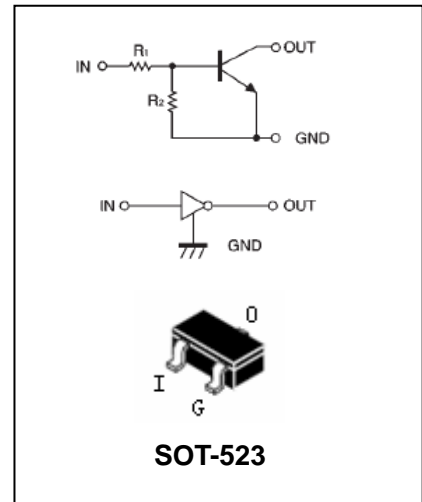


Digital Transistor

DTC(R₁=R₂ SERIES)E

FEATURES

- Epitaxial planar die construction.
- Complementary NPN types available(DTC).
- Built-in biasing resistors,R₁=R₂.
- Also available in lead free version.



APPLICATIONS

- The NPN style digital transistor.

ORDERING INFORMATION

Type No.	Marking	Package Code
DTC114EE	24	SOT-523
DTC124EE	25	SOT-523
DTC143EE	23	SOT-523
DTC144EE	26	SOT-523

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units	
V _{CC}	Supply Voltage	50	V	
V _{IN}	Input Voltage	DTC114EE DTC124EE DTC143EE DTC144EE	-10 to +40 -10 to +40 -10 to +30 -10 to +40	V
I _o	Output Current	DTC114EE DTC124EE DTC143EE DTC144EE	50 30 100 30	mA
I _C (Max.)	Output current	ALL	100	mA
P _D	Power Dissipation		150	mW
R _{θJA}	Thermal Resistance, Junction to Ambient Air		833	°C/W
T _j , T _{stg}	Operating and Storage and Temperature Range		-55 to +150	°C

Digital Transistor

DTC(R₁=R₂ SERIES)E

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	1.1	-	V	
Input Voltage	DTC114EE DTC124EE DTC143EE DTC144EE	V _O =0.3V, I _O =10mA V _O =0.2V, I _O =5mA V _O =0.3V, I _O =20mA V _O =0.3V, I _O =2mA	-	1.9	3		
Output Voltage	DTC114EE DTC124EE DTC143EE DTC144EE	I _O /I _I =10mA/0.5mA,	-	0.1	0.3		V
Output Voltage	V _{O(on)}						
Input Current	DTC114EE DTC124EE DTC143EE DTC144EE	I _I	V _I =5V	-	-	0.88 0.36 1.8 0.18	mA
Output Current	I _{O(off)}	V _{CC} =50V, V _I =0V	-	-	0.5	μA	
DC Current Gain	DTC114 EE DTC124EE DTC143EE DTC144EE	G _I	V _O =5V, I _O =5mA V _O =5V, I _O =5mA V _O =5V, I _O =10mA V _O =5V, I _O =5mA	30 56 20 68	- - -		
Input Resistor	DTC114EE DTC124EE DTC143EE DTC144EE	R ₁ (R ₂)	7 15.4 3.29 32.9	10 22 4.7 47	13 28.6 6.11 61.1	kΩ	
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	

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

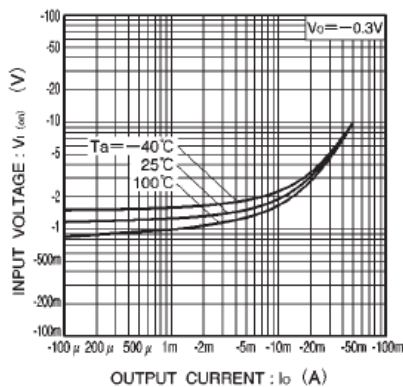


Fig.1 Input voltage vs. output current (ON characteristics)

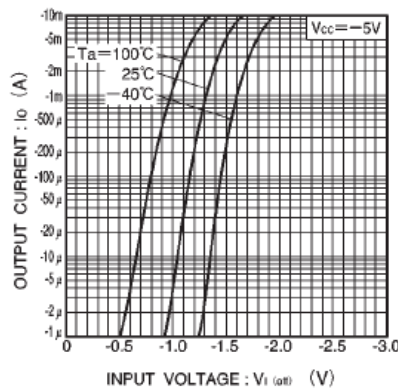


Fig.2 Output current vs. input voltage (OFF characteristics)

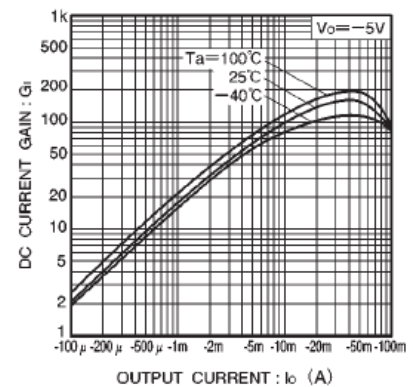


Fig.3 DC current gain vs. output current

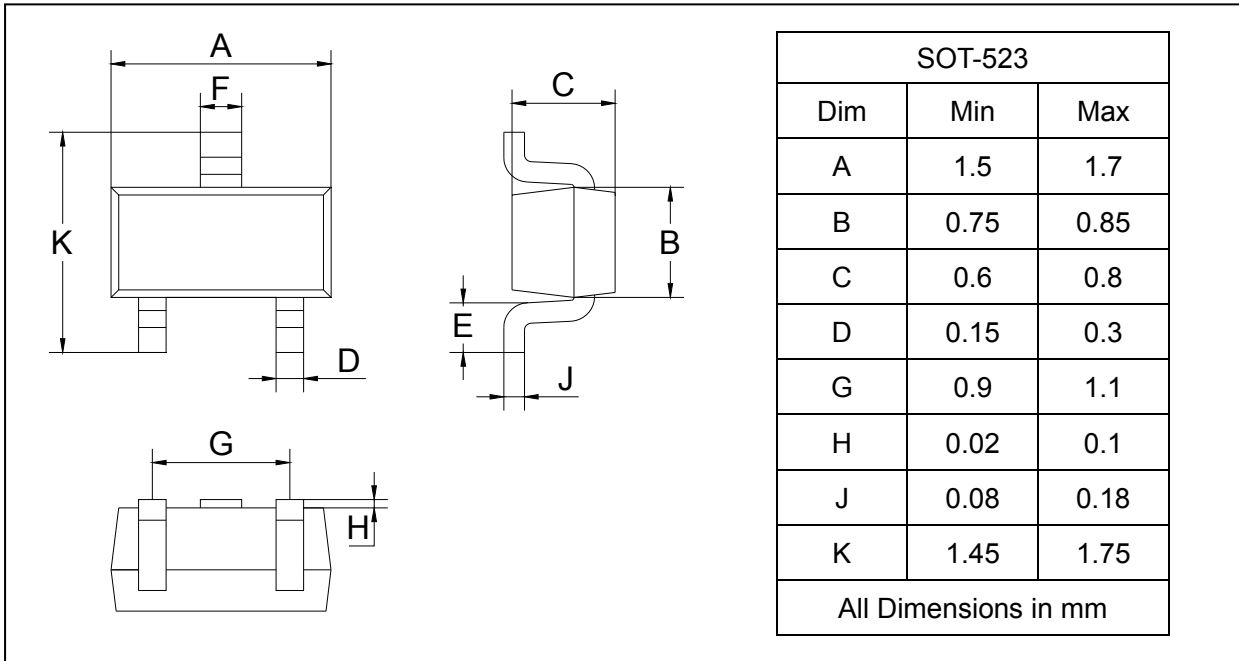
Digital Transistor

DTC(R₁=R₂ SERIES)E

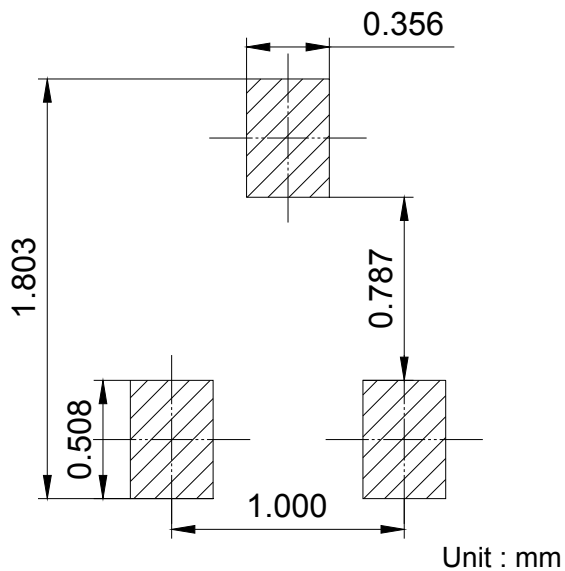
PACKAGE OUTLINE

Plastic surface mounted package

SOT-523



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
DTC114EE/124EE/143EE/144EE	SOT-523	3000/Tape&Reel