Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

NEW PRODUCT

DDTC (R1-ONLY SERIES) KA

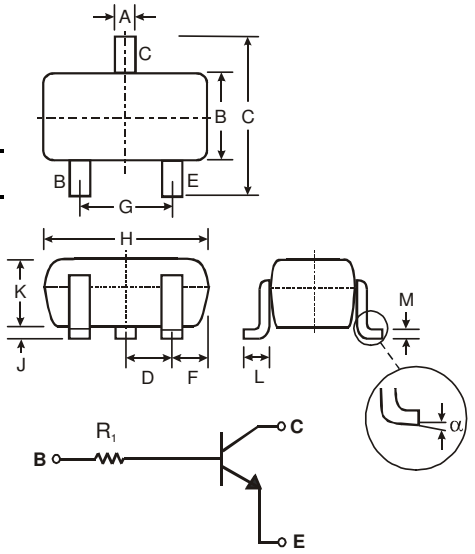
NPN PRE-BIASED SMALL SIGNAL SURFACE MOUNT TRANSISTOR

Features

- Epitaxial Planar Die Construction
- Complementary PNP Types Available (DDTA)
- Built-In Biasing Resistor, R1 only
- **Lead Free/RoHS Compliant (Note 2)**
- **"Green" Device, Note 3 and 4**

Mechanical Data

- Case: SC-59
- Case Material: Molded Plastic, "Green" Molding Compound, Note 4. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Copper leadframe).
- Terminal Connections: See Diagram
- Marking Information: See Diagrams & Page 3
- Ordering Information: See Page 3
- Weight: 0.008 grams (approximate)



SCHEMATIC DIAGRAM

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 (NOM)	Type Code
DDTC113TKA	1KΩ	N01
DDTC123TKA	2.2KΩ	N03
DDTC143TKA	4.7KΩ	N07
DDTC114TKA	10KΩ	N12
DDTC124TKA	22KΩ	N16
DDTC144TKA	47KΩ	N19
DDTC115TKA	100KΩ	N23
DDTC125TKA	200KΩ	N25

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C (Max)	100	mA
Power Dissipation	P_d	200	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150	°C

Notes:
1. Mounted on FR4 PC Board with recommended pad layout at http://www.diodes.com/datasheets/ap02001.pdf
2. No purposefully added lead.
3. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
4. Product manufactured with Date Code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

NEW PRODUCT

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	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 = 10mA/1mA DDTC113TKA I_C/I_B = 5mA/0.5mA DDTC123TKA I_C/I_B = 2.5mA/.25mA DDTC143TKA I_C/I_B = 1mA/.1mA DDTC114TKA I_C/I_B = 5mA/0.5mA DDTC124TKA I_C/I_B = 2.5mA/.25mA DDTC144TKA I_C/I_B = 1mA/0.1mA DDTC115TKA I_C/I_B = .5mA/.05mA DDTC125TKA
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

* Transistor - For Reference Only

Typical Curves – DDTC114TKA

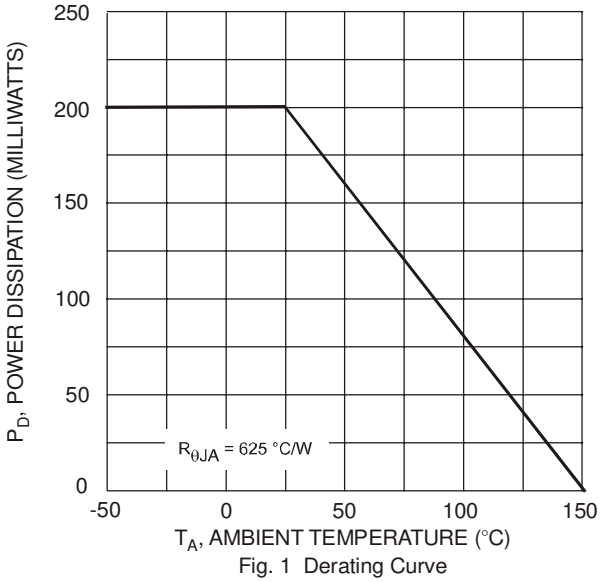


Fig. 1 Derating Curve

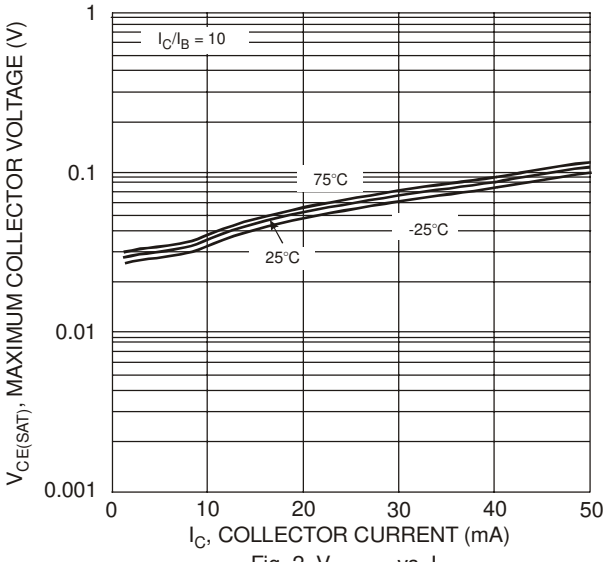


Fig. 2 $V_{CE(SAT)}$ vs. I_C

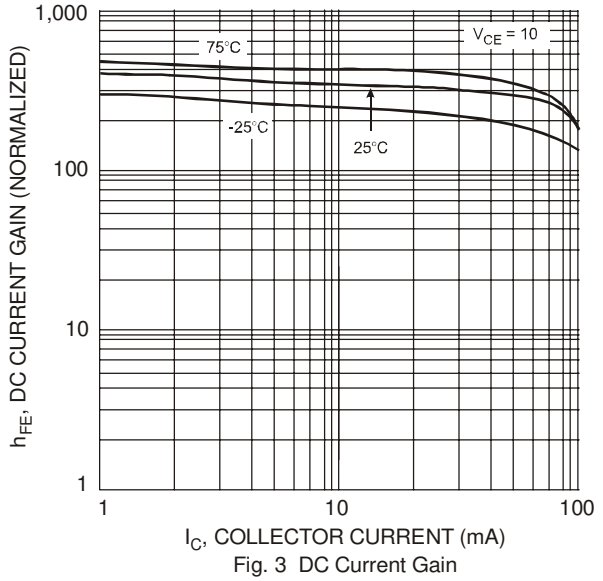


Fig. 3 DC Current Gain

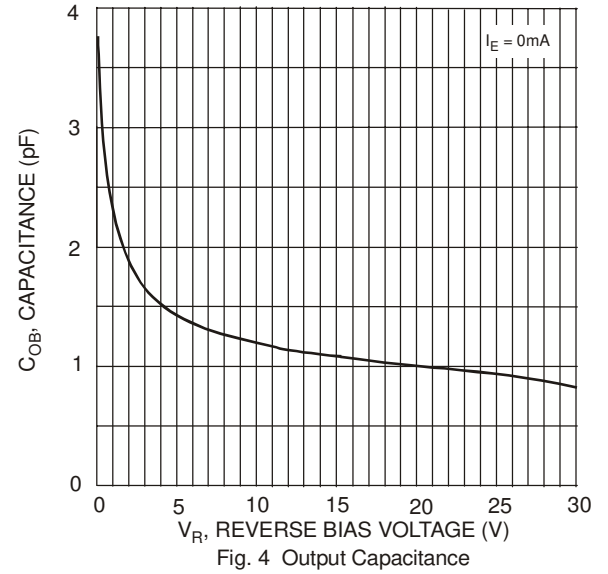


Fig. 4 Output Capacitance

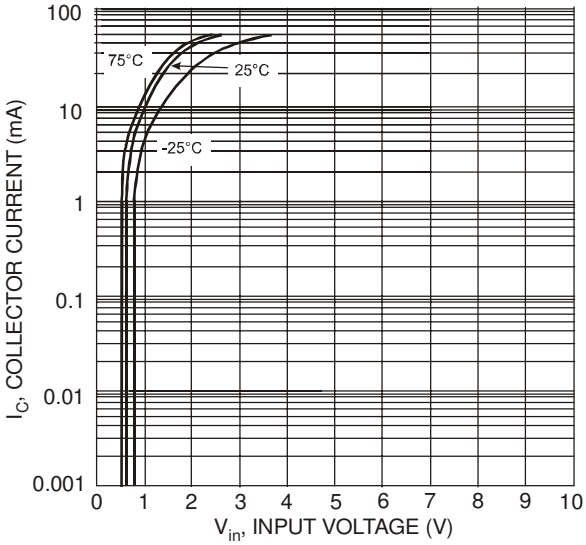


Fig. 5 Collector Current vs. Input Voltage

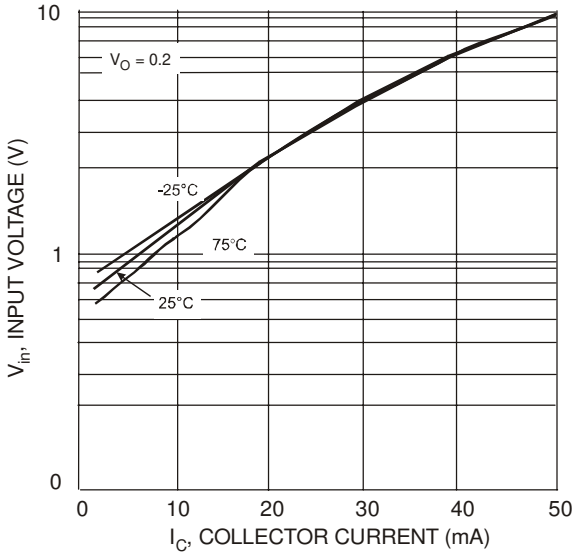


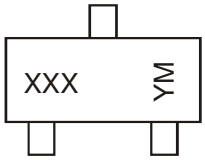
Fig. 6 Input Voltage vs. Collector Current

Ordering Information (Note 4 & 5)

Device	Packaging	Shipping
DDTC113TKA-7-F	SC-59	3000/Tape & Reel
DDTC123TKA-7-F	SC-59	3000/Tape & Reel
DDTC143TKA-7-F	SC-59	3000/Tape & Reel
DDTC114TKA-7-F	SC-59	3000/Tape & Reel
DDTC124TKA-7-F	SC-59	3000/Tape & Reel
DDTC144TKA-7-F	SC-59	3000/Tape & Reel
DDTC115TKA-7-F	SC-59	3000/Tape & Reel
DDTC125TKA-7-F	SC-59	3000/Tape & Reel

Notes: 5. 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	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	N	P	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