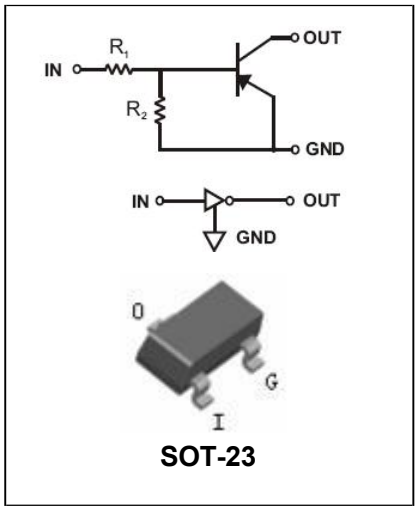
Digital Transistor

DTA($R_1 \neq R_2$ SERIES)CA

FEATURES

- Epitaxial planar die construction
- Complementary NPN types available(DTC)
- Built-in biasing resistors, $R_1 \neq R_2$
- Also available in lead free version



SOT-23

APPLICATIONS

- The PNP style digital transistor

ORDERING INFORMATION

Type No.	Marking	Package Code
DTA113ZCA	E11	SOT-23
DTA114WCA	74	SOT-23
DTA114YCA	54	SOT-23
DTA123JCA	E32	SOT-23
DTA123YCA	52	SOT-23
DTA143XCA	33	SOT-23
DTA143ZCA	E13	SOT-23

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter		Value	Units
V_{CC}	Supply Voltage		-50	V
V_{IN}	Input Voltage	DTA113ZCA	+5 to -10	V
		DTA114WCA	+10 to -30	
		DTA114YCA	+6 to -40	
		DTA123JCA	+5 to -12	
		DTA123YCA	+5 to -12	
		DTA143XCA	+7 to -20	
		DTA143ZCA	+5 to- 30	
I_O	Output Current	DTA113ZCA	-100	mA
		DTA114WCA	-100	
		DTA114YCA	-70	
		DTA123JCA	-100	
		DTA123YCA	-100	
		DTA143XCA	-100	
		DTA143ZCA	-100	
Symbol	**Parameter**		**Value**	**Units**
I_C(Max.)	Output current	ALL	-100	mA

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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	℃

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter		Symbol	Test conditions	MIN	TYP	MAX	UNIT
Input Voltage	DTA113ZCA	$V_{I(off)}$	V_{CC}=-5V,I_O=-100μA	-0.3	-	-	V
	DTA114WCA			-0.8			
	DTA114YCA			-0.3			
	DTA123JCA			-0.5			
	DTA123YCA			-0.3			
	DTA143XCA			-0.3			
	DTA143ZCA			-0.5			
Input Voltage	DTA113ZCA	$V_{I(on)}$	V_O=-0.3V,I_O=-20mA	-	-	-3.0	
	DTA114WCA		V_O=-0.3V,I_O=-2mA			-3.0	
	DTA114YCA		V_O=-0.3V,I_O=-1mA			-1.4	
	DTA123JCA		V_O=-0.3V,I_O=-5mA			-1.1	
	DTA123YCA		V_O=-0.3V,I_O=-20mA			-3.0	
	DTA143XCA		V_O=-0.3V,I_O=-20mA			-2.5	
	DTA143ZCA		V_O=-0.3V,I_O=-5mA			-1.3	
Output Voltage	DTA123JCA DTA143ZCA DTA114YCA	$V_{O(on)}$	I_o/I_I=-5mA/-0.25mA	-	-0.1	-0.3	V
	ALL Others		I_o/I_I=-10mA/-0.5mA				
Input Current	DTA113ZCA	I_I	V_I=-5V	-	-	-7.2	mA
	DTA114WCA					-0.88	
	DTA114YCA					-0.88	
	DTA123JCA					-3.6	
	DTA123YCA					-3.8	
	DTA143XCA					-1.8	
	DTA143ZCA					-1.8	
Output Current		$I_{O(off)}$	V_{CC}=-50V,V_I=0V	-	-	-0.5	μA
DC Current Gain	DTA113ZCA	G_I	V_O=-5V,I_O=-5mA	33	-	-	
	DTA114WCA		V_O=-5V,I_O=-10mA	24			
	DTA114YCA		V_O=-5V,I_O=-5mA	68			
	DTA123JCA		V_O=-5V,I_O=-10mA	80			
	DTA123YCA		V_O=-5V,I_O=-10mA	33			
	DTA143XCA		V_O=-5V,I_O=-10mA	30			
	DTA143ZCA		V_O=-5V,I_O=-10mA	80			

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Input Resistor	DTA113ZCA	$R_1(R_2)$		0.7	1(10)	1.3	kΩ
	DTA114WCA			7	10(4.7)	13	
	DTA114YCA			7	10(47)	13	
	DTA123JCA			1.54	2.2(47)	2.86	
	DTA123YCA			1.54	2.2(10)	2.86	
	DTA143XCA			3.29	4.7(10)	6.11	
	DTA143ZCA			3.29	4.7(47)	6.11	
Input Resistor (R_1) Tolerance		ΔR_1	-	-30		+30	%
Resistance Ratio Tolerance		$\Delta R_2/R_1$	-	-20		+20	%
Transition frequency		f_T	V_O =-10V,I_O=-5mA, f=100MHz	-	250	-	MHz

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

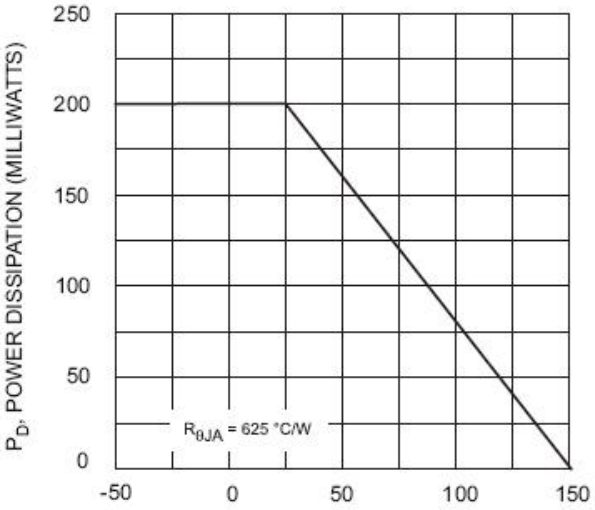

Fig. 1 Derating Curve

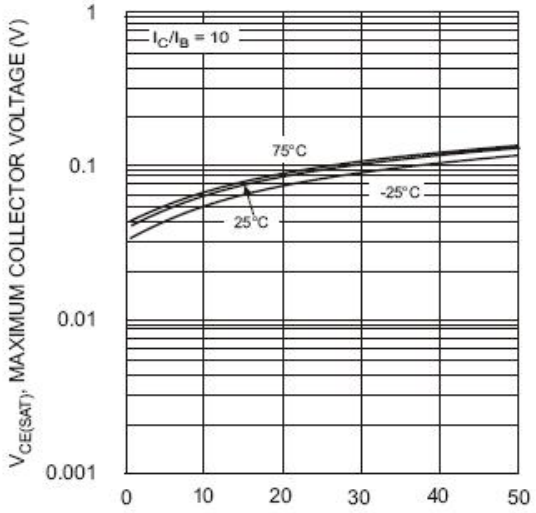

Fig. 2 $V_{CE(SAT)}$ vs. I_C

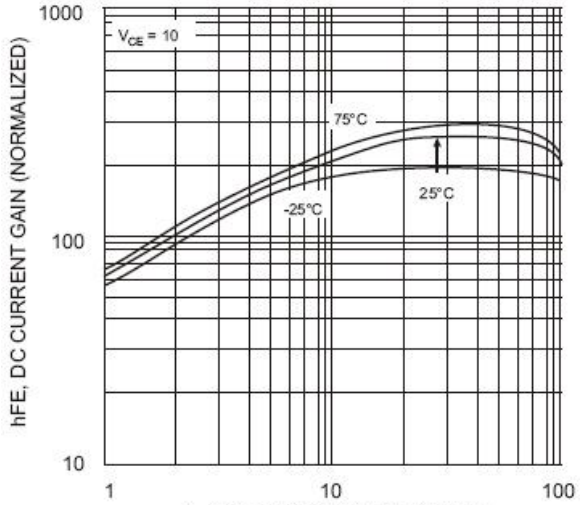

Fig. 3 DC CURRENT GAIN

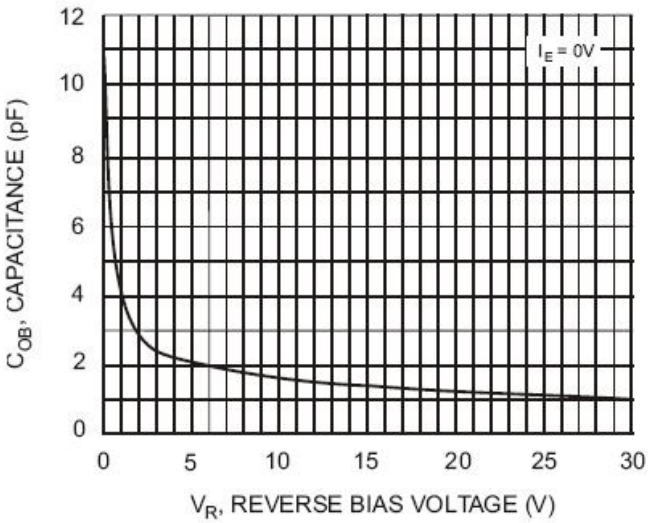

Fig. 4 Output Capacitance

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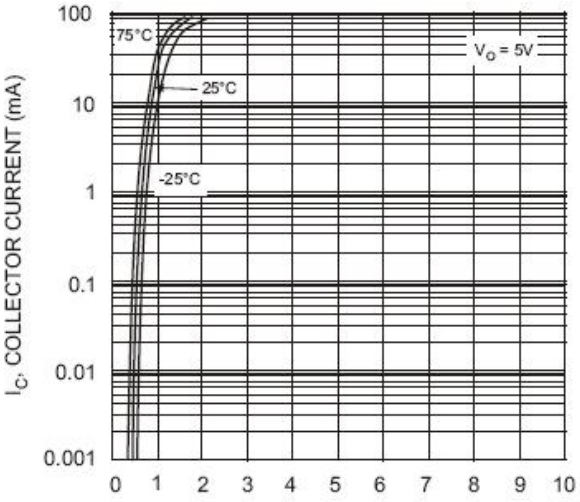

Fig. 5 Collector Current Vs. Input Voltage

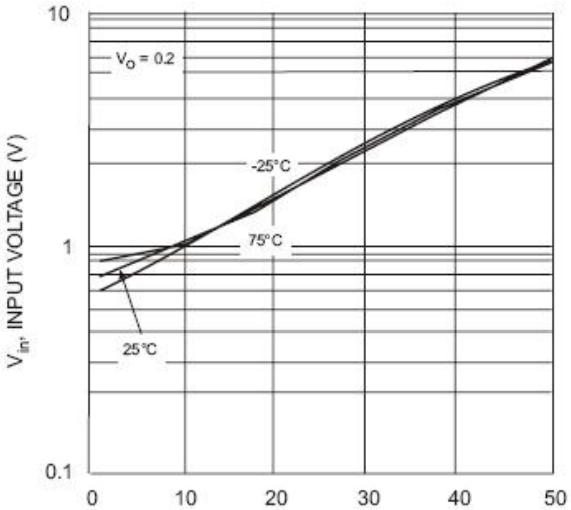

Fig. 6 Input Voltage vs. Collector Current

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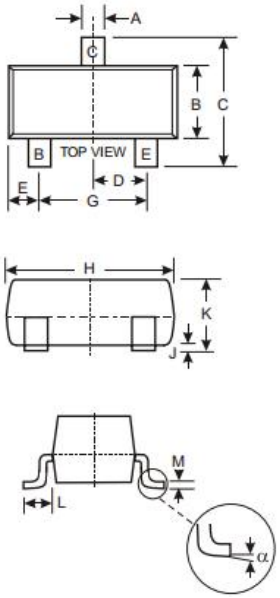
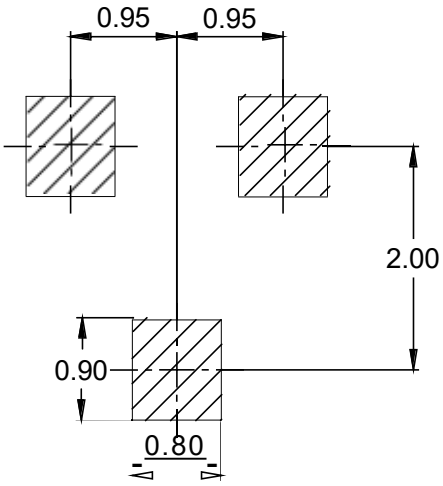
PACKAGE OUTLINE

Plastic surface mounted package SOT-23



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
α	0°	8°
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
DTAXXXXCA	SOT-23	3000 pcs / Tape & Reel