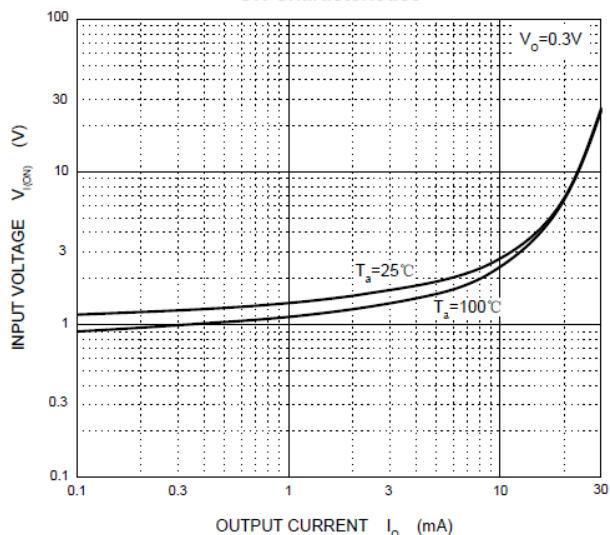
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	-50	V
Input Voltage	V_{IN}	-40~6	
Output Current	I_O	-70	mA
	I_C	-100	
Power Dissipation	P_D	150	mW
Junction & Storage Temperature Range	T_J, T_{STG}	-55~150	$^\circ\text{C}$

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

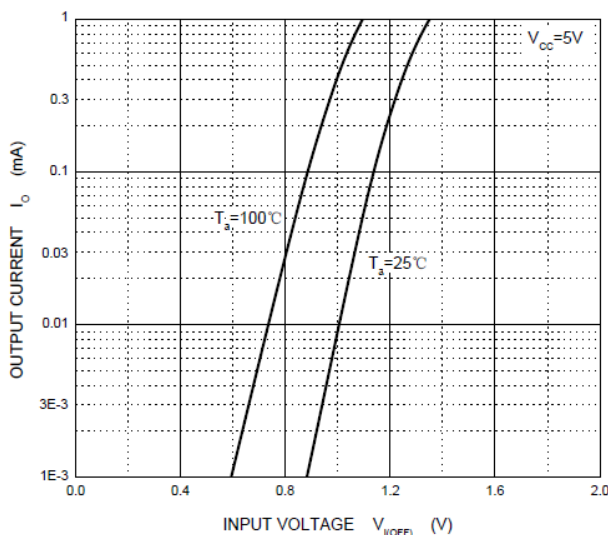
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Input Voltage	$V_{I(off)}$	-0.3	-	-	V	$V_{CC} = -5V, I_O = -100\mu\text{A}$
	$V_{I(on)}$	-	-	-1.4		$V_O = -0.3V, I_O = -1\text{mA}$
Output Voltage	$V_{O(on)}$	-	-	-0.3		$I_O/I_I = -5\text{mA}/-0.25\text{mA}$
Input Current	I_I	-	-	-0.88	mA	$V_I = -5V$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

CHARACTERISTICS CURVE (NPN)

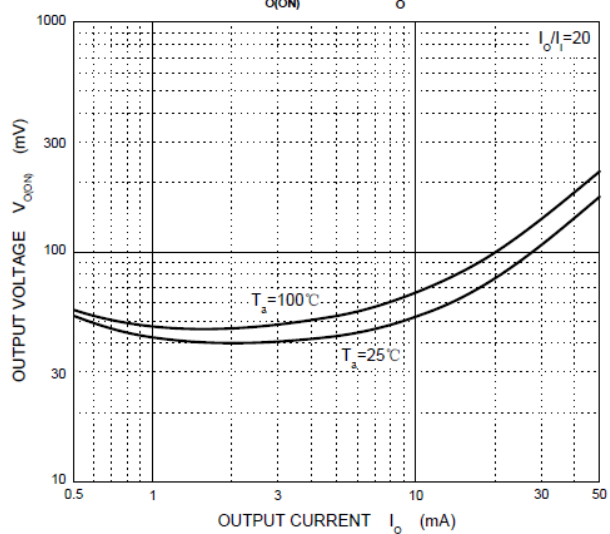
ON Characteristics



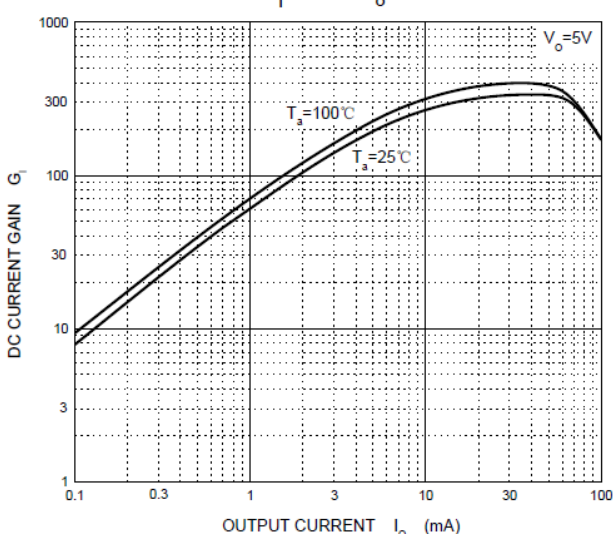
OFF Characteristics



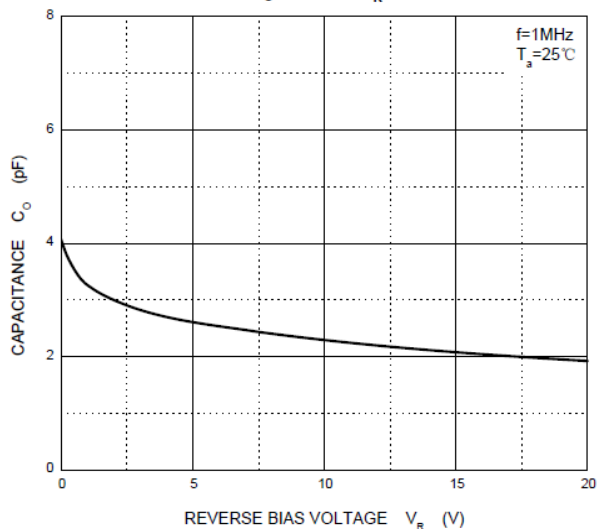
$V_{O(ON)}$ — I_O



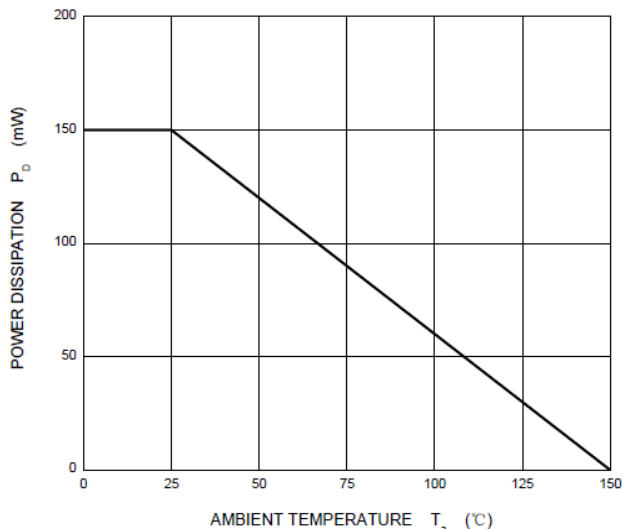
G_I — I_O



C_O — V_R



P_D — T_a



CHARACTERISTICS CURVE (PNP)

