

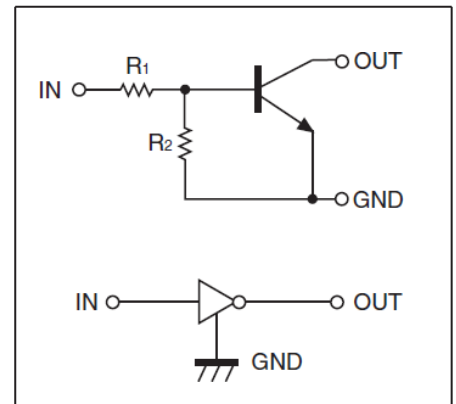
DTC113ZM/DTC113ZE/DTC113ZUA DTC113ZKA/DTC113ZCA/DTC113ZSA

DIGITAL TRANSISTOR (NPN)

FEATURES

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors(see equivalent circuit)
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input.They also have the advantage of almost completely eliminating parasitic effects
- Only the on/off conditions need to be set for operation, making device design easy

• Equivalent Circuit



Part Number	MARKING ⁽¹⁾	Package	Packing Method	Pack Quantity
DTC113ZM	E21	SOT-723	Reel	8000pcs/Reel
DTC113ZE	E21	SOT-523	Reel	3000pcs/Reel
DTC113ZUA	E21	SOT-323	Reel	3000pcs/Reel
DTC113ZKA	E21	SOT-23-3L	Reel	3000pcs/Reel
DTC113ZCA	E21	SOT-23	Reel	3000pcs/Reel
DTC113ZSA	C113 ⁽²⁾ Z•XXX	TO-92S	Bulk	1000pcs/Bag
DTC113ZSA-TA	C113 ⁽²⁾ Z•XXX	TO-92S	Tape	3000pcs/Box

Notes: (1). Solid dot = Green molding compound device, if none, the normal device.

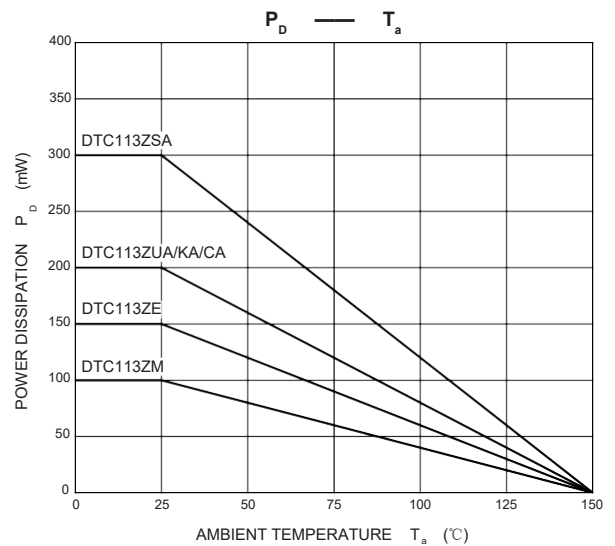
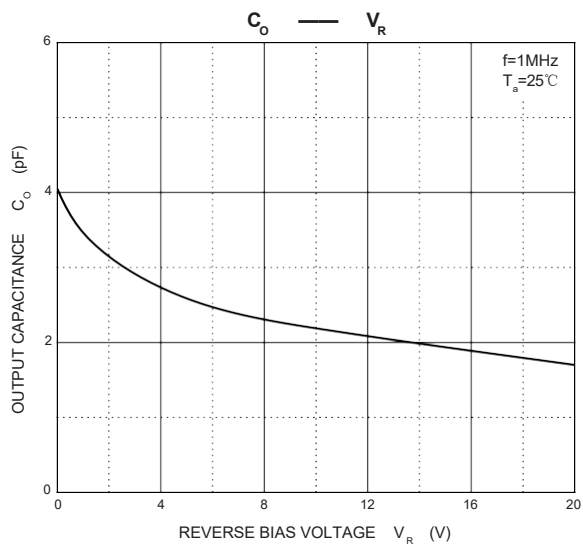
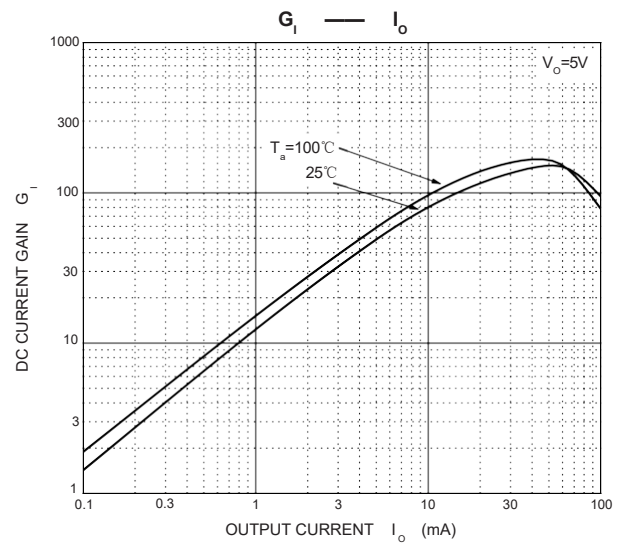
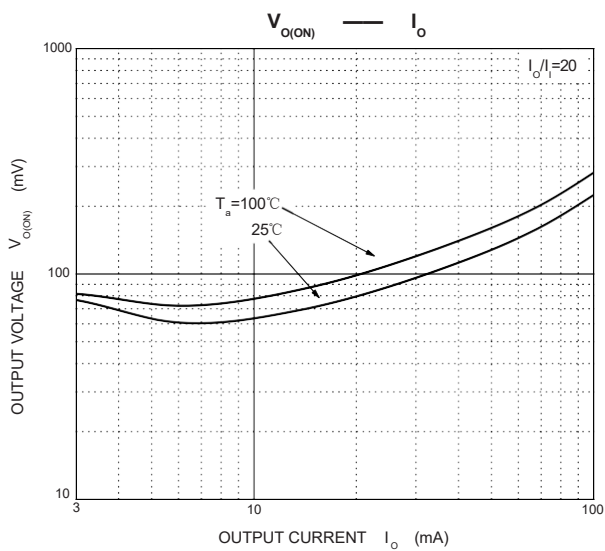
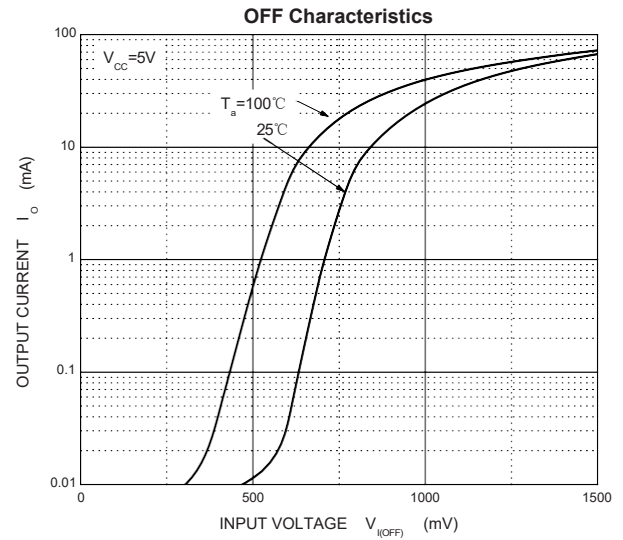
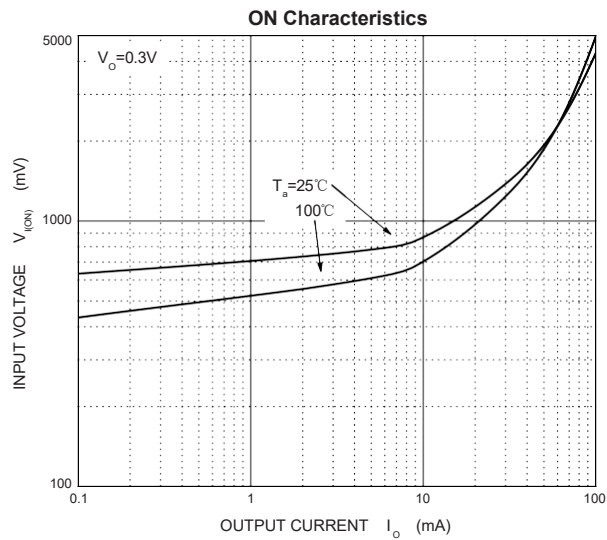
(2). XXX=Code

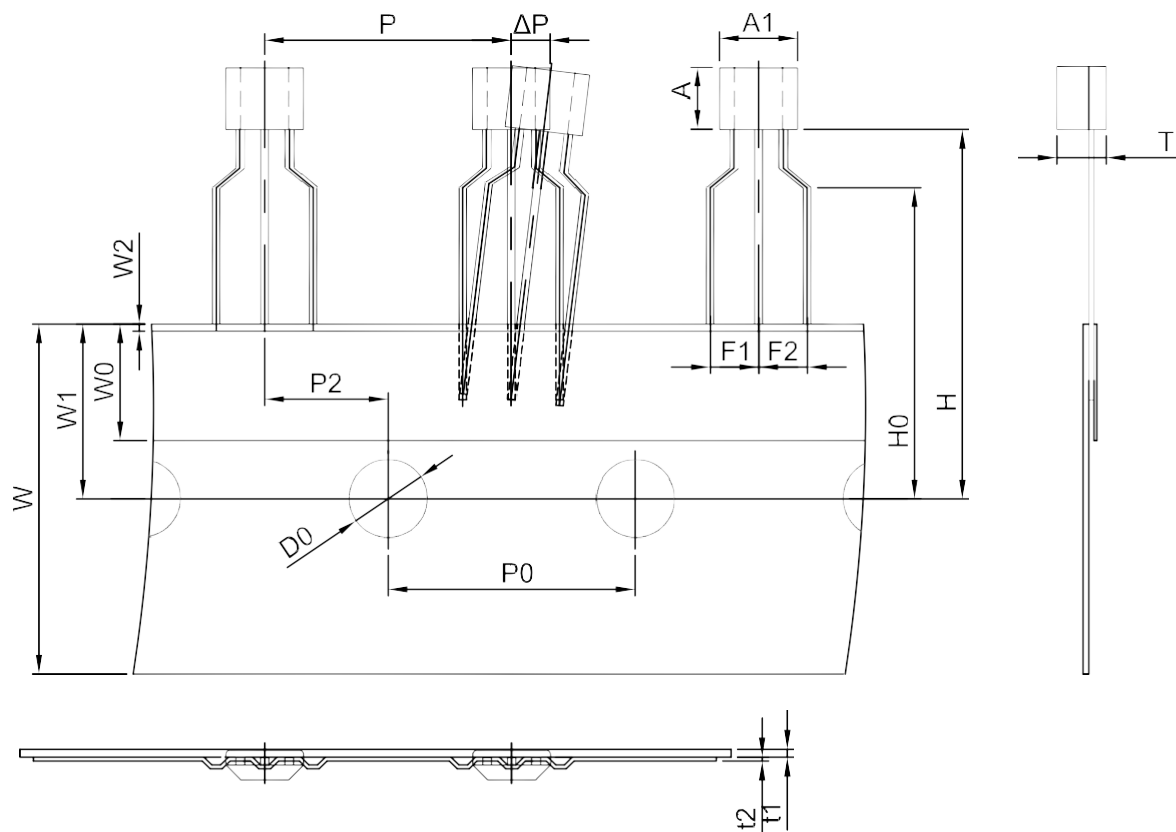
MAXIMUM RATINGS(Ta=25°C unless otherwise noted)

Symbol	Parameter	Limits(DTC113□)						Unit
		M	E	UA	CA	KA	SA	
V_{CC}	Supply Voltage	50						V
V_{IN}	Input Voltage	-5~+10						V
I_O	Output Current	100						mA
P_D	Power Dissipation	100	150	200	200	200	300	mW
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150						°C

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

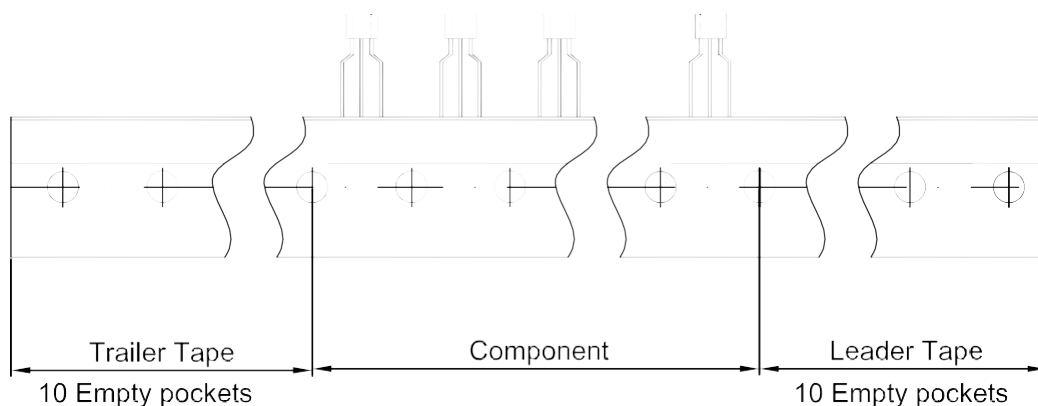
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input voltage	V _{I(off)}	V _{CC} =5V, I _O =100μA	0.3			V
	V _{I(on)}	V _O =0.3V, I _O =20mA			3	V
Output voltage	V _{O(on)}	I _O /I _I =10mA/0.5mA			0.3	V
Input current	I _I	V _I =5V			7.2	mA
Output current	I _{O(off)}	V _{CC} =50V, V _I =0			0.5	μA
DC current gain	G _I	V _O =5V, I _O =5mA	33			
Input resistance	R ₁		0.7	1	1.3	kΩ
Resistance ratio	R ₂ /R ₁		8	10	12	
Transition frequency	f _T	V _O =10V, I _O =5mA, f=100MHz		250		MHz



TO-92S PACKAGE TAPING DIMENSION


Dimiensions are in millimeter

A1	A	T	P	P0	P2	F1	F2	W
4.0	3.15	1.52	12.7	12.7	6.35	2.5	2.5	18.0
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0	9.0	1.0	19.0	16.0	4.0	0.4	0.2	0



Package	Box	Box Size (mm)	Carton	Carton Size (mm)
TO-92S	3,000 pcs	330×184×40	30,000 pcs	505×405×240