

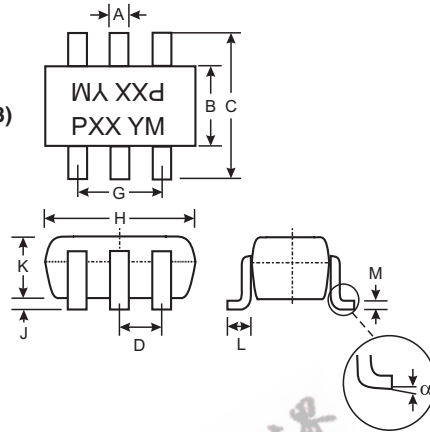
Features

- Epitaxial Planar Die Construction
- Complementary NPN Types Available (DDC)
- Built-In Biasing Resistors
- Available in Lead Free/RoHS Compliant Version (Note 3)

Mechanical Data

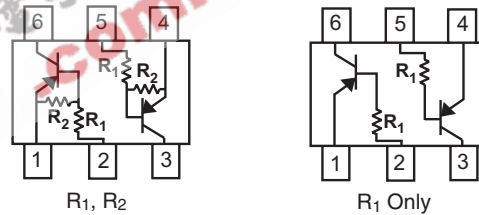
- Case: SOT-26
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish annealed over Copper leadframe). Please see Ordering Information, Note 5, on Page 2
- Marking: Date Code and Marking Code (See Diagrams & Page 2)
- Ordering Information (See Page 2)
- Weight: 0.015 grams (approximate)

P/N	R1	R2	MARKING
DDA124EK	22K Ω	22K Ω	P17
DDA144EK	47K Ω	47K Ω	P20
DDA114YK	10K Ω	47K Ω	P14
DDA123JK	2.2K Ω	47K Ω	P06
DDA114EK	10K Ω	10K Ω	P13
DDA143TK	4.7K Ω	-	P07
DDA114TK	10K Ω	-	P12



SOT-26			
Dim	Min	Max	Typ
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	0.95		
G	1.90		
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
α	0°	8°	—

All Dimensions in mm



SCHMATIC DIAGRAM

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Supply Voltage, (1) to (6) and (4) to (3)	V _{CC}	50	V
Input Voltage, (2) to (1) and (5) to (4)	V _{IN}	+10 to -40 +10 to -40 +6 to -40 +5 to -12 +10 to -40 +5 V _{max} +5 V _{max}	V
Output Current	I _O	-30 -30 -70 -100 -50 -100 -100	mA
Output Current	I _C (Max)	-100	mA
Power Dissipation (Total)	P _d	300	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	R _{θJA}	416.7	°C/W
Operating and Storage and Temperature Range	T _j , T _{STG}	-55 to +150	°C

- Note:
1. Mounted on FR4 PC Board with recommended pad layout at <http://www.diodes.com/datasheets/ap02001.pdf>.
 2. 200mW per element must not be exceeded.
 3. No purposefully added lead.

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic (DDA143TK & DDA114TK only)	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CBO}	-50	—	—	V	I _C = -50μA
Collector-Emitter Breakdown Voltage	BV _{CEO}	-50	—	—	V	I _C = -1mA
Emitter-Base Breakdown Voltage	BV _{EBO}	-5	—	—	V	I _E = -50μA
Collector Cutoff Current	I _{CBO}	—	—	-0.5	μA	V _{CB} = -50V
Emitter Cutoff Current	I _{EBO}	—	—	-0.5	μA	V _{EB} = -4V
Collector-Emitter Saturation Voltage	V _{CE(sat)}	—	—	-0.3	V	I _C /I _B = -2.5mA / -0.25mA I _C /I _B = -1mA / -0.1mA
DC Current Transfer Ratio	h _{FE}	100	250	600	—	I _C = -1mA, V _{CE} = -5V
Input Resistor (R ₁) Tolerance	ΔR ₁	-30	—	+30	%	—
Gain-Bandwidth Product*	f _T	—	250	—	MHz	V _{CE} = -10V, I _E = 5mA, f = 100MHz

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	V _{I(off)}	-0.5	-1.1	—	—	V _{CC} = -5V, I _O = -100μA
		-0.5	-1.1	—		
Input Voltage	V _{I(on)}	—	-1.9	-3.0	—	V _O = -0.3, I _O = -5mA V _O = -0.3, I _O = -2mA V _O = -0.3, I _O = -1mA V _O = -0.3, I _O = -5mA V _O = -0.3, I _O = -10mA
		—	-1.9	-3.0		
Output Voltage	V _{O(on)}	—	-0.1	-0.3	V	I _O /I _I = -10mA / -0.5mA I _O /I _I = -10mA / -0.5mA I _O /I _I = -5mA / -0.25mA I _O /I _I = -5mA / -0.25mA I _O /I _I = -10mA / -0.5mA
		—	-0.1	-0.3		
Input Current	I _I	—	—	-0.36 -0.18 -0.88 -3.6 -0.88	mA	V _I = -5V
Output Current	I _{O(off)}	—	—	-0.5	μA	V _{CC} = 50V, V _I = 0V
DC Current Gain	G _I	56 68 68 80 30	—	—	—	V _O = -5V, I _O = -5mA V _O = -5V, I _O = -5mA V _O = -5V, I _O = -10mA V _O = -5V, I _O = -10mA V _O = -5V, I _O = -5mA
Input Resistor (R ₁) Tolerance	ΔR ₁	-30	—	+30	%	—
Resistance Ratio Tolerance	R ₂ /R ₁	-20	—	+20	%	—
Gain-Bandwidth Product*	f _T	—	250	—	MHz	V _{CE} = -10V, I _E = -5mA, f = 100MHz

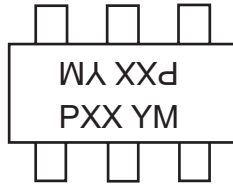
* Transistor - For Reference Only

Ordering Information (Note 4)

Device	Packaging	Shipping
DDA124EK-7	SOT-26	3000/Tape & Reel
DDA144EK-7	SOT-26	3000/Tape & Reel
DDA114YK-7	SOT-26	3000/Tape & Reel
DDA123JK-7	SOT-26	3000/Tape & Reel
DDA114EK-7	SOT-26	3000/Tape & Reel
DDA143TK-7	SOT-26	3000/Tape & Reel
DDA114TK-7	SOT-26	3000/Tape & Reel

- Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
5. For Lead Free/RoHS Compliant version part numbers, please add "-F" suffix to the part numbers above. Example: DDA114TK-7-F.

Marking Information



PXX = Product Type Marking Code
See Sheet 1 Diagrams
YM = Date Code Marking
Y = Year ex: T = 2006
M = Month ex: 9 = September

Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012
Code	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

EEPW 电子产品世界
.com.cn

TYPICAL CURVES - DDA123JK
ONE SECTION

NEW PRODUCT

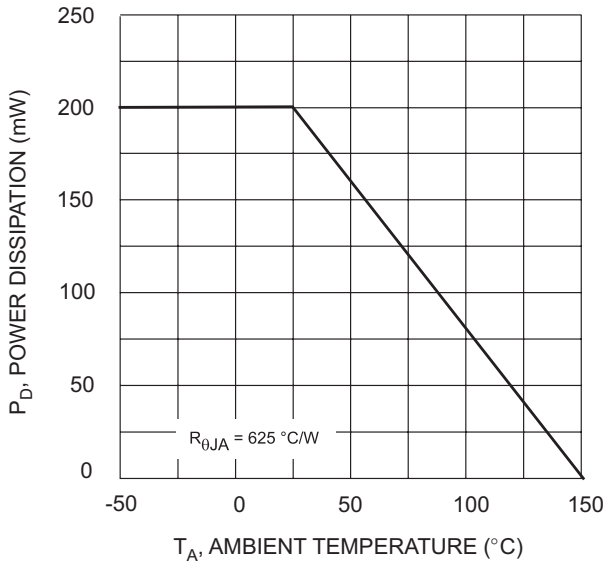


Fig. 1 Derating Curve

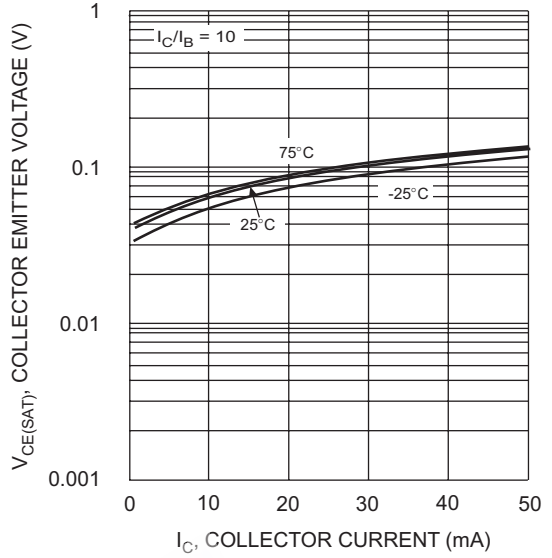


Fig. 2 $V_{CE(SAT)}$ vs. I_C

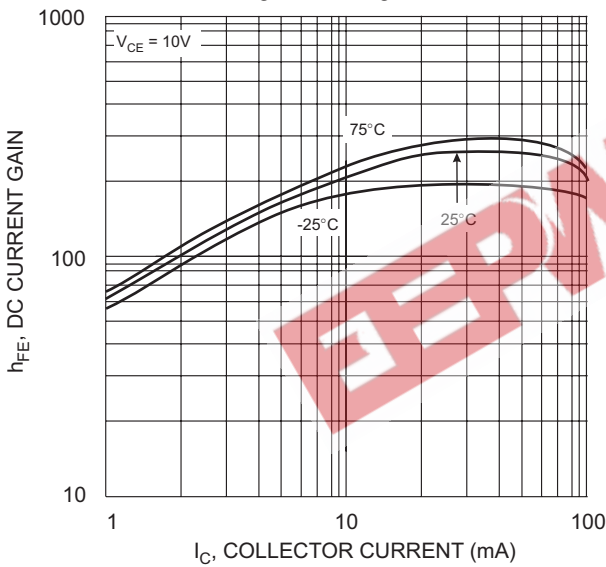


Fig. 3 DC Current Gain

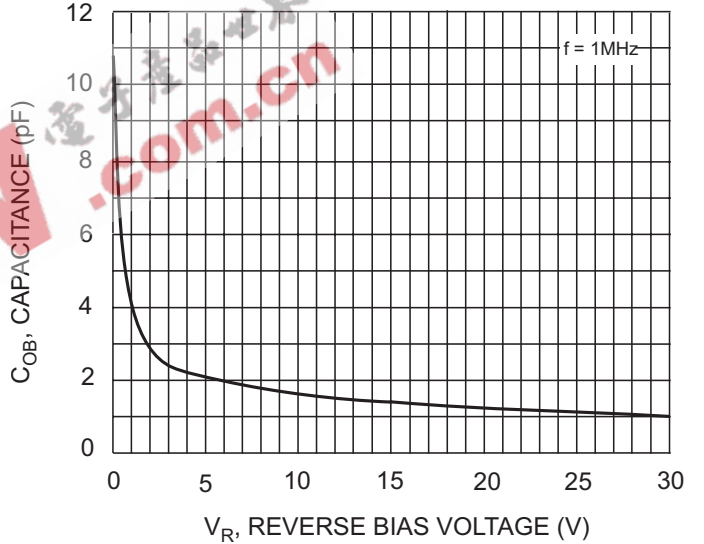


Fig. 4 Output Capacitance

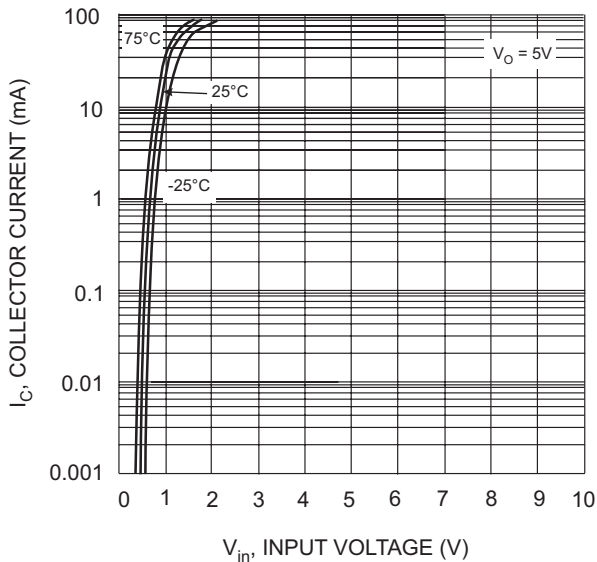


Fig. 5 Collector Current Vs. Input Voltage

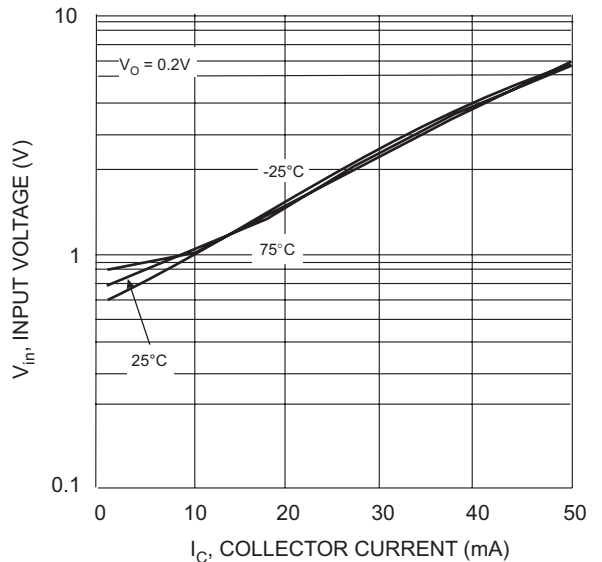


Fig. 6 Input Voltage vs. Collector Current

TYPICAL CURVES - DDA114TK
ONE SECTION

NEW PRODUCT

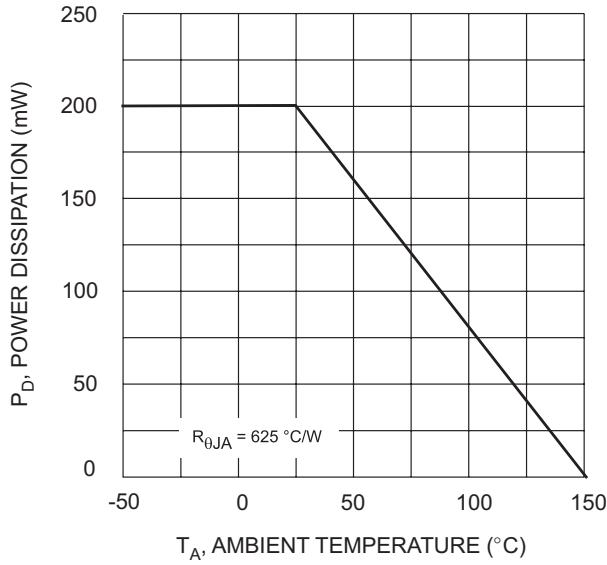


Fig. 1 Derating Curve

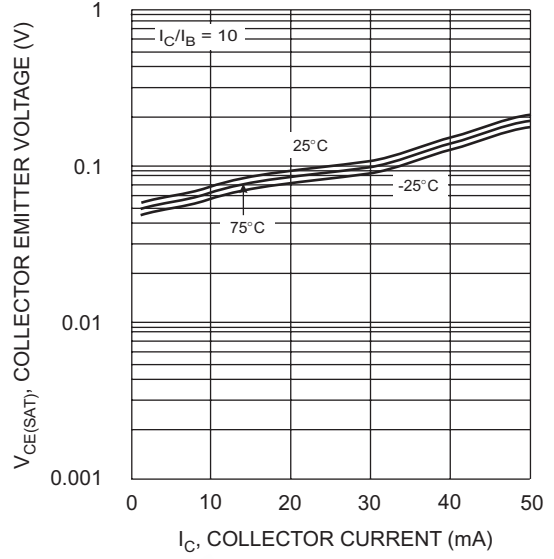


Fig. 2 $V_{CE(SAT)}$ vs. I_C

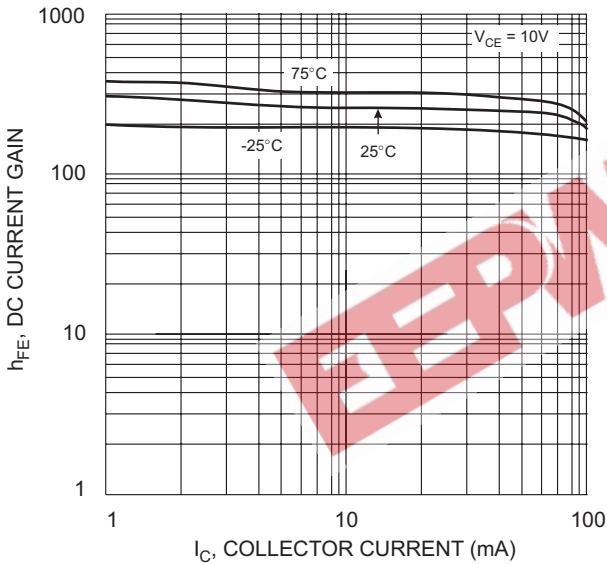


Fig. 3 DC Current Gain

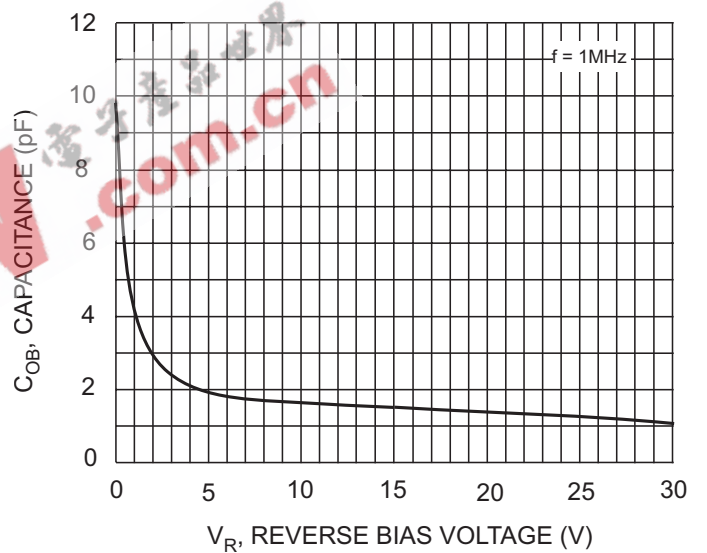


Fig. 4 Output Capacitance

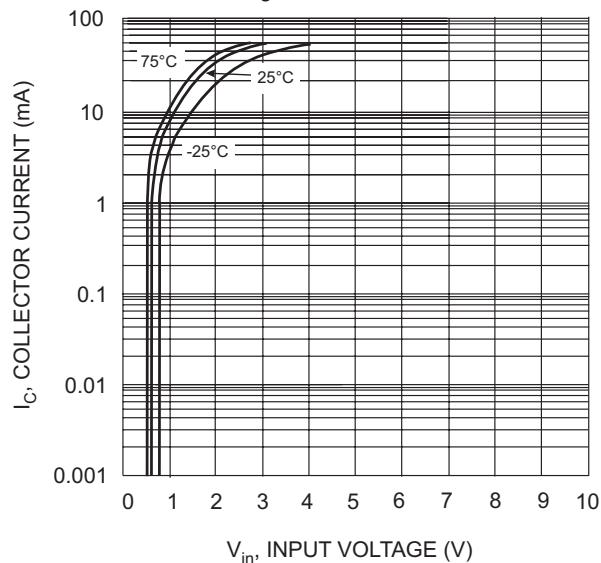


Fig. 5 Collector Current Vs. Input Voltage

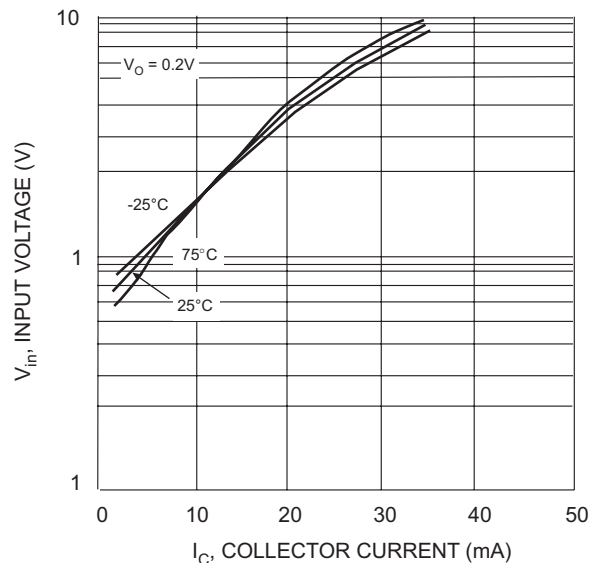


Fig. 6 Input Voltage vs. Collector Current

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.

EEPW 电子產品世界
.com.cn