



2DA1797

50V PNP SURFACE MOUNT TRANSISTOR

Features

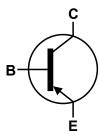
- Epitaxial Planar Die Construction
- Ideally Suited for Automated Assembly Processes
- Ideal for Medium Power Switching or Amplification Applications
- Complementary NPN Type Available (2DC4672)
- Totally Lead-Free & Fully RoHS compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 4)

Mechanical Data

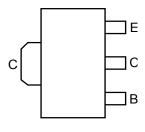
- Case: SOT89
- Case Material: Molded Plastic, "Green" Molding Compound.
 UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Matte Tin. Solderable per MIL-STD-202, Method 208 <a>@3
- Weight: 0.052 grams (approximate)







Device symbol



Top View Pin-Out

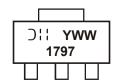
Ordering Information (Notes 4 & 5)

Part Number	Compliance	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
2DA1797-13	AEC-Q101	1797	13	12	2,500
2DA1797Q-13	Automotive	1797	13	12	2,500

Notes:

- 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
- 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- 4. Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q101 and standard products are electrically and thermally the same, except where specified. For more information, please refer to http://www.diodes.com/quality/product_compliance_definitions/.
- 5. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information



1797 = Product Type Marking Code YWW = Date Code Marking Y = Last digit of year (ex: 8 = 2008) WW = Week code (01 – 53)



Absolute 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}	-6	V
Peak Pulse Current	I _{CM}	-6	Α
Continuous Collector Current	Ic	-3	A

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P_{D}	0.9	W
Thermal Resistance, Junction to Ambient Air (Note 6)	$R_{ hetaJA}$	139	°C/W
Power Dissipation (Note 7)	P _D	2	W
Thermal Resistance, Junction to Ambient Air (Note 7)	$R_{ heta JA}$	62.5	°C/W
Thermal Resistance, Junction to Lead (Note 8)	$R_{ heta JL}$	5.3	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

ESD Ratings (Note 9)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	С

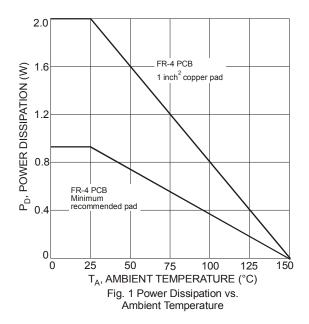
Notes:

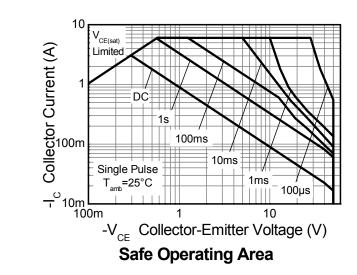
- Device mounted on FR-4 PCB with minimum recommended pad layout.
 Device mounted on FR-4 PCB with 1 inch² copper pad layout.
- 8. Thermal resistance from junction to solder-point (on the exposed collector pad).

 9. Refer to JEDEC specification JESD22-A114 and JESD22-A115.



Thermal Characteristics and Derating Information (@TA = +25°C, unless otherwise specified.)





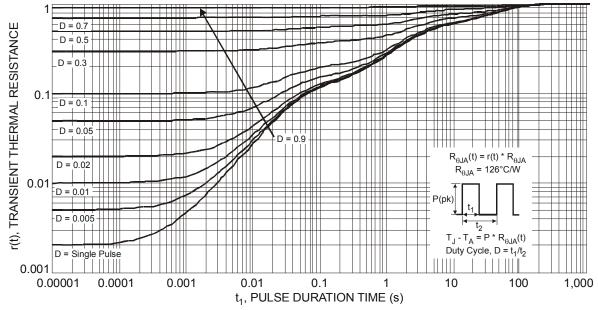


Fig. 10 Transient Thermal Response

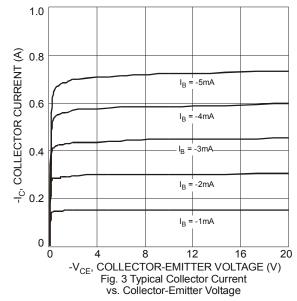


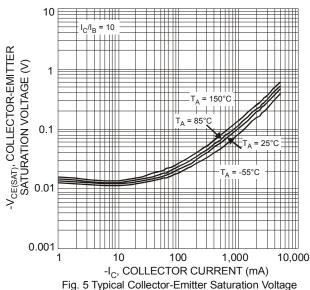
Electrical Characteristics ($@T_A = +25^{\circ}C$, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Conditions
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage	BV_{CBO}	-50	_	_	V	$I_C = -50\mu A, I_E = 0$
Collector-Emitter Breakdown Voltage (Note 10)	BV _{CEO}	-50	_	_	V	$I_C = -1 \text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	BV_{EBO}	-6	_	_	V	$I_E = -50 \mu A, I_C = 0$
Collector Cut-Off Current	I _{CBO}	_		-0.1	μA	$V_{CB} = -50V, I_{E} = 0$
Emitter Cut-Off Current	I _{EBO}	_	_	-0.1	μA	$V_{EB} = -5V, I_{C} = 0$
ON CHARACTERISTICS (Note 10)						
Collector-Emitter Saturation Voltage	V _{CE(sat)}	_	-100	-350	mV	$I_C = -1A$, $I_B = -50mA$
DC Current Gain	h_{FE}	82	_	270	_	$V_{CE} = -2V, I_{C} = -500mA$
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C _{obo}	_	27	_	pF	$V_{CB} = -10V, I_{E} = 0,$ f = 1MHz
Current Gain-Bandwidth Product	f _T	_	160	_	MHz	V _{CE} = -2V, I _C = -100mA, f = 100MHz

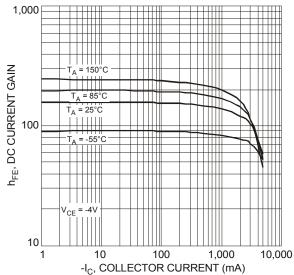
Notes: 10. Measured under pulsed conditions. Pulse width = 300μ s. Duty cycle $\leq 2\%$.

Typical Electrical Characteristics (@TA = +25°C, unless otherwise specified.)





vs. Collector Current



-I_C, COLLECTOR CURRENT (mA)
Fig. 4 Typical DC Current Gain vs. Collector Current

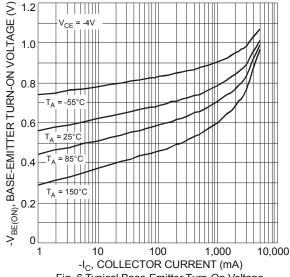
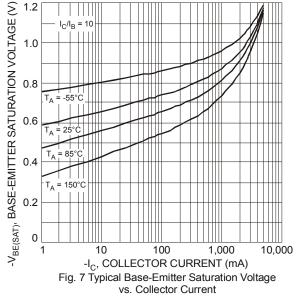
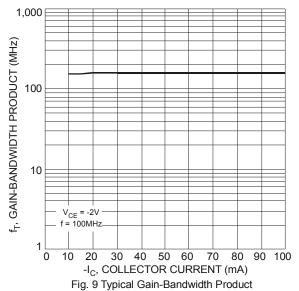


Fig. 6 Typical Base-Emitter Turn-On Voltage vs. Collector Current







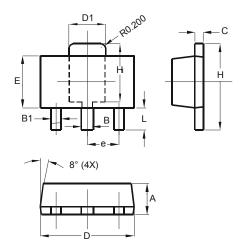
vs. Collector Current

1,000 f = 1MHz CAPACITANCE (pF) 100 10 1 10 V_R, REVERSE VOLTAGE (V)
Fig. 8 Typical Capacitance Characteristics 0.1 100



Package Outline Dimensions

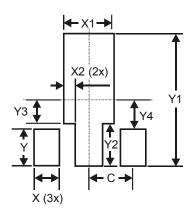
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



SOT89				
Dim	Min	Max		
Α	1.40	1.60		
В	0.44	0.62		
B1	0.35	0.54		
C	0.35	0.44		
D	4.40	4.60		
D1	1.62	1.83		
Е	2.29	2.60		
е	1.50 Typ			
H	3.94	4.25		
H1	2.63	2.93		
L	0.89	1.20		
All Dimensions in mm				

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
Х	0.900
X1	1.733
X2	0.416
Υ	1.300
Y1	4.600
Y2	1.475
Y3	0.950
Y4	1.125
С	1 500



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