

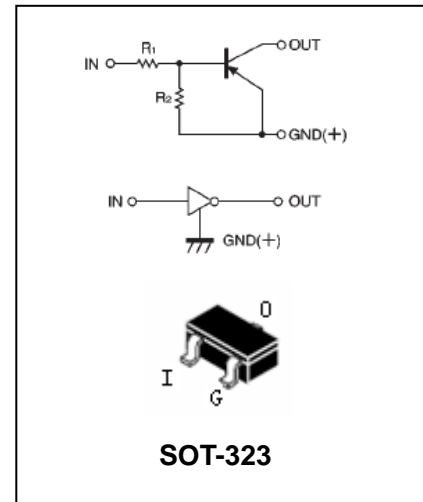
Digital Transistor

TDTA(R₁=R₂ SERIES)EUA

FEATURES

- Epitaxial planar die construction
- Complementary NPN types available(TDTC)
- Built-in biasing resistors,R₁=R₂
- Also available in lead free version
- Halogen free
- Qualified to AEC-Q101 Standards for High Reliability

HF



APPLICATIONS

- The NPN style digital transistor.

ORDERING INFORMATION

Type No.	Marking	Package Code
TDTA114EUA	14	SOT-323
TDTA143EUA	13	SOT-323
TDTA124EUA	15	SOT-323
TDTA144EUA	16	SOT-323

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units	
V _{CC}	Supply Voltage	-50	V	
V _{IN}	Input Voltage	TDTA114EUA TDTA124EUA TDTA143EUA TDTA144EUA	-40 to+10 -40 to+10 -30 to+10 -40 to+10	V
I _O	Output Current	TDTA114EUA TDTA124EUA TDTA143EUA TDTA144EUA	-50 -30 -100 -30	mA
I _C (Max.)	Output current	ALL	-100	mA
P _D	Power Dissipation		200	mW
R _{θJA}	Thermal Resistance, Junction to Ambient Air		625	°C/W
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	$V_{I(off)}$	$V_{CC}=-5V, I_o=-100\mu A$	-0.5	-1.1	-	V
Input Voltage	$V_{I(on)}$	$V_o=-0.3V, I_o=-10mA$	-	-1.9	-3	
TDTA114EUA		$V_o=-0.2V, I_o=-5mA$				
TDTA124EUA		$V_o=-0.3V, I_o=-20mA$				
TDTA143EUA TDTA144EUA		$V_o=-0.3V, I_o=-2mA$				
Output Voltage	$V_{O(on)}$	$I_o/I_i=-10mA/-0.5mA,$		-0.1	-0.3	V
TDTA114EUA						
TDTA124EUA						
TDTA143EUA TDTA144EUA						
Input Current	I_i	$V_i=-5V$			-0.88	mA
TDTA114EUA					-0.36	
TDTA124EUA					-1.8	
TDTA143EUA TDTA144EUA					-0.18	
Output Current	$I_{O(off)}$	$V_{CC}=-50V, V_i=0V$			-0.5	μA
DC Current Gain	G_i	$V_o=-5V, I_o=-5mA$	30			
TDTA114EUA			56			
TDTA124EUA			20			
TDTA143EUA TDTA144EUA			68			
Input Resistor	$R_1(R_2)$		7	10	13	k Ω
TDTA114EUA			15.4	22	28.6	
TDTA124EUA			3.29	4.7	6.11	
TDTA143EUA TDTA144EUA			32.9	47	61.1	
Resistance Ratio	R_2/R_1		0.8	1	1.2	
Gain-Bandwidth Product	f_T	$V_{CE}=-10V, I_E=5mA,$ $f=100MHz$	-	250	-	MHz

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TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

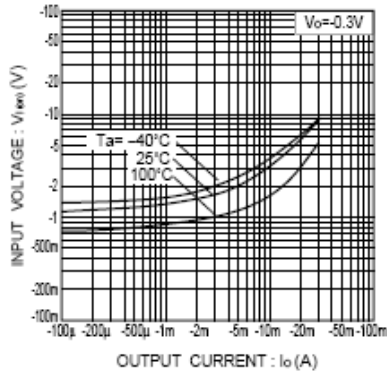


Fig.1 Input voltage vs. output current (ON characteristics)

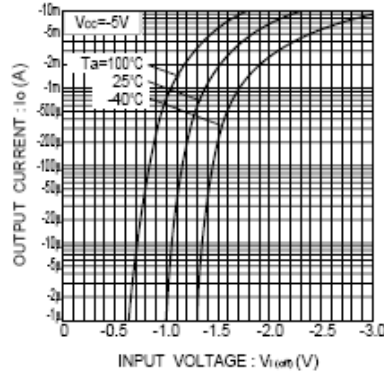


Fig.2 Output current vs. input voltage (OFF characteristics)

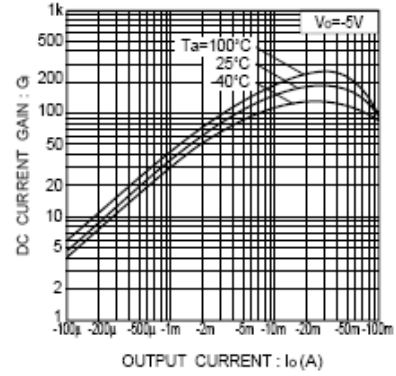


Fig.3 DC current gain vs. output current

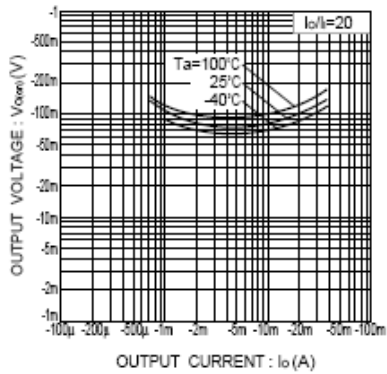


Fig.4 Output voltage vs. output current

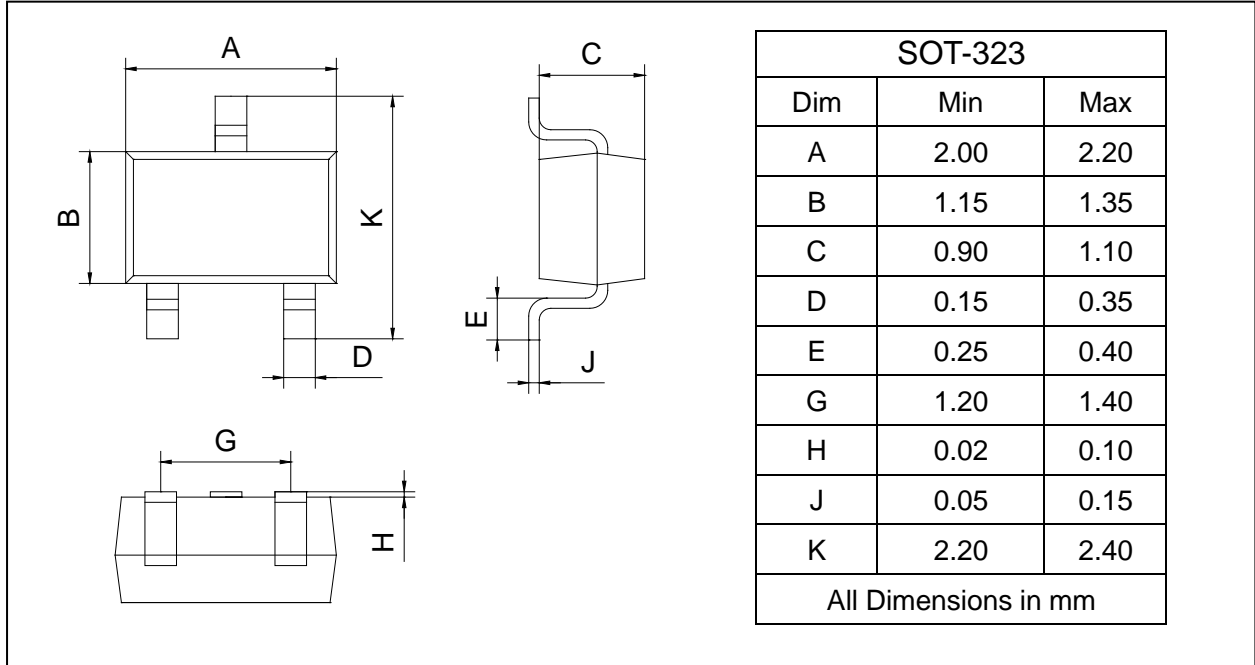
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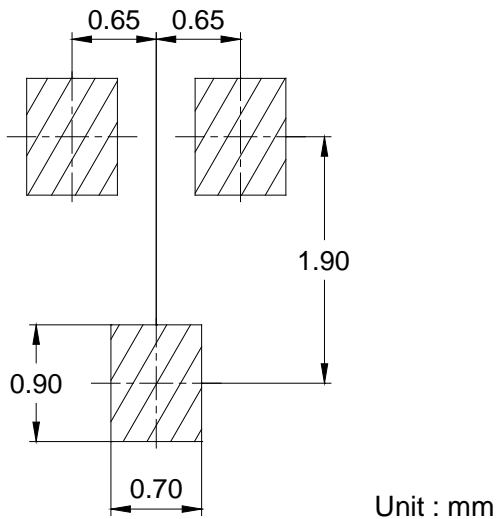
PACKAGE OUTLINE

Plastic surface mounted package

SOT-323



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
TDTA114EUA/124EUA/143EUA/144EUA	SOT-323	3000 pcs / Tape & Reel