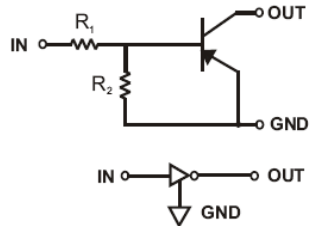
Digital Transistor

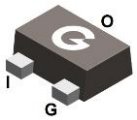
DTA($R_1 \neq R_2$ SERIES)M

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

HF





SOT-723

APPLICATIONS

- The PNP style digital transistor

ORDERING INFORMATION

Type No.	Marking	Package Code
DTA113ZM	E11	SOT-723
DTA114WM	74	SOT-723
DTA114YM	54	SOT-723
DTA123JM	E41	SOT-723
DTA123YM	61	SOT-723
DTA143XM	42	SOT-723
DTA143ZM	E22	SOT-723

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MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter		Value	Units
V_{CC}	Supply Voltage		-50	V
V_{IN}	Input Voltage	DTA113ZM	+5 to -10	V
		DTA114WM	+10 to -30	
		DTA114YM	+6 to -40	
		DTA123JM	+5 to -12	
		DTA123YM	+5 to -12	
		DTA143XM	+7 to -20	
		DTA143ZM	+5 to -30	
I_O	Output Current	DTA113ZM	-100	mA
		DTA114WM	-100	
		DTA114YM	-70	
		DTA123JM	-100	
		DTA123YM	-100	
		DTA143XM	-100	
		DTA143ZM	-100	
I_C(Max.)	Output current	ALL	-100	mA
P_D	Power Dissipation		100	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient Air		1250	℃/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	DTA113ZM	$V_{I(off)}$	V_{CC}=-5V,I_O=-100μA	-0.3	-	-	V
	DTA114WM			-0.8			
	DTA114YM			-0.3			
	DTA123JM			-0.5			
	DTA123YM			-0.3			
	DTA143XM			-0.3			
	DTA143ZM			-0.5			
Input Voltage	DTA113ZM	$V_{I(on)}$	V_O=-0.3V,I_O=-20mA	-	-	-3.0	
	DTA114WM		V_O=-0.3V,I_O=-2mA			-3.0	
	DTA114YM		V_O=-0.3V,I_O=-1mA			-1.4	
	DTA123JM		V_O=-0.3V,I_O=-5mA			-1.1	
	DTA123YM		V_O=-0.3V,I_O=-20mA			-3.0	
	DTA143XM		V_O=-0.3V,I_O=-20mA			-2.5	
	DTA143ZM		V_O=-0.3V,I_O=-5mA			-1.3	

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Output Voltage	DTA123JM DTA143ZM DTA114YM ALL Others	$V_{O(on)}$	I_o/I_I=-5mA/-0.25mA I_o/I_I=-10mA/-0.5mA	-	-0.1	-0.3	V
Input Current	DTA113ZM DTA114WM DTA114YM DTA123JM DTA123YM DTA143XM DTA143ZM	I_I	V_I=-5V	-	-	-7.2 -0.88 -0.88 -3.6 -3.8 -1.8 -1.8	mA
Output Current		$I_{O(off)}$	V_{CC}=-50V,V_I=0V	-	-	-0.5	μA
DC Current Gain	DTA113ZM DTA114WM DTA114YM DTA123JM DTA123YM DTA143XM DTA143ZM	G_I	V_O=-5V,I_O=-5mA V_O=-5V,I_O=-10mA V_O=-5V,I_O=-5mA V_O=-5V,I_O=-10mA V_O=-5V,I_O=-10mA V_O=-5V,I_O=-10mA V_O=-5V,I_O=-10mA	33 24 68 80 33 30 80	-	-	
Parameter		**Symbol**	**Test conditions**	**MIN**	**TYP**	**MAX**	**UNIT**
Input Resistor	DTA113ZM DTA114WM DTA114YM DTA123JM DTA123YM DTA143XM DTA143ZM	$R_1(R_2)$		0.7 7 7 1.54 1.54 3.29 3.29	1(10) 10(4.7) 10(47) 2.2(47) 2.2(10) 4.7(10) 4.7(47)	1.3 13 13 2.86 2.86 6.11 6.11	kΩ
Input Resistor (R_1) Tolerance		ΔR_1	-	-30		+30	%
Resistance Ratio Tolerance		$\Delta R_2/R_1$	-	-20		+20	%
Gain-Bandwidth Product		f_T	V_{CE}=-10V,I_E=-5mA, f=100MHz	-	250	-	MHz

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TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

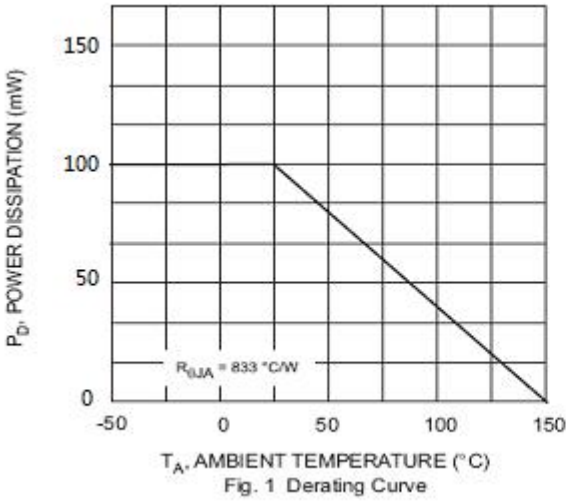

Fig. 1 Derating Curve

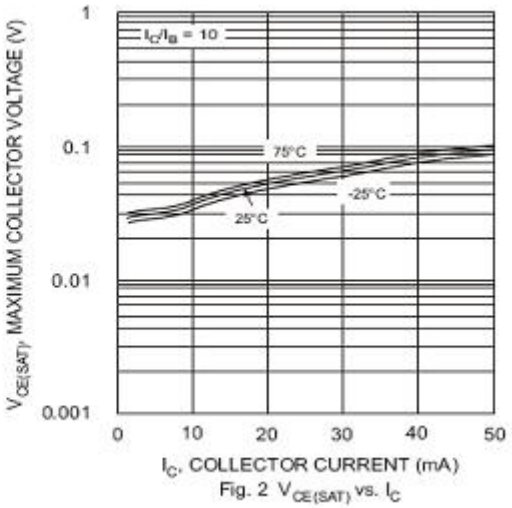

Fig. 2 $V_{CE(SAT)}$ vs. I_C

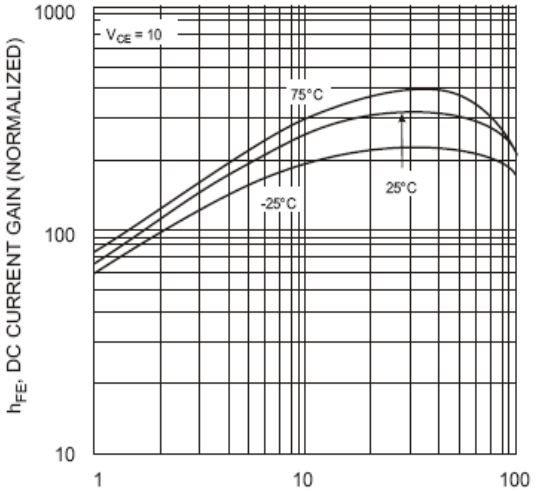

Fig. 3 DC Current Gain

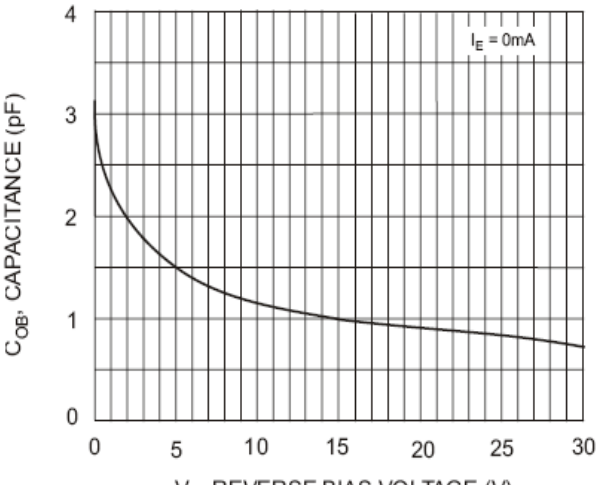

Fig. 4 Output Capacitance

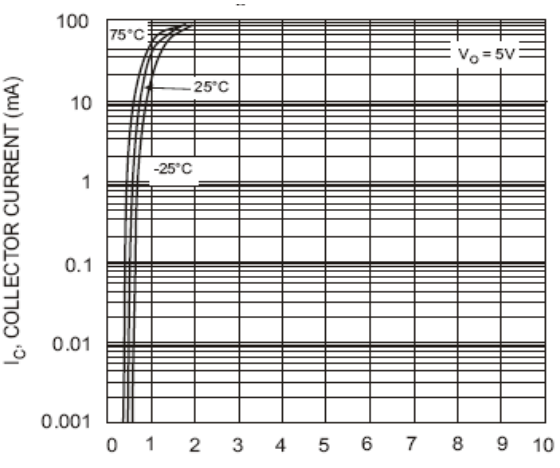

Fig. 5 Collector Current Vs. Input Voltage

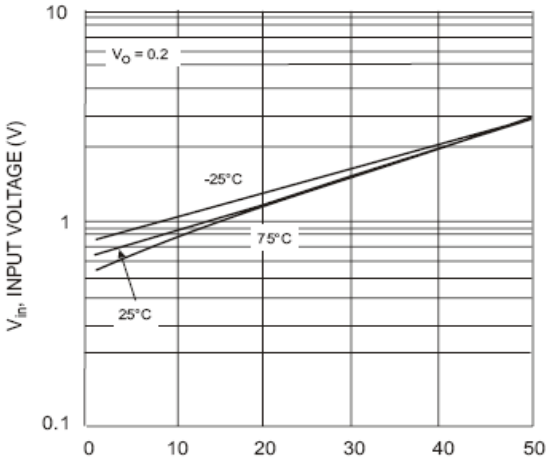

Fig. 6 Input Voltage vs. Collector Current

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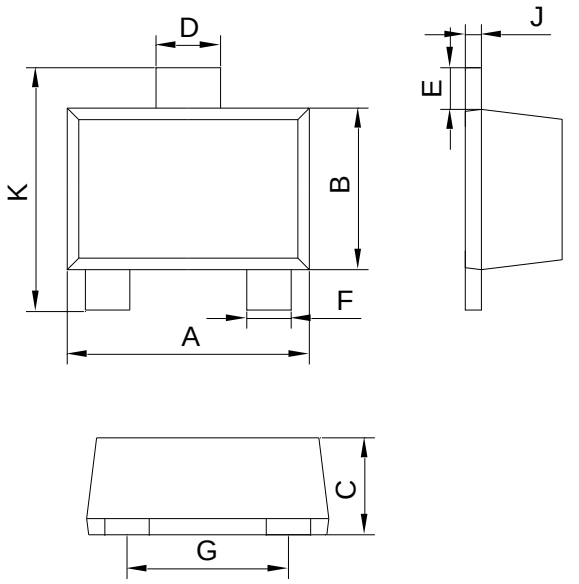
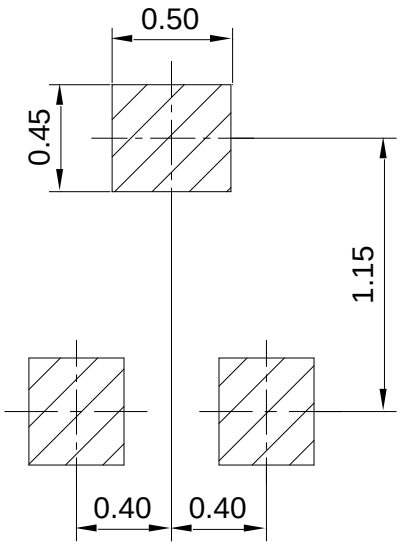
PACKAGE OUTLINE

Plastic surface mounted package SOT-723



SOT-723		
Dim	Min	Max
A	1.10	1.30
B	0.70	0.90
C	0.40	0.54
D	0.22	0.42
E	0.10	0.30
F	0.12	0.32
G	0.70	0.90
J	0.08	0.15
K	1.10	1.30
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
DTAXXXXM	SOT-723	10000 pcs / Tape & Reel