

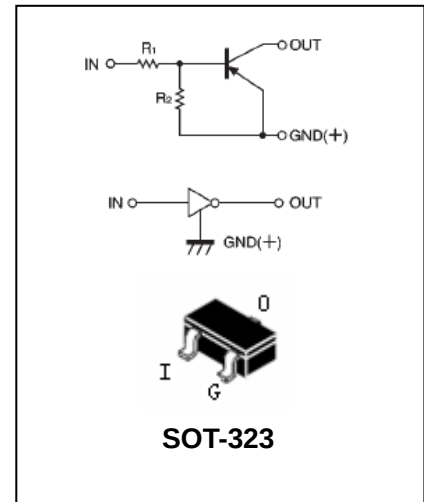
Digital Transistor

TDTA(R₁≠R₂ SERIES)UA

FEATURES

- Epitaxial planar die construction
- Complementary NPN types available(DTC)
- Built-in biasing resistors, $R_1 \neq R_2$
- Also available in lead free version
- Halogen free
- Qualified to AEC-Q101 standards for high reliability

HF



APPLICATIONS

- The PNP style digital transistor

ORDERING INFORMATION

Type No.	Marking	Package Code
TDTA113ZUA	111	SOT-323
TDTA114YUA	54	SOT-323
TDTA123JUA	132	SOT-323
TDTA123YUA	52	SOT-323
TDTA143XUA	33	SOT-323
TDTA143ZUA	113	SOT-323

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V _{CC}	Supply Voltage	-50	V
V _{IN}	Input Voltage	TDTA113ZUA +5 to -10 TDTA114YUA +6 to -40 TDTA123JUA +5 to -12 TDTA123YUA +5 to -12 TDTA143XUA +7 to -20 TDTA143ZUA +5 to -30	V
I _O	Output Current	TDTA113ZUA -100 TDTA114YUA -70 TDTA123JUA -100 TDTA123YUA -100 TDTA143XUA -100 TDTA143ZUA -100	mA
I _C (Max.)	Output current	ALL -100	mA
P _D	Power Dissipation	200	mW
T _j , T _{stg}	Operating and Storage and Temperature Range	-55 to +150	°C

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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Input Voltage TDTA113ZUA TDTA114YUA TDTA123JUA TDTA123YUA TDTA143XUA TDTA143ZUA	V _{I(off)}	V _{CC} =-5V, I _O =-100μA	-	-	-0.3 -0.3 -0.5 -0.3 -0.3 -0.5	V
Input Voltage TDTA113ZUA TDTA114YUA TDTA123JUA TDTA123YUA TDTA143XUA TDTA143ZUA	V _{I(on)}	V _O =-0.3V, I _O =-20mA V _O =-0.3V, I _O =-1mA V _O =-0.3V, I _O =-5mA V _O =-0.3V, I _O =-20mA V _O =-0.3V, I _O =-20mA V _O =-0.3V, I _O =-5mA	-3 -1.4 -1.1 -3.0 -2.5 -1.3	-	-	
Output Voltage TDTA114YUA TDTA123JUA TDTA143ZUA ALL Others	V _{O(on)}	I _O /I _I =-5mA/-0.25mA I _O /I _I =-10mA/-0.5mA	-	-0.1	-0.3	V
Input Current TDTA113ZUA TDTA114YUA TDTA123JUA TDTA123YUA TDTA143XUA TDTA143ZUA	I _I	V _I =-5V	-	-	-7.2 -0.88 -3.6 -3.8 -1.8 -1.8	mA
Output Current	I _{O(off)}	V _{CC} =-50V, V _I =0V	-	-	-0.5	μA
DC Current Gain TDTA113ZUA	G _I	V _O =-5V, I _O =-5mA	33	-	-	-
DC Current Gain TDTA114YUA TDTA123JUA TDTA123YUA TDTA143XUA TDTA143ZUA	G _I	V _O =-5V, I _O =-10mA	68 80 33 30 80	-	-	-
Input Resistance TDTA113ZUA TDTA114YUA TDTA123JUA TDTA123YUA TDTA143XUA TDTA143ZUA	R ₁		0.7 7 1.54 1.54 3.29 3.29	1 10 2.2 2.2 4.7 4.7	1.3 13 2.86 2.86 6.11 6.11	kΩ
Resistance Ratio TDTA113ZUA TDTA114YUA TDTA123JUA	R ₂ /R ₁	-	8 3.7 17	10 4.7 21	12 5.7 26	-

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TDTA123YUA TDTA143XUA TDTA143ZUA			3.6 1.7 8	4.5 2.1 10	5.5 2.6 12	
Gain-Bandwidth Product	f_T	$V_{CE}=-10V, I_E=5mA,$ $f=100MHz$	-	250	-	MHz

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

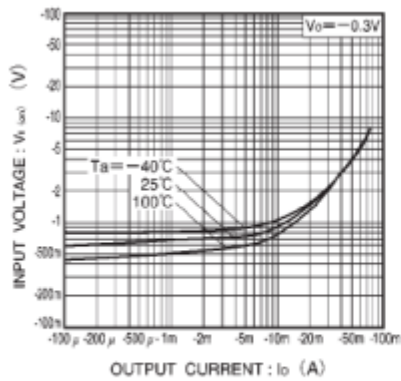


Fig.1 Input voltage vs. output current (ON characteristics)

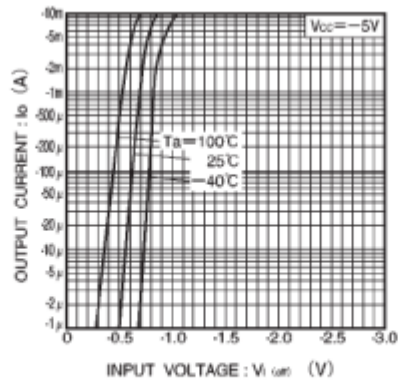


Fig.2 Output current vs. input voltage (OFF characteristics)

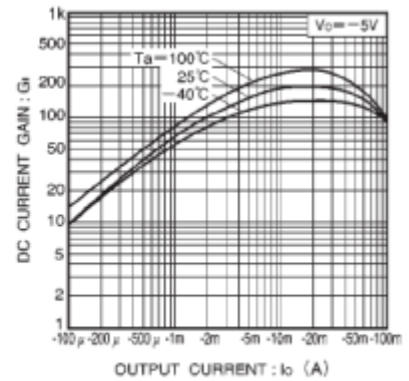


Fig.3 DC current gain vs. output current

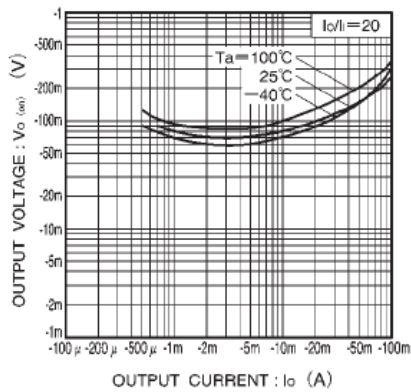


Fig.4 Output voltage vs. output current

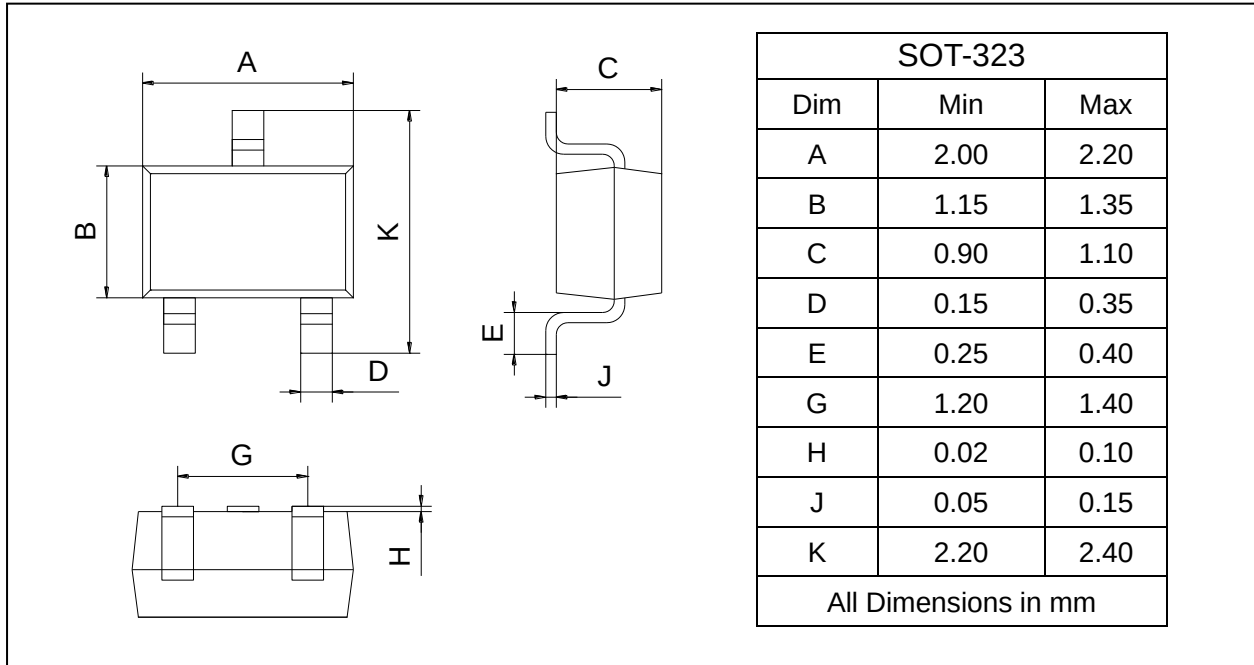
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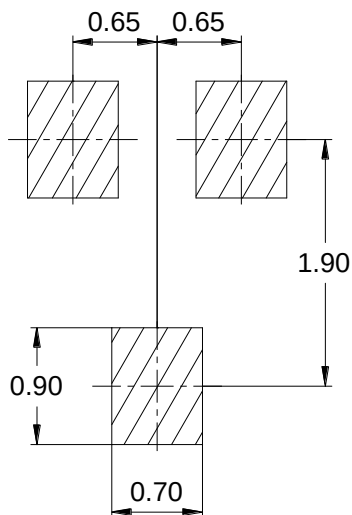
PACKAGE OUTLINE

Plastic surface mounted package

SOT-323



SOLDERING FOOTPRINT



Unit: mm

PACKAGE INFORMATION

Device	Package	Shipping
TDTAXXXUA	SOT-323	3000/Tape&Reel