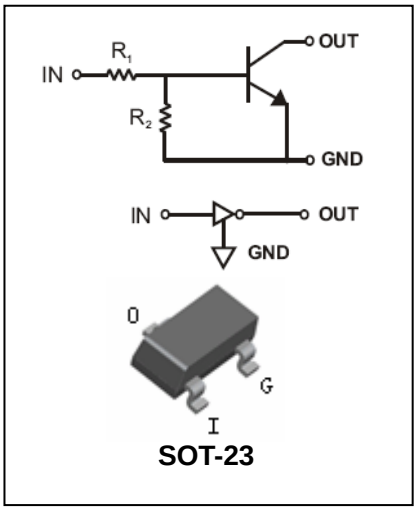
Digital Transistor DTC(R_1=R_2 SERIES)CA

FEATURES

Lead-free

- Epitaxial planar die construction.
- Complementary PNP types available(DTA).
- Built-in biasing resistors,R_1=R_2
- 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℃ unless otherwise specified

Symbol	Parameter		Value	Units
V_{CC}	Supply Voltage		50	V
V_{IN}	Input Voltage	DTC114ECA	-10 to+40	V
		DTC124ECA	-10 to+40	
		DTC143ECA	-10 to+30	
		DTC144ECA	-10 to+40	
I_O	Output Current	DTC114ECA	50	mA
		DTC124ECA	30	
		DTC143ECA	100	
		DTC144ECA	100	
I_C(Max.)	Output current	ALL	100	mA
P_D	Power Dissipation		200	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient Air		625	℃/W
T_j,T_{stg}	Operating and Storage and Temperature Range		-55 to +150	℃

Digital Transistor **DTC(R_1=R_2 SERIES)CA**

ELECTRICAL CHARACTERISTICS @ Ta=25℃ 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 DTC143ECA DTC114ECA DTC144ECA DTC124ECA	$V_{I(on)}$	V_O=0.3V,I_O=20mA V_O=0.3V,I_O=10mA V_O=0.3V,I_O=2mA V_O=0.3V,I_O=5mA	-	1.9	3	
Output Voltage DTC143ECA DTC114ECA DTC144ECA DTC124ECA	$V_{O(on)}$	I_o/I_I=10mA/0.5mA,	-	0.1	0.3	V
Input Current DTC143ECA DTC114ECA DTC144ECA DTC124ECA	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 DTC143ECA DTC114ECA DTC144ECA DTC124ECA	G_I	V_O=5V,I_O=10mA V_O=5V,I_O=5mA V_O=5V,I_O=5mA V_O=5V,I_O=5mA	20 20 68 56	-	-	
Input Resistor DTC143ECA DTC114ECA DTC144ECA DTC124ECA	$R_1(R_2)$			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℃ unless otherwise specified

Digital Transistor **DTC(R_1=R_2 SERIES)CA**

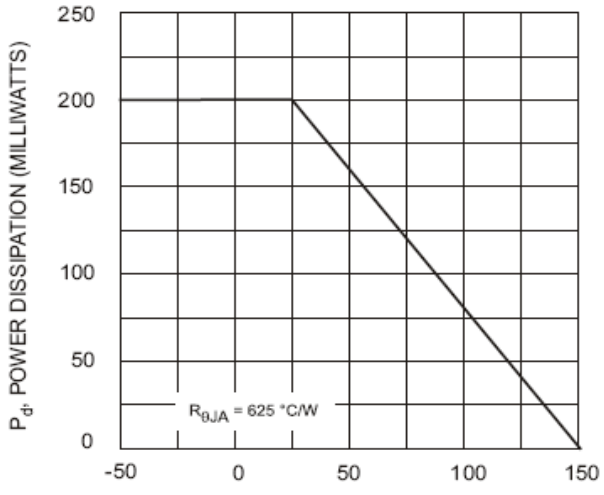


Fig. 1 Derating Curve

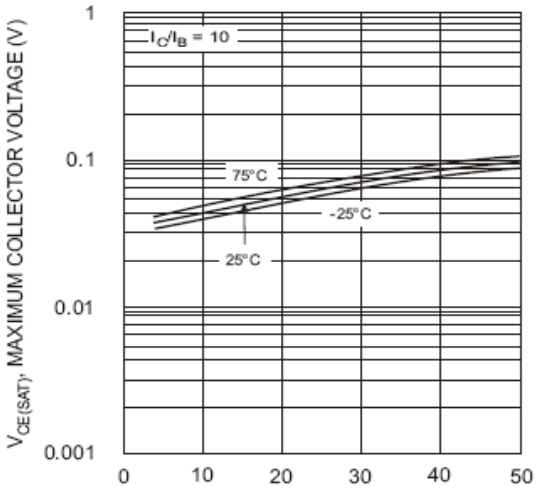


Fig. 2 $V_{CE(SAT)}$ vs. I_C

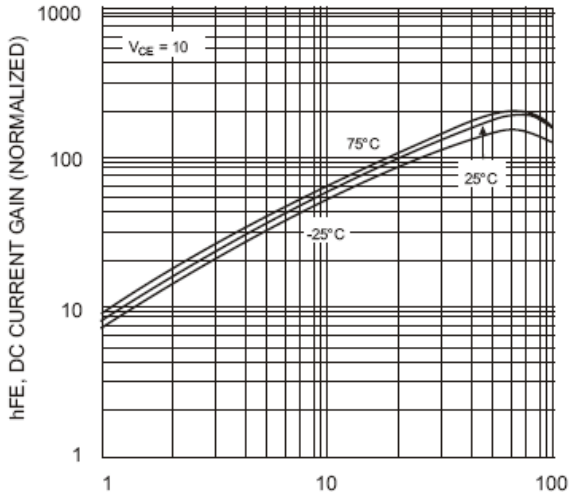


Fig. 3 DC CURRENT GAIN

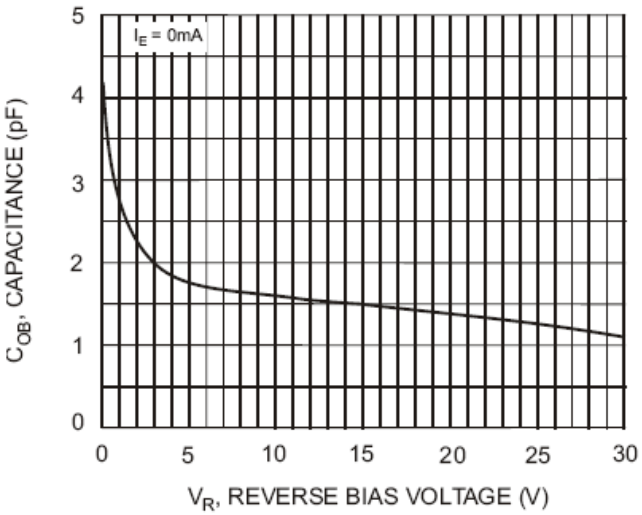


Fig. 4 Output Capacitance

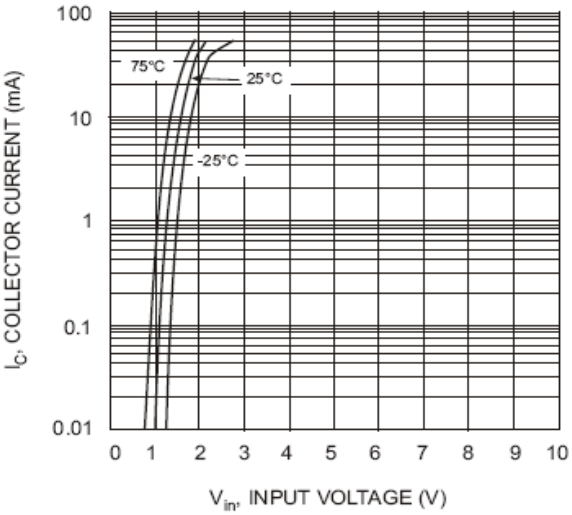


Fig. 5 Collector Current Vs. Input Voltage

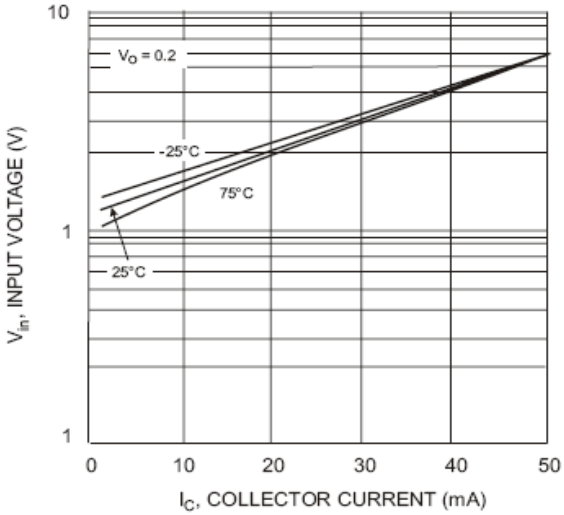
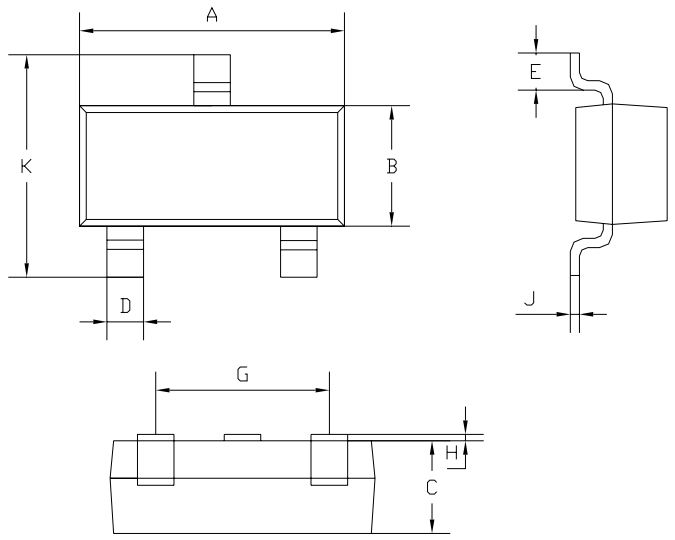


Fig. 6 Input Voltage vs. Collector Current

Digital Transistor **DTC(R_1=R_2 SERIES)CA**

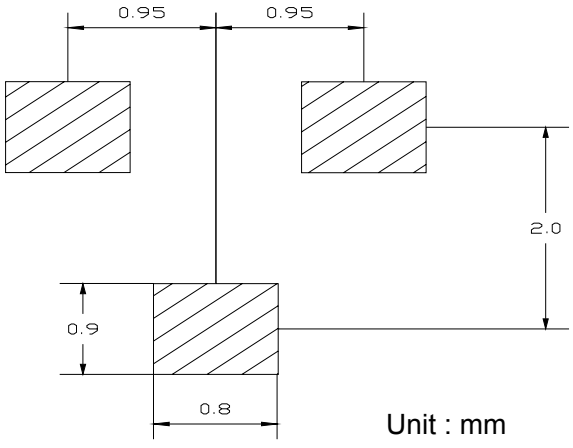
PACKAGE OUTLINE

Plastic surface mounted package SOT-23



SOT-23		
Dim	Min	Max
A	2.85	2.95
B	1.25	1.35
C	1.0Typical	
D	0.37	0.43
E	0.35	0.48
G	1.85	1.95
H	0.02	0.1
J	0.1Typical	
K	2.35	2.45
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

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