DDTA144VCA-7-F Datasheet

https://www.DiGi-Electronics.com

DiGi Electronics Part Number	DDTA144VCA-7-F-DG
Manufacturer	Diodes Incorporated
Manufacturer Product Number	DDTA144VCA-7-F
Description	TRANS PREBIAS PNP 50V SOT23-3
Detailed Description	Pre-Biased Bipolar Transistor (BJT) PNP - Pre-Biased 50 V 100 mA 250 MHz 200 mW Surface Mount SOT-23-3

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
DDTA144VCA-7-F	Diodes Incorporated
Series:	Product Status:
-	Active
Transistor Type:	Current - Collector (Ic) (Max):
PNP - Pre-Biased	100 mA
Voltage - Collector Emitter Breakdown (Max):	Resistor - Base (R1):
50 V	47 kOhms
Resistor - Emitter Base (R2):	DC Current Gain (hFE) (Min) @ Ic, Vce:
10 kOhms	33 @ 10mA, 5V
Vce Saturation (Max) @ Ib, Ic:	Current - Collector Cutoff (Max):
300mV @ 500µA, 10mA	500nA
Frequency - Transition:	Power - Max:
250 MHz	200 mW
Mounting Type:	Package / Case:
Surface Mount	TO-236-3, SC-59, SOT-23-3
Supplier Device Package:	Base Product Number:
SOT-23-3	DDTA144

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0075	

NEW PRODUCT

DDTA (R1≠R2 SERIES) CA

PNP PRE-BIASED SMALL SIGNAL SOT-23
SURFACE MOUNT TRANSISTOR

Please click here to visit our online spice models database.

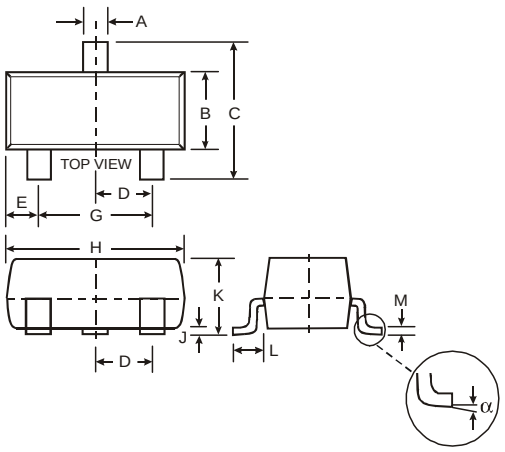
Features

- Epitaxial Planar Die Construction
- Complementary NPN Types Available (DDTC)
- Built-In Biasing Resistors, R1≠R2
- **Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 1 and 2)**

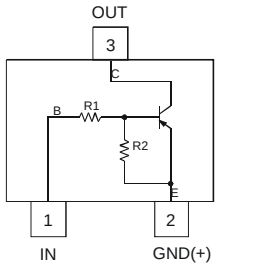
Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Marking and Date Code: See Table Below & Page 4
- Ordering Information: See Page 4
- Weight: 0.008 grams (approximate)

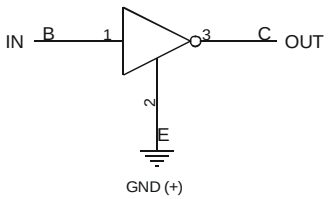
P/N	R1 (NOM)	R2 (NOM)	MARKING
DDTA113ZCA	1KΩ	10KΩ	P02
DDTA123YCA	2.2KΩ	10KΩ	P05
DDTA123JCA	2.2KΩ	47KΩ	P06
DDTA143XCA	4.7KΩ	10KΩ	P09
DDTA143FCA	4.7KΩ	22KΩ	P10
DDTA143ZCA	4.7KΩ	47KΩ	P11
DDTA114YCA	10KΩ	47KΩ	P14
DDTA114WCA	10KΩ	4.7KΩ	P15
DDTA124XCA	22KΩ	47KΩ	P18
DDTA144VCA	47KΩ	10KΩ	P21
DDTA144WCA	47KΩ	22KΩ	P22



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		



Schematic and Pin Configuration



Equivalent Inverter Circuit

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Supply Voltage, (3) to (2)		V_{CC}	-50	V
Input Voltage, (1) to (2)	DDTA113ZCA	V_{IN}	+5 to -10	V
	DDTA123YCA		+5 to -12	
	DDTA123JCA		+5 to -12	
	DDTA143XCA		+7 to -20	
	DDTA143FCA		+6 to -30	
	DDTA143ZCA		+5 to -30	
	DDTA114YCA		+6 to -40	
	DDTA114WCA		+10 to -30	
	DDTA124XCA		+10 to -40	
	DDTA144VCA		+15 to -40	
	DDTA144WCA		+10 to -40	
Output Current	DDTA113ZCA	I_O	-100	mA
	DDTA123YCA		-100	
	DDTA123JCA		-100	
	DDTA143XCA		-100	
	DDTA143FCA		-100	
	DDTA143ZCA		-100	
	DDTA114YCA		-70	
	DDTA114WCA		-100	
	DDTA124XCA		-50	
	DDTA144VCA		-30	
	DDTA144WCA		-30	
Output Current	All	I_C (Max)	-100	mA

Notes: 1. No purposefully added lead. Halogen and Antimony Free.
2. Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb_2O_3 Fire Retardants.

NEW PRODUCT

Thermal Characteristics

Characteristic		Symbol	Value	Unit
Power Dissipation		P_d	200	mW
Thermal Resistance, Junction to Ambient Air	(Note 3)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range		T_j, T_{STG}	-55 to +150	°C

Notes: 3. Mounted on FR4 PC Board with recommended pad layout at http://www.diodes.com/datasheets/ap02001.pdf.

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	DDTA113ZCA	$V_{I(off)}$	-0.3	—	—	V	V_{CC} = 5V, I_O = 100μA
	DDTA123YCA		-0.3				
	DDTA123JCA		-0.5				
	DDTA143XCA		-0.3				
	DDTA143FCA		-0.3				
	DDTA143ZCA		-0.5				
	DDTA114YCA		-0.3				
	DDTA114WCA		-0.8				
	DDTA124XCA		-0.4				
	DDTA144VCA		-1.0				
	DDTA144WCA		-0.8				
Input Voltage	DDTA113ZCA	$V_{I(on)}$	—	—	-3.0		V_O = -0.3V, I_O = -20mA
	DDTA123YCA				-3.0		V_O = -0.3V, I_O = -20mA
	DDTA123JCA				-1.1		V_O = -0.3V, I_O = -5mA
	DDTA143XCA				-2.5		V_O = -0.3V, I_O = -20mA
	DDTA143FCA				-1.3		V_O = -0.3V, I_O = -3mA
	DDTA143ZCA				-1.3		V_O = -0.3V, I_O = -5mA
	DDTA114YCA				-1.4		V_O = -0.3V, I_O = -1mA
	DDTA114WCA				-3.0		V_O = -0.3V, I_O = -2mA
	DDTA124XCA				-2.5		V_O = -0.3V, I_O = -2mA
	DDTA144VCA				-5.0		V_O = -0.3V, I_O = -2mA
	DDTA144WCA				-4.0		V_O = -0.3V, I_O = -2mA
Output Voltage		$V_{O(on)}$	—	-0.1	-0.3	V	I_O/I_I = -5mA/-0.25mA DDTA123JCA I_O/I_I = -5mA/-0.25mA DDTA143ZCA I_O/I_I = -5mA/-0.25mA DDTA114YCA I_O/I_I = -10mA/-0.5mA All Others
Input Current	DDTA113ZCA	I_I	—	—	-7.2	mA	V_I = -5V
	DDTA123YCA				-3.8		
	DDTA123JCA				-3.6		
	DDTA143XCA				-1.8		
	DDTA143FCA				-1.8		
	DDTA143ZCA				-1.8		
	DDTA114YCA				-0.88		
	DDTA114WCA				-0.88		
	DDTA124XCA				-0.36		
	DDTA144VCA				-0.16		
	DDTA144WCA				-0.16		
Output Current		$I_{O(off)}$	—	—	-0.5	μA	V_{CC} = -50V, V_I = 0V
DC Current Gain	DDTA113ZCA	G_I	-33	—	—	—	V_O = -5V, I_O = -10mA
	DDTA123YCA		-33				
	DDTA123JCA		-80				
	DDTA143XCA		-30				
	DDTA143FCA		-68				
	DDTA143ZCA		-80				
	DDTA114YCA		-68				
	DDTA114WCA		-24				
	DDTA124XCA		-68				
	DDTA144VCA		-33				
	DDTA144WCA		-56				
Input Resistor Tolerance		ΔR_1	-30	—	+30	%	—
Resistance Ratio Tolerance		$\Delta R_2/R_1$	-20	—	+20	%	—
Gain-Bandwidth Product*		f_T	—	250	—	MHz	V_{CE} = -10V, I_E = 5mA, f = 100MHz

* Transistor - For Reference Only

NEW PRODUCT

Typical Curves –DDTA123JCA

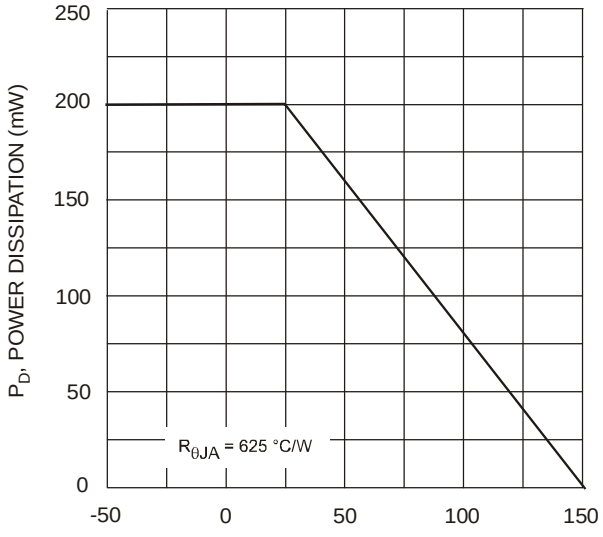


Fig. 1 Derating Curve

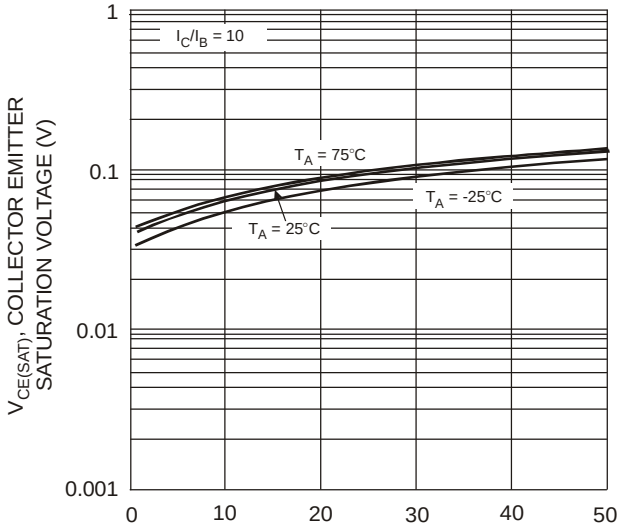


Fig. 2 $V_{CE(SAT)}$ vs. I_C

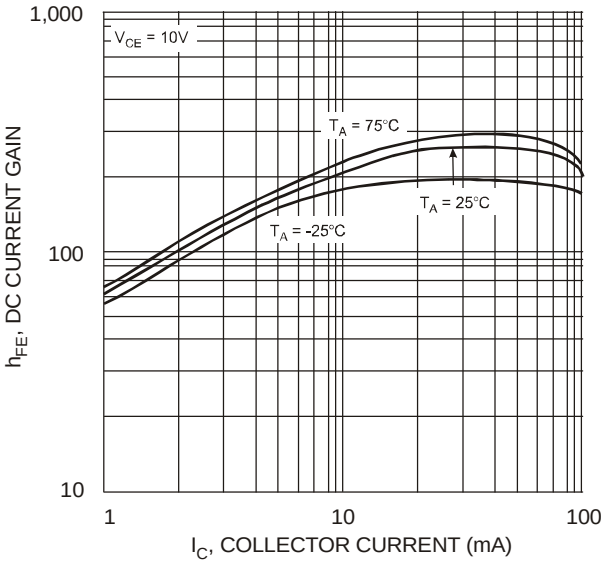


Fig. 3 DC Current Gain

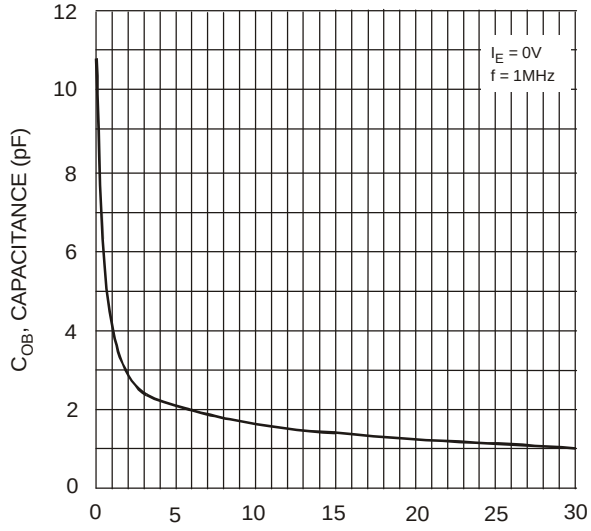


Fig. 4 Output Capacitance

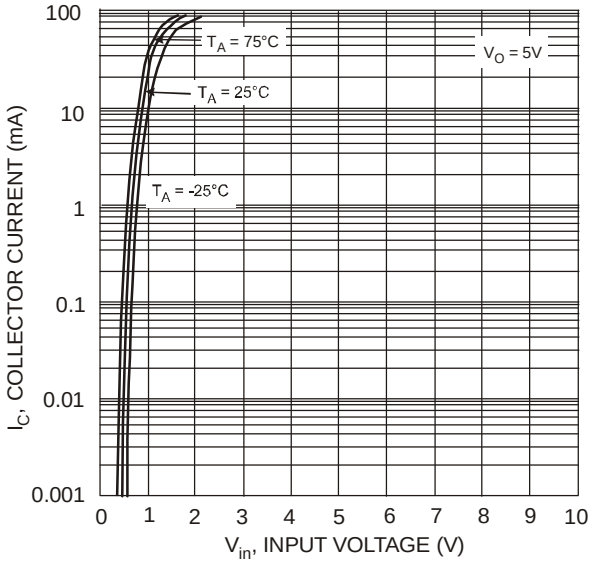


Fig. 5 Collector Current vs. Input Voltage

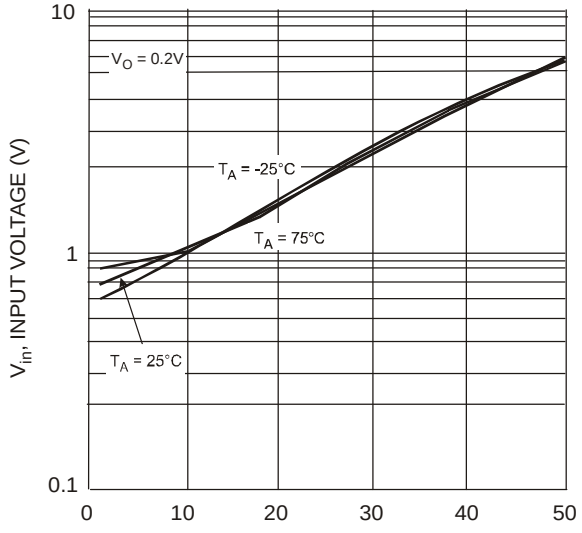


Fig. 6 Input Voltage vs. Collector Current

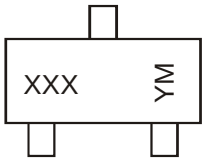
NEW PRODUCT

Ordering Information (Note 4)

Device	Packaging	Shipping
DDTA113ZCA-7-F	SOT-23	3000/Tape & Reel
DDTA123YCA-7-F	SOT-23	3000/Tape & Reel
DDTA123JCA-7-F	SOT-23	3000/Tape & Reel
DDTA143XCA-7-F	SOT-23	3000/Tape & Reel
DDTA143FCA-7-F	SOT-23	3000/Tape & Reel
DDTA143ZCA-7-F	SOT-23	3000/Tape & Reel
DDTA114YCA-7-F	SOT-23	3000/Tape & Reel
DDTA114WCA-7-F	SOT-23	3000/Tape & Reel
DDTA124XCA-7-F	SOT-23	3000/Tape & Reel
DDTA144VCA-7-F	SOT-23	3000/Tape & Reel
DDTA144WCA-7-F	SOT-23	3000/Tape & Reel

Notes: 4. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



XXX = Product Type Marking Code, See Table on Page 1
YM = Date Code Marking
Y = Year ex: T = 2006
M = Month ex: 9 = September

Date Code Key

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	R	S	T	U	V	W	X	Y	Z

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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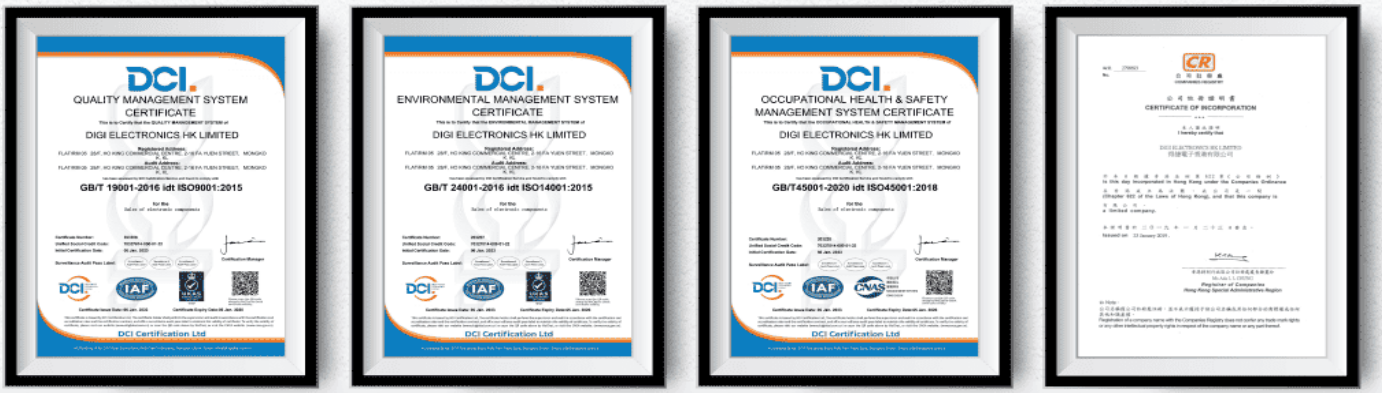

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