

# DDTA (R1 = R2 SERIES) KA

PNP PRE-BIASED SMALL SIGNAL SC-59  
SURFACE MOUNT TRANSISTOR

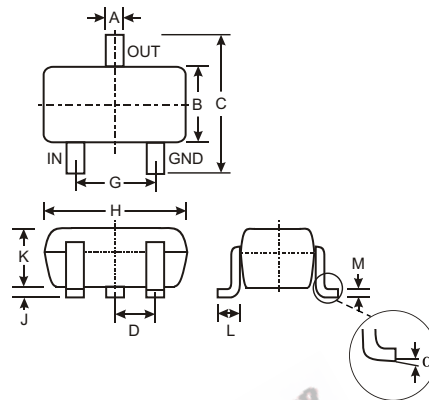
NEW PRODUCT

## Features

- Epitaxial Planar Die Construction
- Complementary NPN Types Available (DDTC)
- Built-In Biasing Resistors, R1 = R2

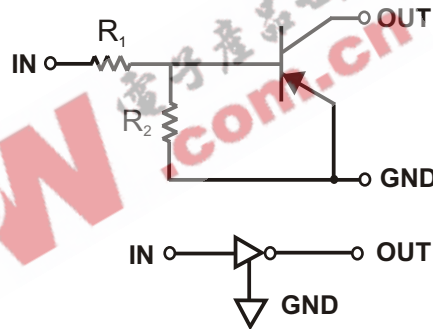
## Mechanical Data

- Case: SC-59, Molded Plastic
- Case material - UL Flammability Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking: Date Code and Marking Code (See Diagrams & Page 2)
- Weight: 0.008 grams (approx.)
- Ordering Information (See Page 2)



SC-59		
Dim	Min	Max
A	0.35	0.50
B	1.50	1.70
C	2.70	3.00
D	0.95	
G	1.90	
H	2.90	3.10
J	0.013	0.10
K	1.00	1.30
L	0.35	0.55
M	0.10	0.20
α	0°	8°
All Dimensions in mm		

P/N	R1, R2 (NOM)	MARKING
DDTA123EKA	2.2KΩ	P04
DDTA143EKA	4.7KΩ	P08
DDTA114EKA	10KΩ	P13
DDTA124EKA	22KΩ	P17
DDTA144EKA	47KΩ	P20
DDTA115EKA	100KΩ	P24



SCHEMATIC DIAGRAM

## Maximum Ratings @ T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit	
Supply Voltage, (3) to (1)	V <sub>CC</sub>	-50	V	
Input Voltage, (2) to (1)	V <sub>IN</sub>	DDTA123EKA DDTA143EKA DDTA114EKA DDTA124EKA DDTA144EKA DDTA115EKA	+10 to -12 +10 to -30 +10 to -40 +10 to -40 +10 to -40 +10 to -40	V
Output Current	I <sub>O</sub>	DDTA123EKA DDTA143EKA DDTA114EKA DDTA124EKA DDTA144EKA DDTA115EKA	-100 -100 -50 -30 -100 -20	mA
Output Current	I <sub>C</sub> (Max)	All	-100	mA
Power Dissipation	P <sub>d</sub>		200	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	R <sub>θJA</sub>		625	°C/W
Operating and Storage and Temperature Range	T <sub>j</sub> , T <sub>STG</sub>		-55 to +150	°C

Note: 1. Mounted on FR4 PC Board with recommended pad layout at <http://www.diodes.com/datasheets/ap02001.pdf>.

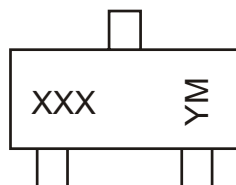
**Electrical Characteristics** @  $T_A = 25^\circ\text{C}$  unless otherwise specified

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage		$V_{I(\text{off})}$	-0.5	-1.1	—	V	$V_{CC} = -5\text{V}$ , $I_O = -100\mu\text{A}$
		$V_{I(\text{on})}$	—	-1.9	-3		$V_O = -0.3\text{V}$ , $I_O = -20\text{mA}$ , DDTA123EKA $V_O = -0.3\text{V}$ , $I_O = -20\text{mA}$ , DDTA143EKA $V_O = -0.3\text{V}$ , $I_O = -10\text{mA}$ , DDTA114EKA $V_O = -0.3\text{V}$ , $I_O = -5\text{mA}$ , DDTA124EKA $V_O = -0.3\text{V}$ , $I_O = -2\text{mA}$ , DDTA144EKA $V_O = -0.3\text{V}$ , $I_O = -1\text{mA}$ , DDTA115EKA
Output Voltage		$V_{O(\text{on})}$	—	-0.1	-0.3	V	$I_O/I_I = -10\text{mA}/-0.5\text{mA}$ , DDTA123EKA $I_O/I_I = -10\text{mA}/-0.5\text{mA}$ , DDTA143EKA $I_O/I_I = -10\text{mA}/-0.5\text{mA}$ , DDTA114EKA $I_O/I_I = -10\text{mA}/-0.5\text{mA}$ , DDTA124EKA $I_O/I_I = -10\text{mA}/-0.5\text{mA}$ , DDTA144EKA $I_O/I_I = -5\text{mA}/-0.25\text{mA}$ , DDTA115EKA
Input Current	DDTA123EKA DDTA143EKA DDTA114EKA DDTA124EKA DDTA144EKA DDTA115EKA	$I_I$	—	—	-3.8 -1.8 -0.88 -0.36 -0.18 -0.15	mA	$V_I = -5\text{V}$
Output Current		$I_{O(\text{off})}$	—	—	-0.5	$\mu\text{A}$	$V_{CC} = -50\text{V}$ , $V_I = 0\text{V}$
DC Current Gain	DDTA123EKA DDTA143EKA DDTA114EKA DDTA124EKA DDTA144EKA DDTA115EKA	$G_I$	20 20 30 56 68 82	—	—	—	$V_O = -5\text{V}$ , $I_O = -20\text{mA}$ $V_O = -5\text{V}$ , $I_O = -10\text{mA}$ $V_O = -5\text{V}$ , $I_O = -5\text{mA}$ $V_O = -5\text{V}$ , $I_O = -5\text{mA}$ $V_O = -5\text{V}$ , $I_O = -5\text{mA}$ $V_O = -5\text{V}$ , $I_O = -5\text{mA}$
Input Resistor ( $R_1$ ) Tolerance		$DR_1$	-30	—	+30	%	—
Resistance Ratio		$R_2/R_1$	0.8	1	1.2	—	—
Gain-Bandwidth Product*		$f_T$	—	250	—	MHz	$V_{CE} = -10\text{V}$ , $I_E = 5\text{mA}$ , $f = 100\text{MHz}$

\* Transistor - For Reference Only

**Ordering Information** (Note 2)

Device	Packaging	Shipping
DDTA123EKA-7	SC-59	3000/Tape & Reel
DDTA143EKA-7	SC-59	3000/Tape & Reel
DDTA114EKA-7	SC-59	3000/Tape & Reel
DDTA124EKA-7	SC-59	3000/Tape & Reel
DDTA144EKA-7	SC-59	3000/Tape & Reel
DDTA115EKA-7	SC-59	3000/Tape & Reel

Notes: 2. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.**Marking Information**

XXX = Product Type Marking Code  
See Sheet 1 Diagrams  
YM = Date Code Marking  
Y = Year ex: N = 2002  
M = Month ex: 9 = September

Date Code Key

Year	2002	2003	2004	2005	2006	2007	2008	2009
Code	N	P	R	S	T	U	V	W

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

TYPICAL CURVES - DDTA143EKA

