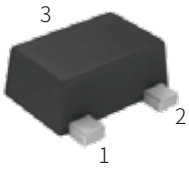
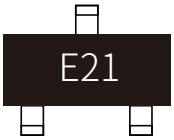
FEATURES

- Built-In Biasing Resistors R_1 = 1kΩ, R_2 = 10kΩ
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see inner circuit)
- Only the on/off conditions need to be set for operation, making the circuit design easy
- Complementary PNP Types: DTA113ZM



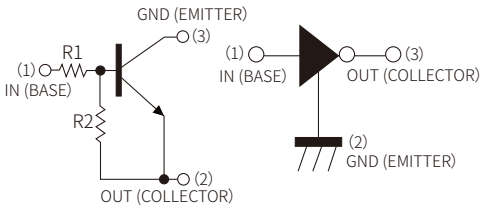
SOT-723



Marking

APPLICATION

- Inverter, Interface, Driver



Schematic Symbol

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS (T_A=25°C)

Parameter	Symbol	Value	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	-5 to 10	
Output current	I_O	100	mA
Collector current	$I_{C(MAX)}$ *1	100	mA
Power Dissipation	P_D *2	150	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~+150	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test 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	3.0			
Output voltage	$V_{O(on)}$	I_O=10mA, I_I=0.5mA		100	300	mV
Input current	I_I	V_I=5V, I_E=0			7.2	mA
Output current	$I_{O(off)}$	V_{CC}=50V, V_I=0V			500	nA
DC current gain	G_I	V_O=5V, I_O=5mA	33			
Input resistance	R_1		0.7	1.0	1.3	kΩ
Resistance ratio	R_1/R_2		8	10	12	
Transition frequency	f_T*1	V_{CE}=10V, I_E=-5mA,f = 100MHz		250		MHz

*1 Characteristics of built-in transistor
*2 Each terminal mounted on a reference land

TYPICAL CHARACTERISTICS

Fig.1-Input Voltage vs. Output Current (ON Characteristics)

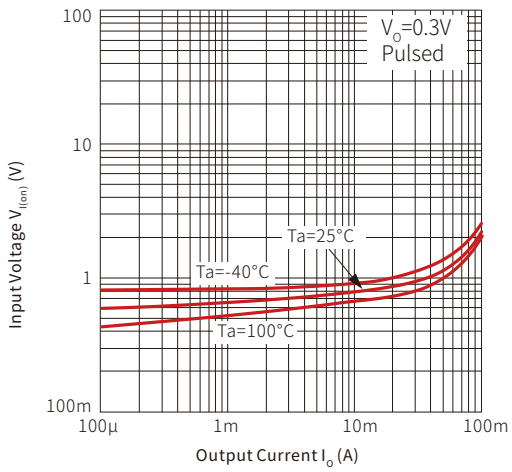


Fig.2-Output Current vs. Input Voltage (Off Characteristics)

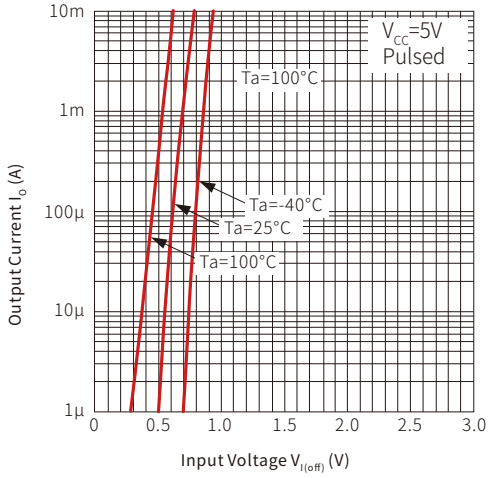


Fig.3 Output Current vs. Output Voltage

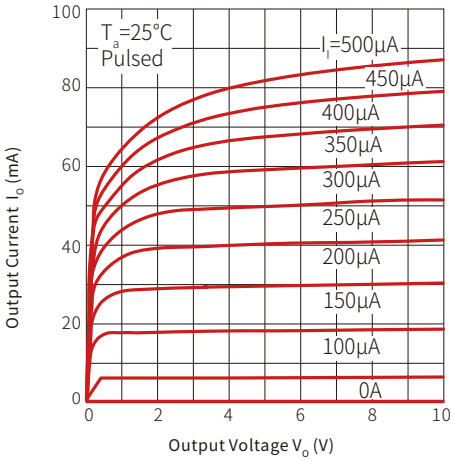


Fig.4 DC Current Gain vs. Collector Current

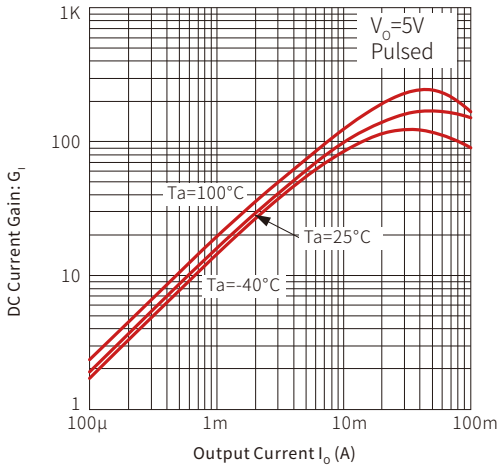
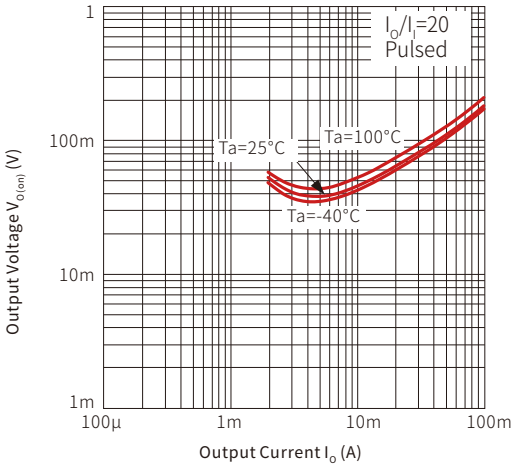
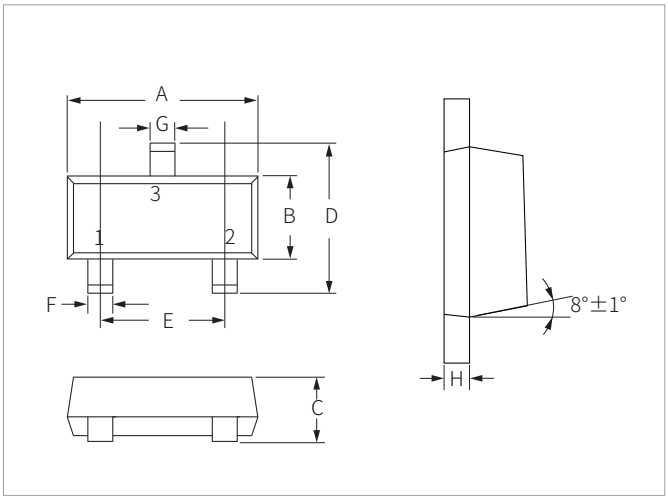


Fig.5 Output Voltage vs. Output Current

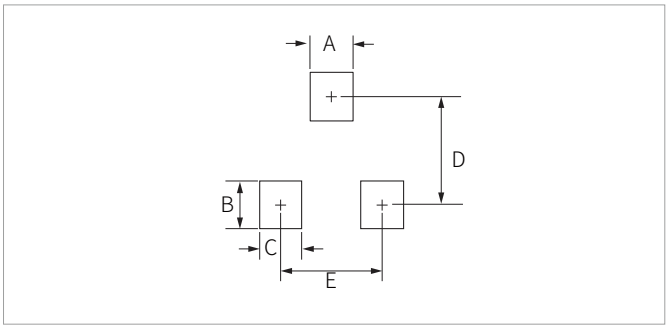


SOT-723 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.15	1.35	0.045	0.053
B	0.75	0.85	0.030	0.033
C	0.35	0.45	0.014	0.018
D	1.15	1.35	0.045	0.053
E	0.80TYP		0.031TYP	
F	0.175	0.25	0.007	0.010
G	0.225	0.30	0.009	0.012
H	0.09	0.13	0.003	0.005

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
	Dimensions	Dimensions
A	0.50	0.020
B	0.45	0.018
C	0.40	0.016
D	1.15	0.045
E	0.80	0.031

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
DTC113ZM	SOT-723	8000PCS	7”

Headquarters
No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline
400-021-5756

Web
Https://www.semiware.com

Sales Center
Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service
Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support
Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions
Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

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