

Description

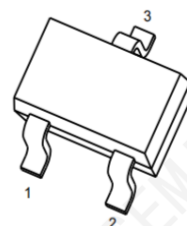
The PDTC114YU,115-JSM is NPN silicon digital transistors with built-in bias resistors. They come in multiple compact surface-mounted packages, enabling simplified inverter circuit design and reliable digital switching for diverse electronic systems.

Features

- ◆ Built-in thin-film bias resistors, no external input resistors required
- ◆ Complete resistor isolation supports input negative biasing, minimal parasitic effects
- ◆ Easy operation with only on/off condition settings
- ◆ High transition frequency (typ. 250MHz) for high-speed switching
- ◆ Wide operating junction temperature range (-55~+150°C)

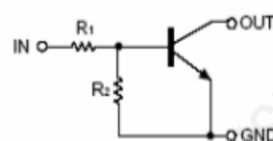
Applications

- ◆ Consumer Electronics
- ◆ Digital Inverter Circuits
- ◆ Portable Devices
- ◆ Low-Power Electronic
- ◆ SystemsSignal Switching Circuits



- 1. IN
- 2. GND
- 3. OUT

SOT-323



Circuit Diagram

Ordering Information

Order number	Package	Operation Temperature Range	MSL Grade	Ship, Quantity	Green
PDTC114YU,115-JSM	SOT-323	-55~+150	3	T&R,3000	RoHS

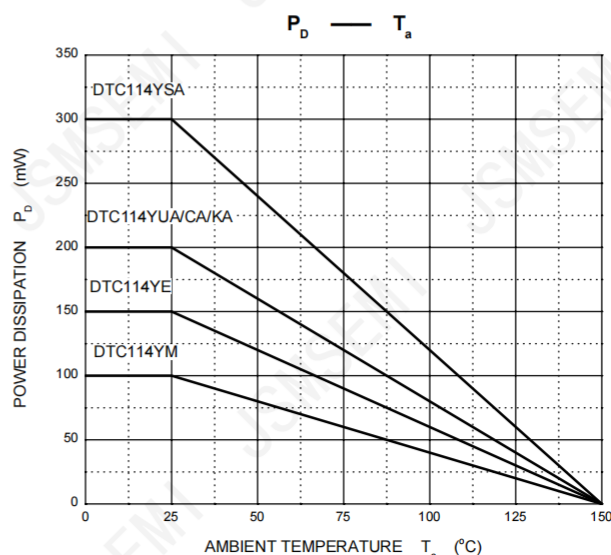
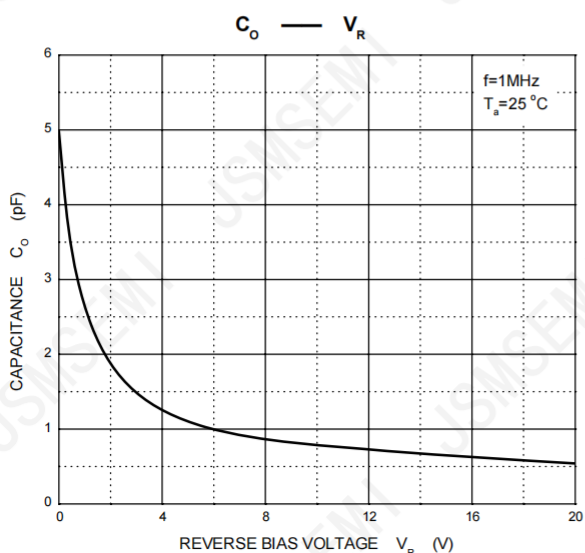
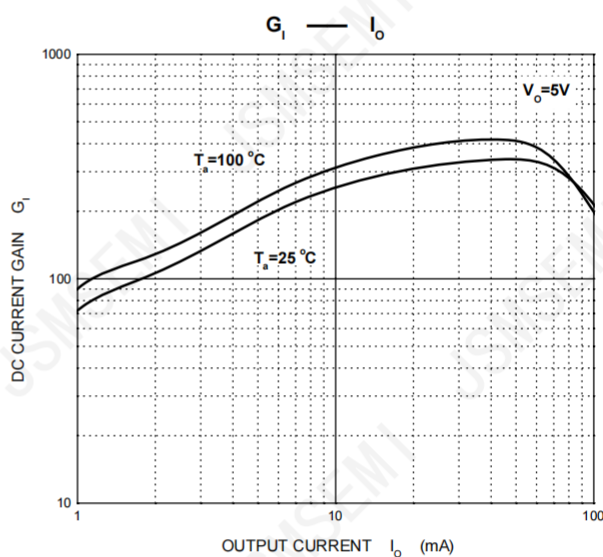
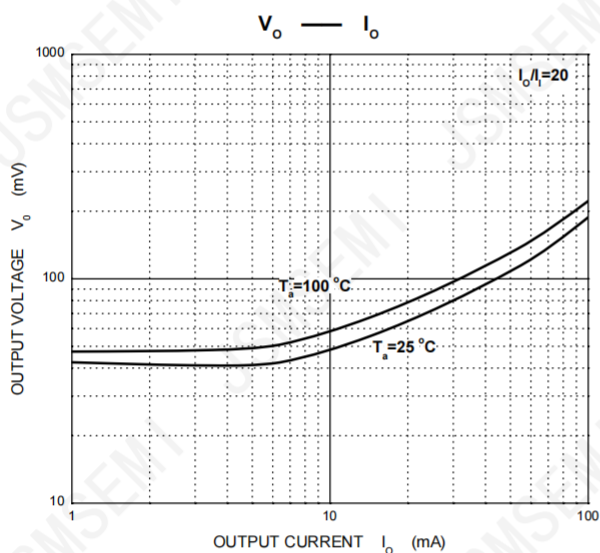
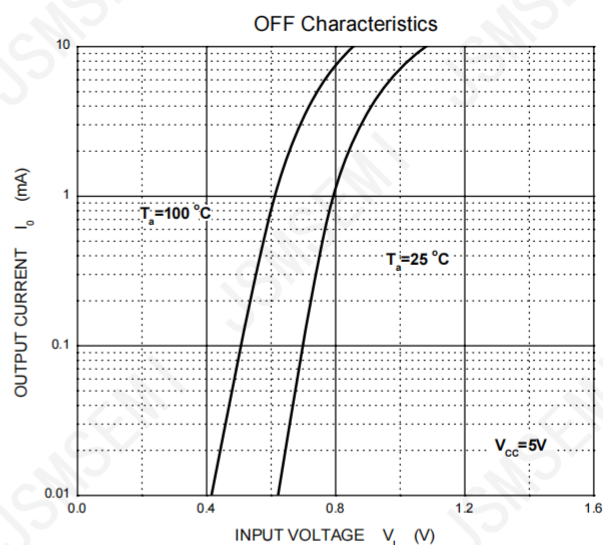
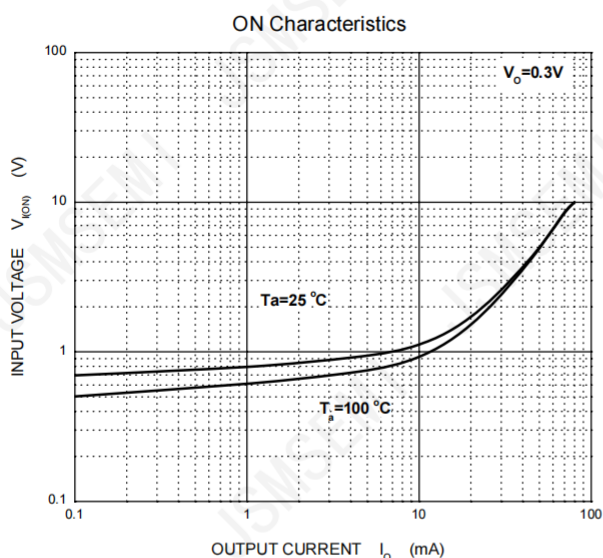
Absolute Maximum Ratings(TA=25°C unless otherwise specified)

Symbol	Parameter	Limits	Unit
V _{CC}	Supply Voltage	50	V
V _{IN}	Input Voltage	-6~+40	V
I _O	Output Current	70	mA
I _{CM}	Peak Collector Current	100	mA
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

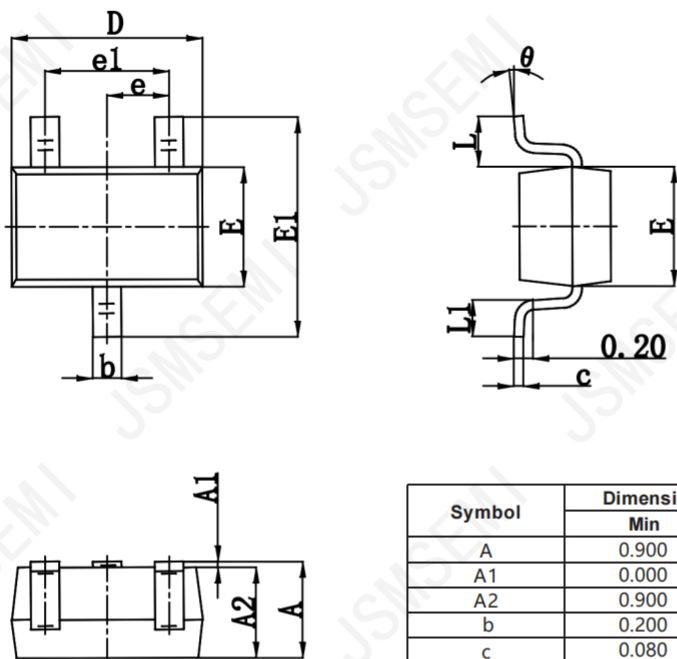
Electrical Characteristics(TA=25°C unless otherwise specified)

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 =1mA			1.4	V
Output voltage	V _{O(on)}	I _O /I _I =5mA/0.25mA			0.3	V
Input current	I _I	V _I =5V			0.88	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 _I		7	10	13	kΩ
Resistance ratio	R ₂ /R ₁		3.7	4.7	5.7	
Transition frequency	f _T	V _O =10V, I _O =5mA, f=100MHz		250		MHz

Typical Performance Curves

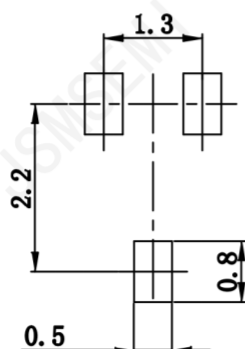


SOT-323 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-323 Suggested Pad Layout



Note:
1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.

Revision History

Rev.	Change	Date
V1.0	Initial version	2/23/2024

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