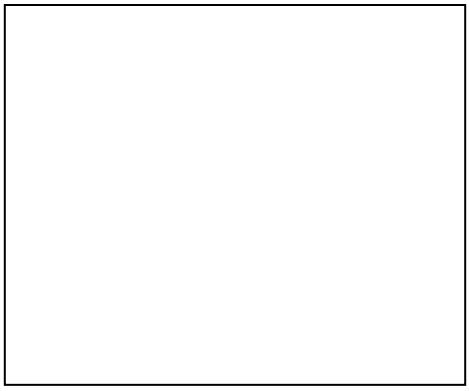
Digital Transistors (Built-in Resistors)

Equivalent Circuit 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

Pin Connenctions And Maaing

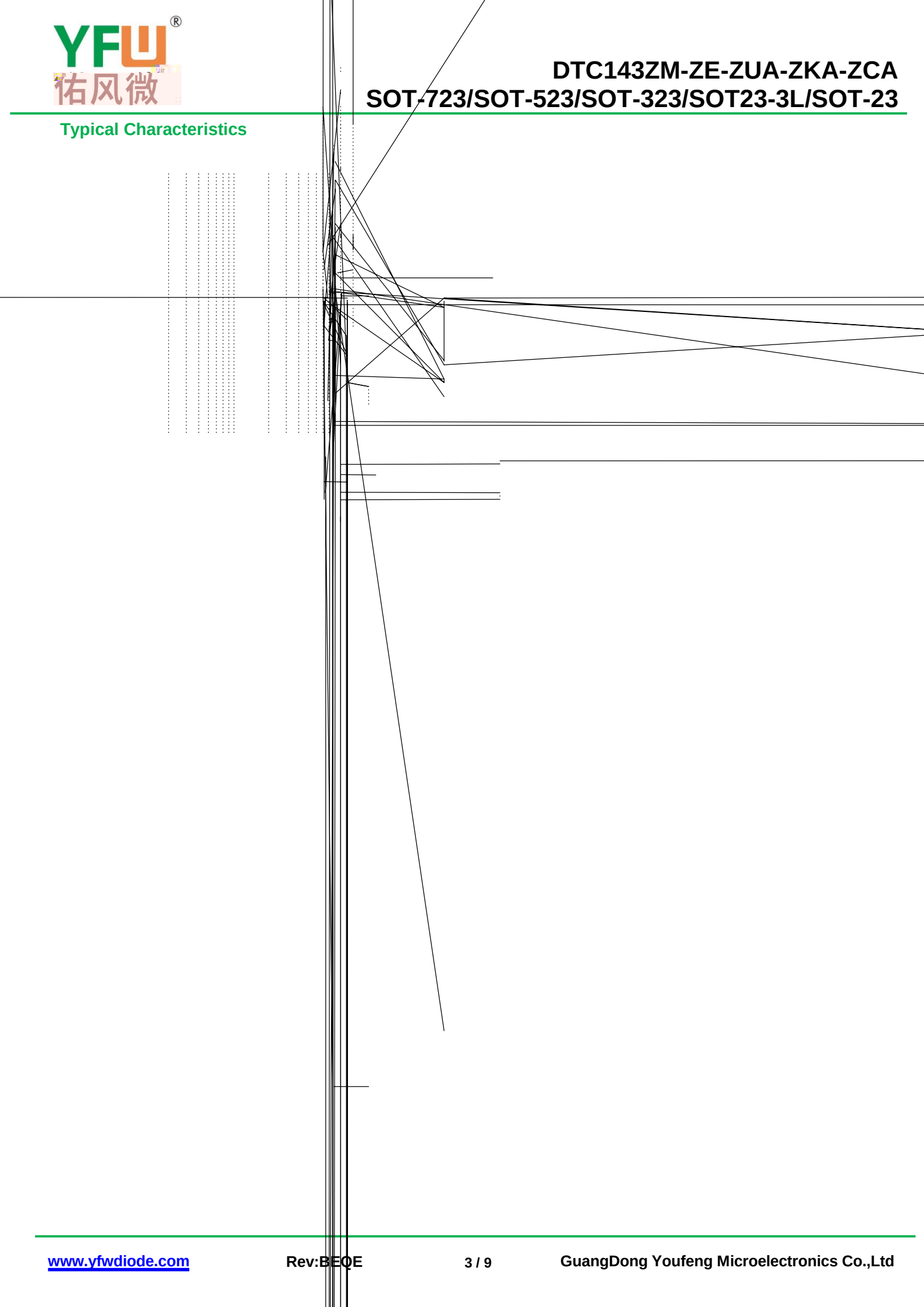
Absolute Maximum Ratings Ta = 25

Symbol	Parameter	Limits(DTC143Z Ǐ)						Unit
		M	E	UA	CA	KA	SA	
V_{CC}	Supply Voltage	50						V
V_{IN}	Input Voltage	-5～+30						V
I_O	Output Current	100						mA
P_D	Power Dissipation	100	150	200	200	200	300	mW
T_{stg}	Operation Junction and Storage Temperature Range	-55～+150						

Electrical Characteristics Ta = 25

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input voltage	$V_{I(off)}$	V_{CC}=5V,I_O=100μA	0.5			V
	$V_{I(on)}$	V_O=0.3V ,I_O=5mA			1.3	V
Output voltage	$V_{O(on)}$	I_O/I_I=5mA/0.25mA		0.1	0.3	V
Input current	I_I	V_I=5V			1.8	mA
Output current	$I_{O(off)}$	V_{CC}=50V,V_I=0			0.5	εA
DC current gain	G_I	V_O=5V,I_O=10mA	80			
Input resistance	R_1		3.29	4.7	6.11	kq
Resistance ratio	R_2/R_1		8	10	12	
Transition frequency	f_T	V_O=10V ,I_O=5mA,f=100MHz		250		MHz

Typical Characteristics



Ordering information

Package	Packing Description	Base Quantity	Packing Quantity
SOT-723	Tape/Reel,7"reel	8000pcs/Reel	64000PCS/Box 320000PCS/Carton

Package Dimensions

SOT-723

	Dim.	Millimeter (mm)		mil	
		Min.	Max.	Min.	Max.

DTC143ZM-ZE-ZUA-ZKA-ZCA
SOT-723/SOT-523/SOT-323/SOT23-3L/SOT-23

Ordering information

Package	Packing Description	Base Quantity	Packing Quantity
SOT-23			

Package Dimensions

SOT-23

	Dim.	Millimeter (mm)		mil	
		Min.	Max.	Min.	Max.

DTC143ZM-ZE-ZUA-ZKA-ZCA

SOT-723/