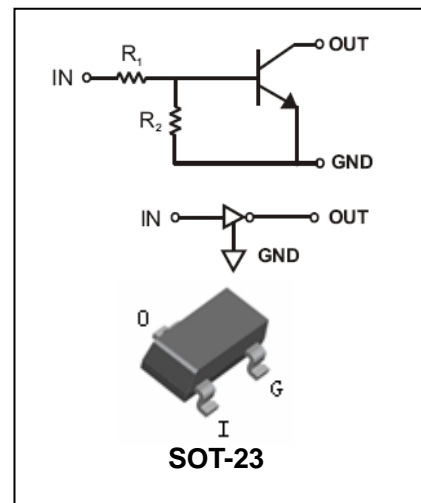


Digital Transistor

DTC(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.



APPLICATIONS

- The NPN style digital transistor.

ORDERING INFORMATION

Type No.	Marking	Package Code
DTC114ECA	24	SOT-23
DTC143ECA	23	SOT-23
DTC124ECA	25	SOT-23
DTC144ECA	26	SOT-23

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units	
V _{CC}	Supply Voltage	50	V	
V _{IN}	Input Voltage	DTC114ECA DTC124ECA DTC143ECA DTC144ECA	-10 to+40 -10 to+40 -10 to+30 -10 to+40	V
I _O	Output Current	DTC114ECA DTC124ECA DTC143ECA DTC144ECA	50 30 100 100	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

Digital Transistor

DTC(R₁=R₂ SERIES)CA

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	V _{I(on)}	DTC143ECA V _O =0.3V, I _O =20mA	-	1.9	3	
DTC114ECA V _O =0.3V, I _O =10mA						
DTC144ECA V _O =0.3V, I _O =2mA						
DTC124ECA V _O =0.3V, I _O =5mA						
Output Voltage	V _{O(on)}	I _O /I _I =10mA/0.5mA,	-	0.1	0.3	V
Input Current	I _I	V _I =5V	-	-	1.8 0.88 0.18 0.36	mA
Output Current	I _{O(off)}	V _{CC} =50V, V _I =0V	-	-	0.5	μA
DC Current Gain	G _I	V _O =5V, I _O =10mA	20	-	-	
DTC114ECA V _O =5V, I _O =5mA	20					
DTC144ECA V _O =5V, I _O =5mA	68					
DTC124ECA V _O =5V, I _O =5mA	56					
Input Resistor	R ₁ (R ₂)			4.7 10 47 22		kΩ
Input Resistor (R ₁) Tolerance	ΔR ₁	-	-30		+30	%
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

Digital Transistor

DTC(R₁=R₂ SERIES)CA

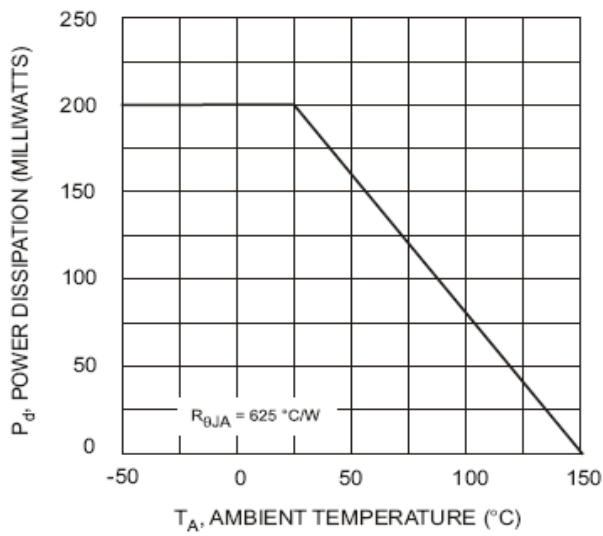


Fig. 1 Derating Curve

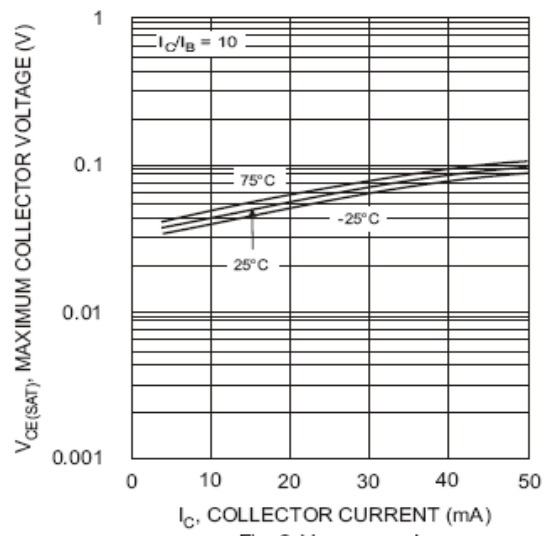


Fig. 2 $V_{CE(SAT)}$ vs. I_C

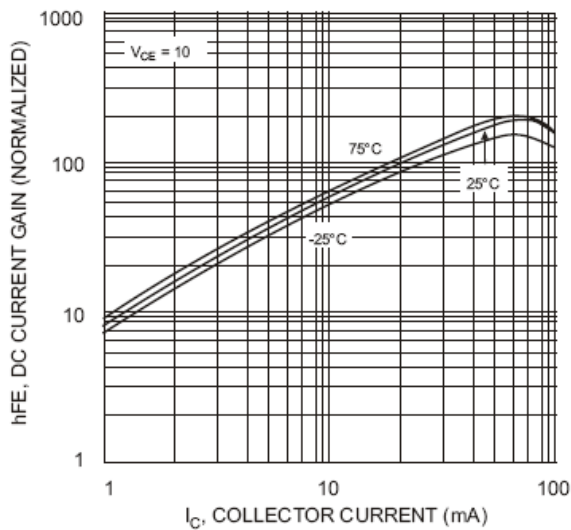


Fig. 3 DC CURRENT GAIN

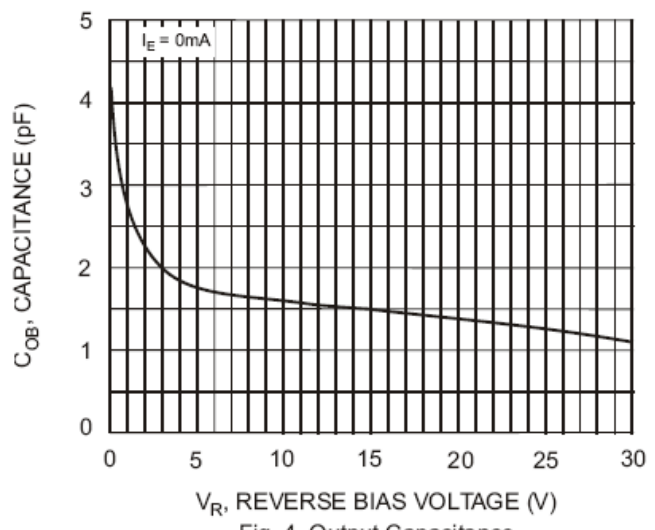


Fig. 4 Output Capacitance

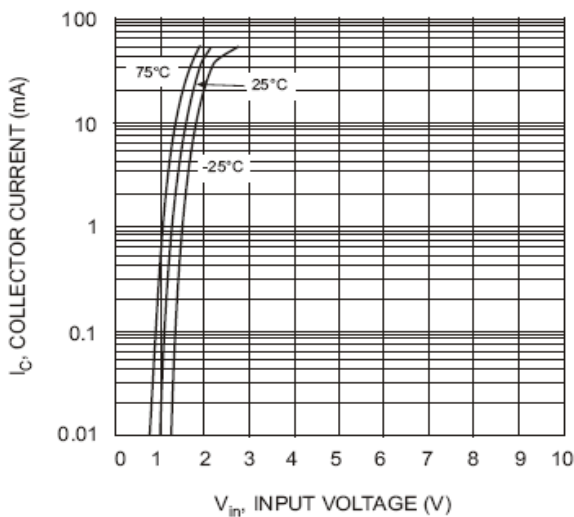


Fig. 5 Collector Current Vs. Input Voltage

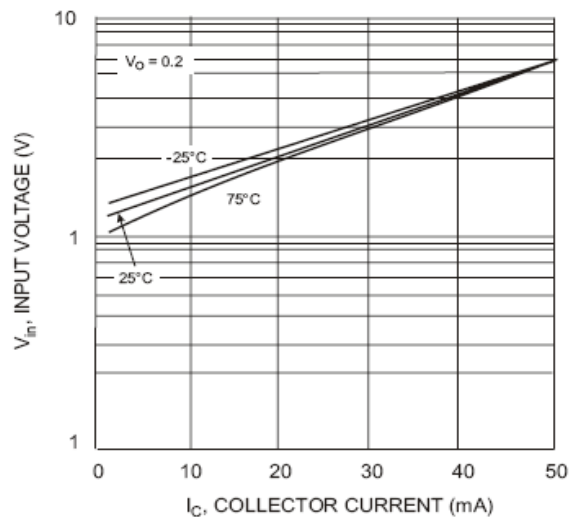


Fig. 6 Input Voltage vs. Collector Current

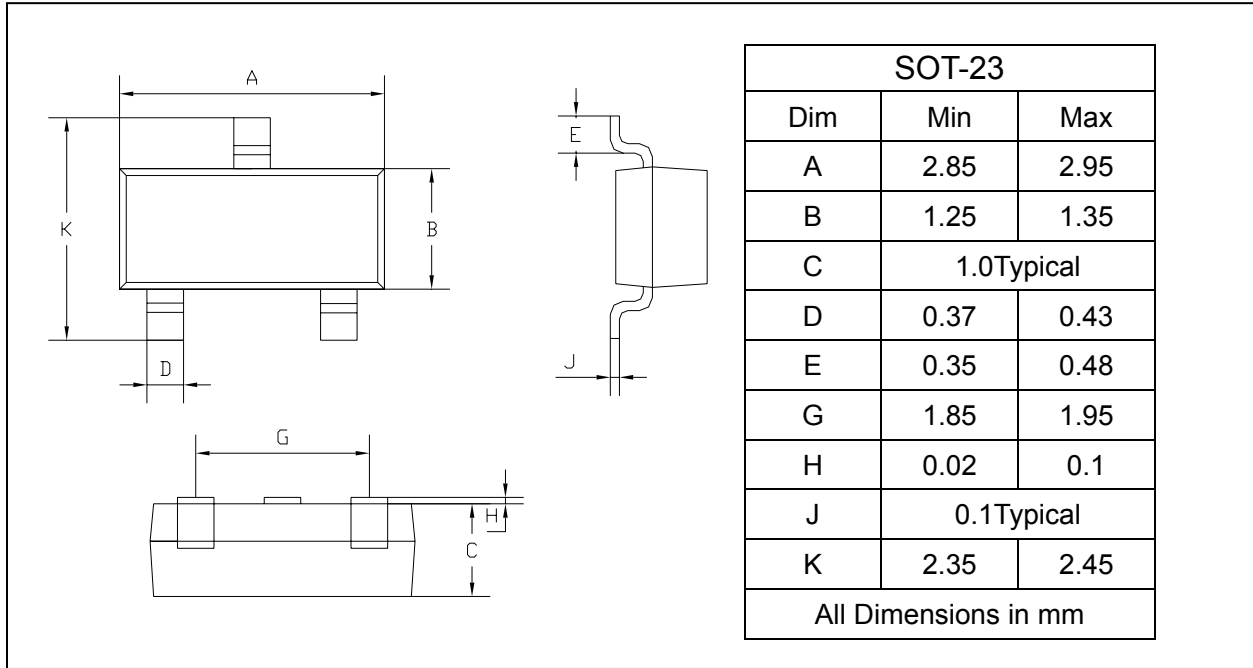
Digital Transistor

DTC(R₁=R₂ SERIES)CA

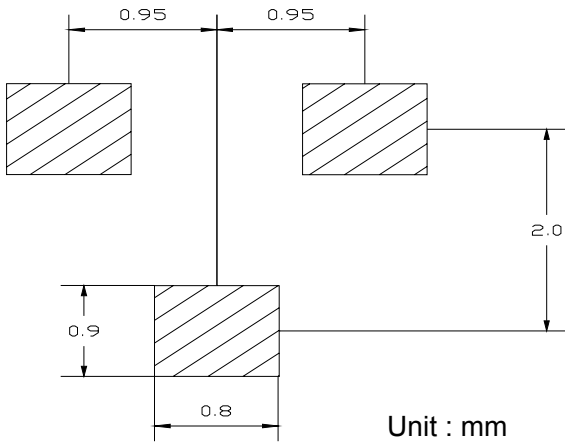
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
DTC114ECA/124ECA/143ECA/144ECA	SOT-23	3000/Tape&Reel