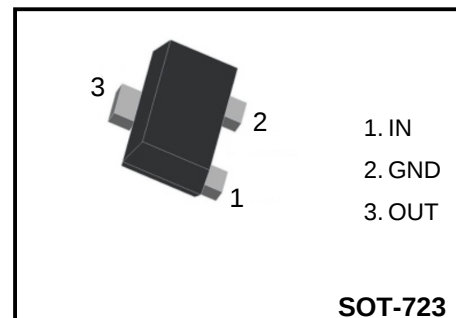


DIGITAL TRANSISTOR (NPN)

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 positive 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

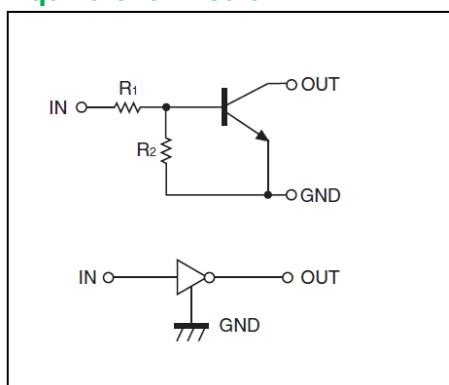


Marking Code

DTC144EM

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Equivalent Circuit



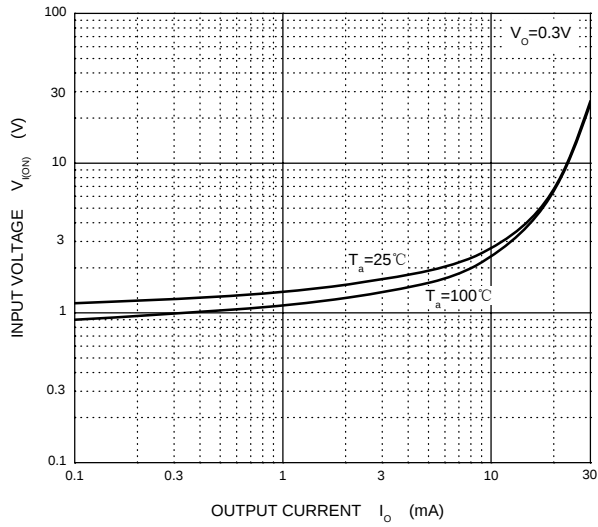
MAXIMUM RATINGS(Ta=25°C unless otherwise noted)

Symbol	Parameter	Limits(DTC144E□)	Unit
		M	
V _{CC}	Supply Voltage	50	V
V _{IN}	Input Voltage	-10~+40	V
I _O	Output Current	30	mA
I _{CM}	Peak Collector Current	100	mA
P _D	Power Dissipation	100	mW
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

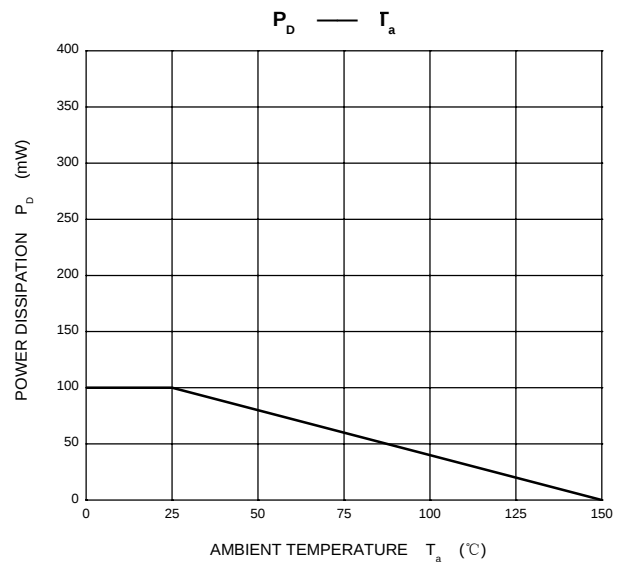
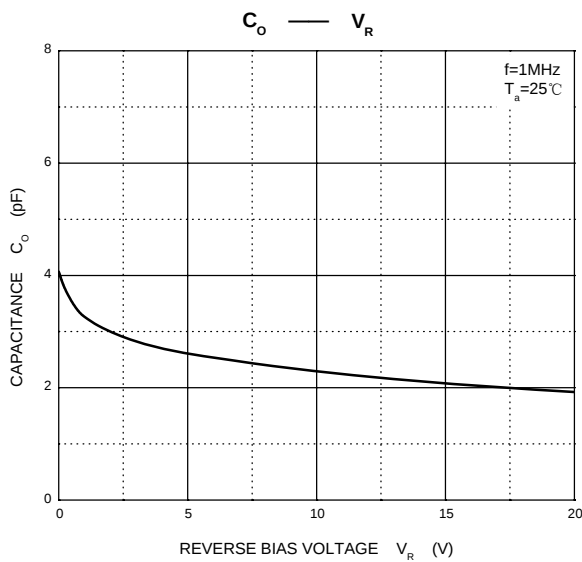
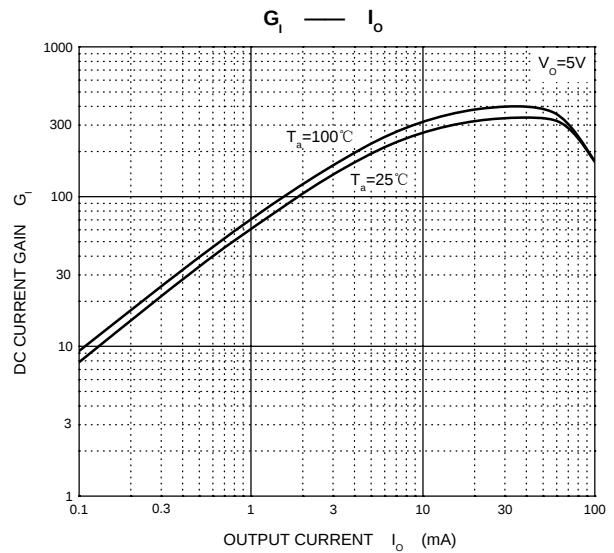
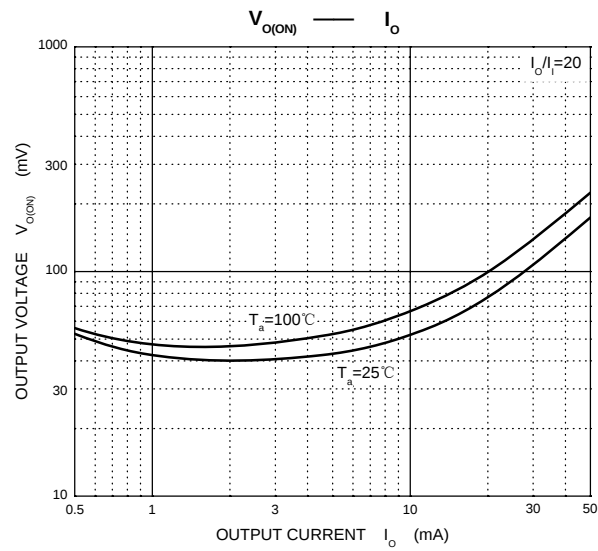
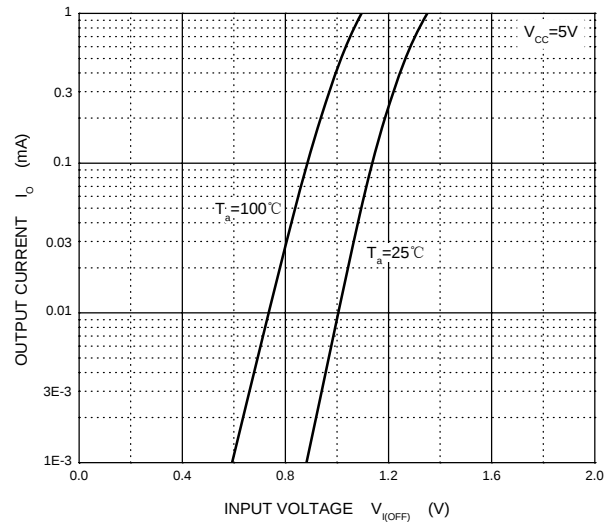
ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input voltage	V _{I(off)}	V _{CC} =5V, I _O =100μA	0.5			V
	V _{I(on)}	V _O =0.3V, I _O =2mA			3	V
Output voltage	V _{O(on)}	I _O /I _I =10mA/0.5mA			0.3	V
Input current	I _I	V _I =5V			0.18	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	68			
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	V _O =10V, I _O =5mA, f=100MHz		250		MHz

ON Characteristics



OFF Characteristics



Ordering information

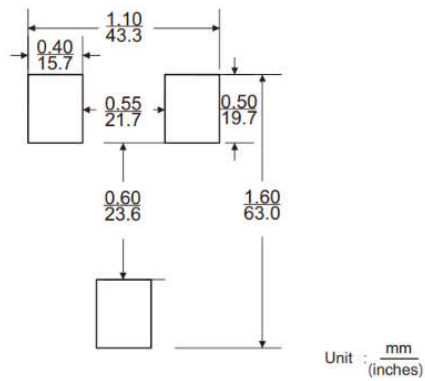
Package	Packing Description	Base Quantity	Packing Quantity
SOT-723	Tape/Reel, 7" reel	8000pcs/Reel	64000PCS/Box 320000PCS/Carton

Package Dimensions

SOT-723

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	1.10	1.30	43.3	51.2
B	-	0.80	-	31.5
C	1.10	1.30	43.3	51.2
D	0.70	0.90	27.6	35.4
E	0.20	0.30	7.9	11.8
F	0.40	0.50	15.7	19.7
G	0.15	0.25	5.9	9.8
H	0.06	0.16	2.4	6.3
L	0.15	0.25	5.9	9.8

The recommended mounting pad size



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