

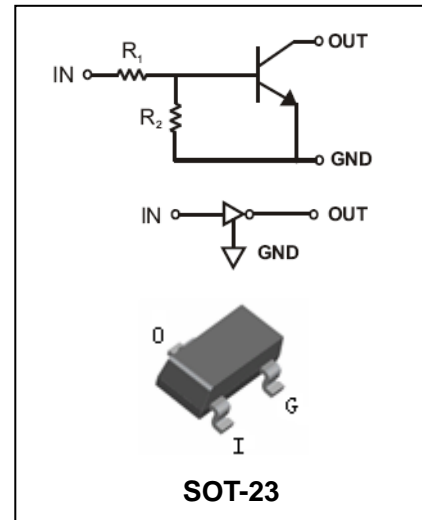
Digital Transistor

TDTC(R₁=R₂ SERIES)CA

FEATURES

- Epitaxial planar die construction
- Complementary PNP types available(DTA)
- 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
TDTC114ECA	24	SOT-23
TDTC124ECA	25	SOT-23
TDTC143ECA	23	SOT-23
TDTC144ECA	26	SOT-23
TDTC115ECA	29	SOT-23

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V _{CC}	Supply Voltage	50	V
V _{IN}	Input Voltage	TDTC114ECA -10 to+40 TDTC124ECA -10 to+40 TDTC143ECA -10 to+30 TDTC144ECA -10 to+40 TDTC115ECA -10 to +40	V
I _O	Output Current	TDTC114ECA 50 TDTC124ECA 30 TDTC143ECA 100 TDTC144ECA 100 TDTC115ECA 100	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 =100μA	0.5	-	-	V
Input Voltage	V _{I(on)}	TDTC114ECA V _O =0.3V, I _O =10mA	-	-	3	
Input Voltage		TDTC124ECA V _O =0.2V, I _O =5mA				
Input Voltage		TDTC143ECA V _O =0.3V, I _O =20mA				
Input Voltage		TDTC144ECA V _O =0.3V, I _O =2Ma				
Input Voltage		TDTC115ECA V _O =0.3V, I _O =1mA				
Output Voltage	V _{O(on)}	TDTC114ECA I _O /I _I =10mA/0.5mA	-	-	0.3	V
Output Voltage		TDTC124ECA I _O /I _I =10mA/0.5mA				
Output Voltage		TDTC143ECA I _O /I _I =10mA/0.5mA				
Output Voltage		TDTC144ECA I _O /I _I =10mA/0.5mA				
Output Voltage		TDTC115ECA I _O /I _I =5mA/0.25mA				
Input Current	I _I	V _I =5V	-	-	0.88	mA
Input Current					0.36	
Input Current					1.8	
Input Current					0.18	
Input Current					0.15	
Output Current	I _{O(off)}	V _{CC} =50V, V _I =0V	-	-	0.5	μA
DC Current Gain	G _I	TDTC114ECA V _O =5V, I _O =5mA	30	-	-	-
DC Current Gain		TDTC124ECA V _O =5V, I _O =5mA	56			
DC Current Gain		TDTC143ECA V _O =5V, I _O =10mA	20			
DC Current Gain		TDTC144ECA V _O =5V, I _O =5mA	68			
DC Current Gain		TDTC115ECA V _O =5V, I _O =5mA	82			
Input Resistor	R ₁ (R ₂)		7	10	13	kΩ
Input Resistor			15.4	22	28.6	
Input Resistor			3.29	4.7	6.11	
Input Resistor			32.9	47	61.1	
Input Resistor			70	100	130	
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

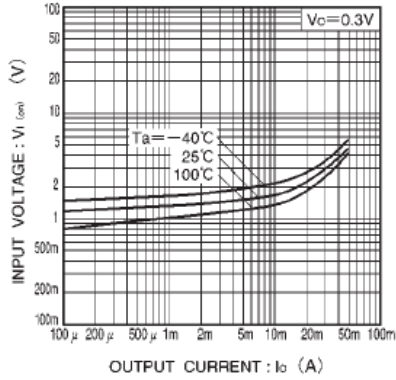


Fig.1 Input voltage vs. output current (ON characteristics)

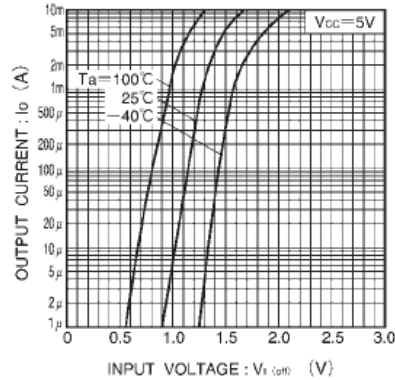


Fig.2 Output current vs. input voltage (OFF characteristics)

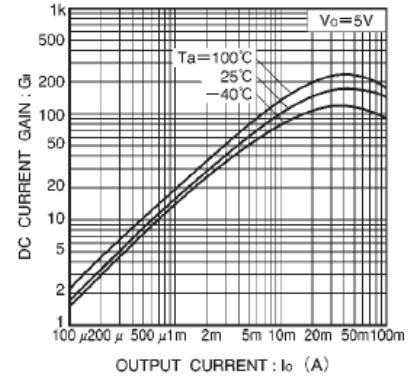


Fig.3 DC current gain vs. output current

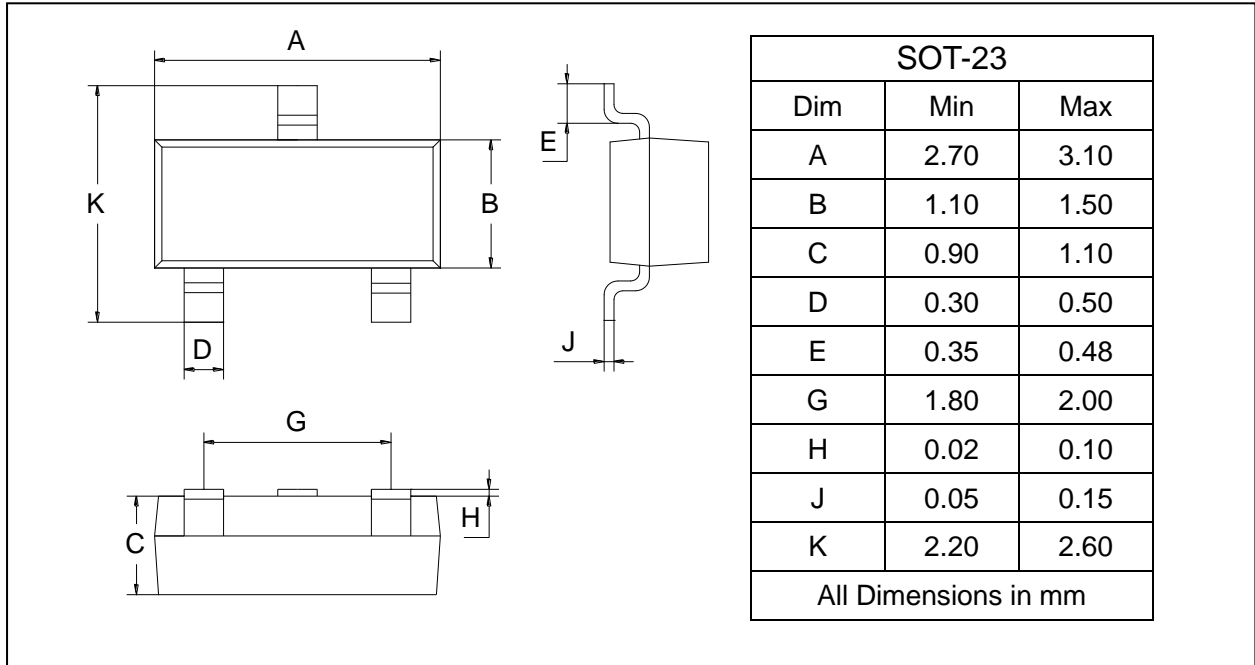
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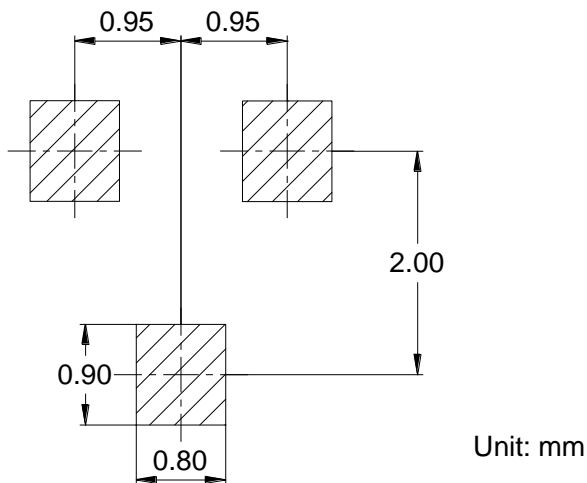
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
TDTC114ECA/124ECA/143ECA/144ECA/115ECA	SOT-23	3000 pcs / Tape & Reel