

Features

- $BV_{CEO} > -50V$
- $I_C = -3A$ Continuous Collector Current
- $I_{CM} = -6A$ Peak Pulse Current 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)**
- **An automotive-compliant part is available under a separate datasheet ([2DA1797Q](#))**

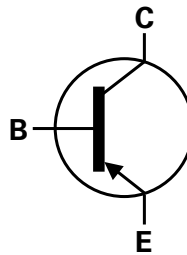
Mechanical Data

- Package: SOT89
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Leads. Solderable per MIL-STD-202 Method 208 
- Weight: 0.055 grams (Approximate)

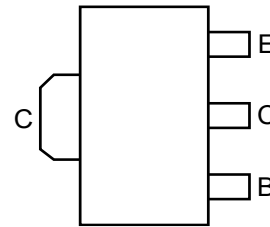
SOT89



Top View



Device Symbol



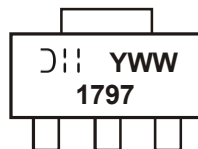
Top View
Pinout

Ordering Information (Note 4)

Orderable Part Number	Package	Marking	Reel Size (inches)	Tape Width (mm)	Packing	
					Qty.	Carrier
2DA1797-13	SOT89	1797	13	12	2,500	Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> 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. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



1797 = Product Type Marking Code
YWW = Date Code Marking
Y = Last Digit of Year (ex: 6 = 2026)
WW = Week Code (01 to 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 _{EB0}	-6	V
Peak Pulse Current	I _{CM}	-6	A
Continuous Collector Current	I _C	-3	A

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

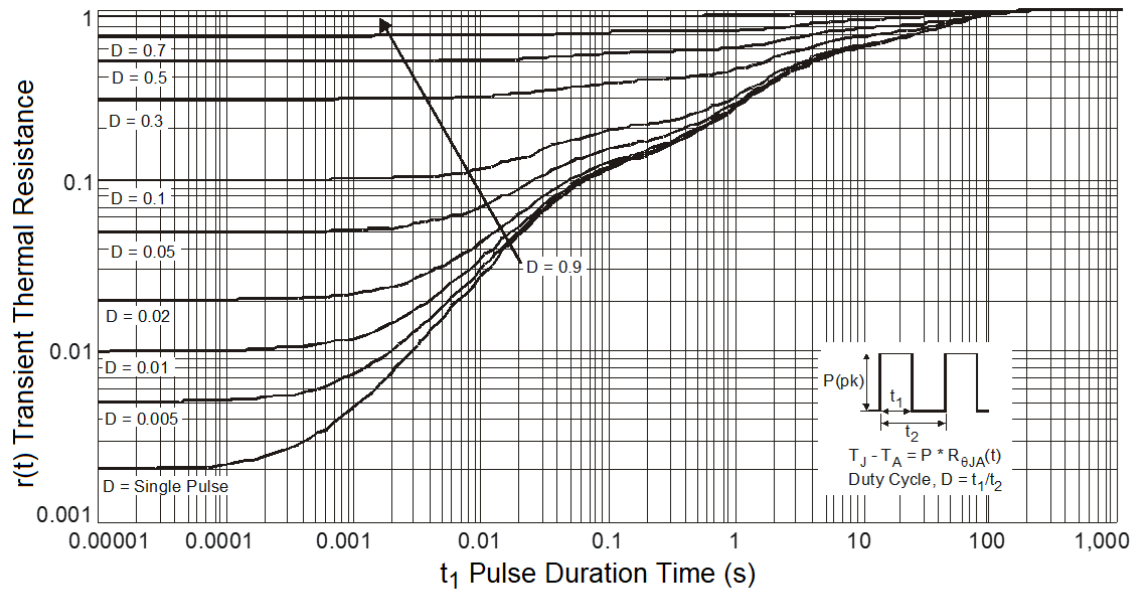
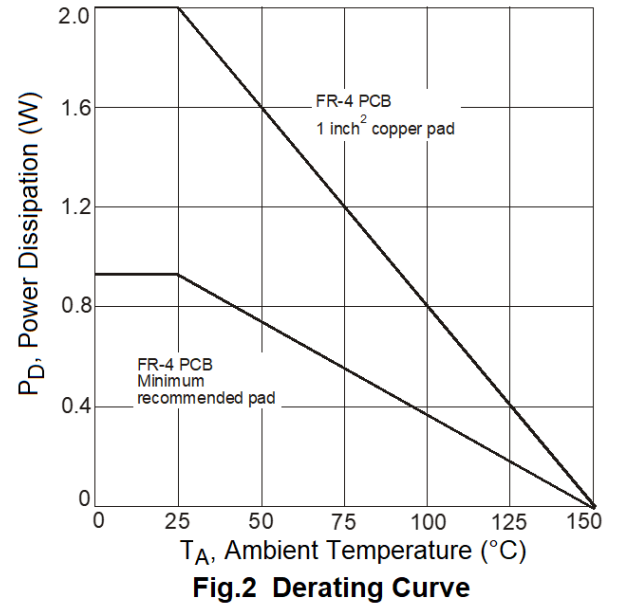
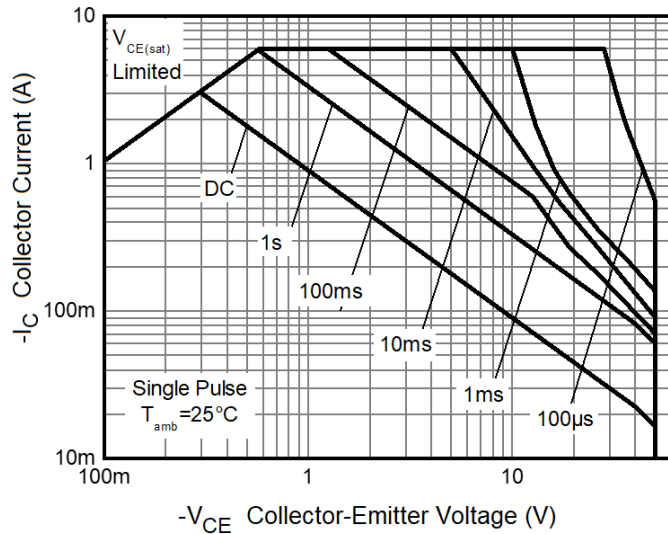
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	0.9	W
Thermal Resistance, Junction to Ambient Air (Note 5)	R _{θJA}	139	°C/W
Power Dissipation (Note 6)	P _D	2	W
Thermal Resistance, Junction to Ambient Air (Note 6)	R _{θJA}	62.5	°C/W
Thermal Resistance, Junction to Lead (Note 7)	R _{θJL}	5.3	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

ESD Ratings (Note 8)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4000	V	3A
Electrostatic Discharge - Charged Device Model	ESD CDM	1000	V	C3

- Notes:
5. Device mounted on FR-4 PCB with minimum recommended pad layout.
 6. Device mounted on FR-4 PCB with 1 inch² copper pad layout.
 7. Thermal resistance from junction to solder-point (on the exposed collector pad).
 8. Refer to JEDEC specifications JS-001 and JS-002.

Thermal Characteristics and Derating Information (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)



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

Characteristic	Symbol	Min	Typ	Max	Unit	Conditions
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage	BV _{CBO}	-50	—	—	V	I _C = -50μA, I _E = 0
Collector-Emitter Breakdown Voltage (Note 9)	BV _{CEO}	-50	—	—	V	I _C = -1mA, I _B = 0
Emitter-Base Breakdown Voltage	BV _{EBO}	-6	—	—	V	I _E = -50μA, I _C = 0
Collector Cutoff Current	I _{CBO}	—	—	-0.1	μA	V _{CB} = -50V, I _E = 0
Emitter Cutoff Current	I _{EBO}	—	—	-0.1	μA	V _{EB} = -5V, I _C = 0
ON CHARACTERISTICS (Note 9)						
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

Note: 9. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle ≤2%.

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

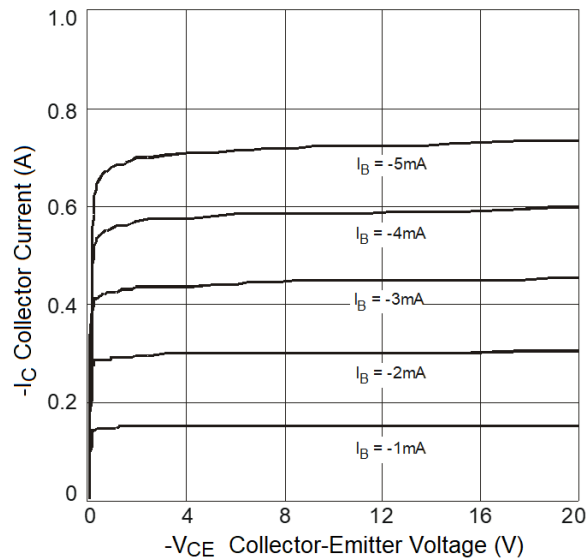


Fig.4 Typical Collector Current vs Collector-Emitter Voltage

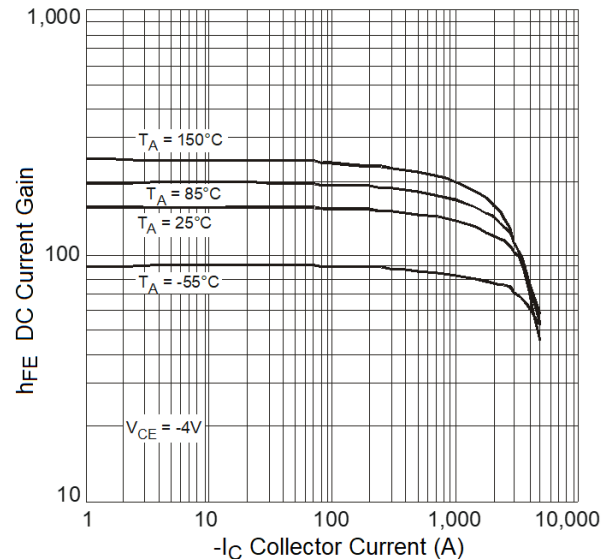


Fig.5 Typical DC Current Gain vs Collector Current

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

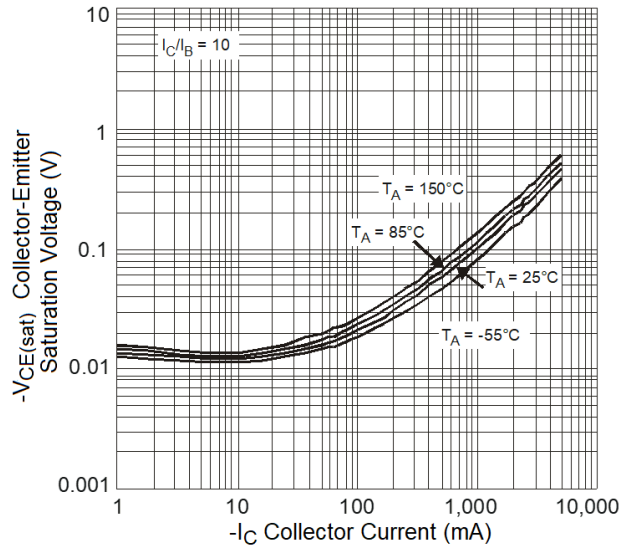


Fig.6 $V_{CE(sat)}$ vs I_C

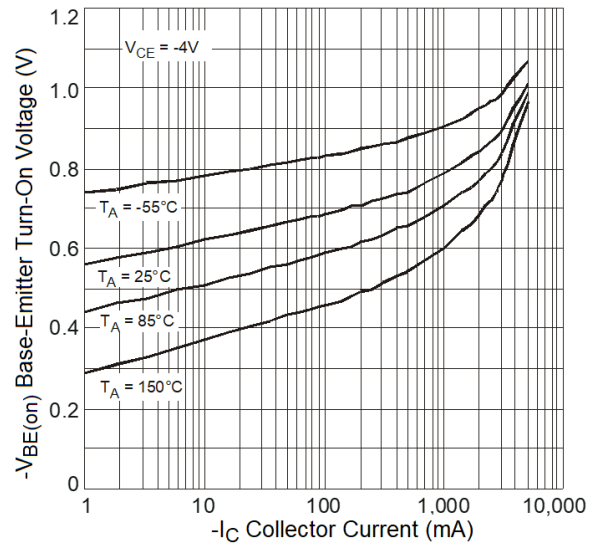


Fig.7 $V_{BE(on)}$ vs I_C

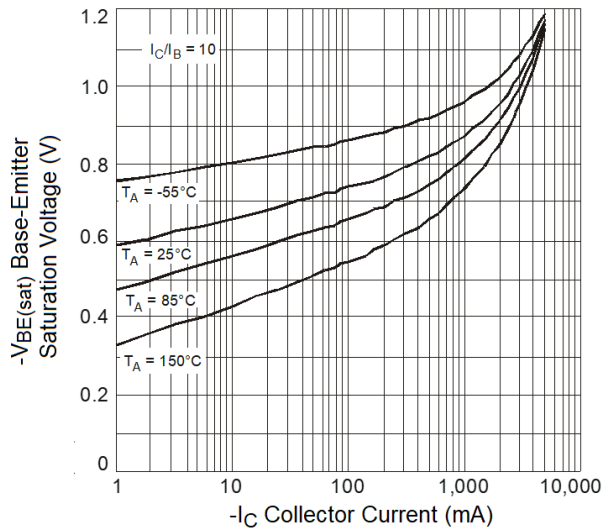


Fig.8 $V_{BE(sat)}$ vs I_C

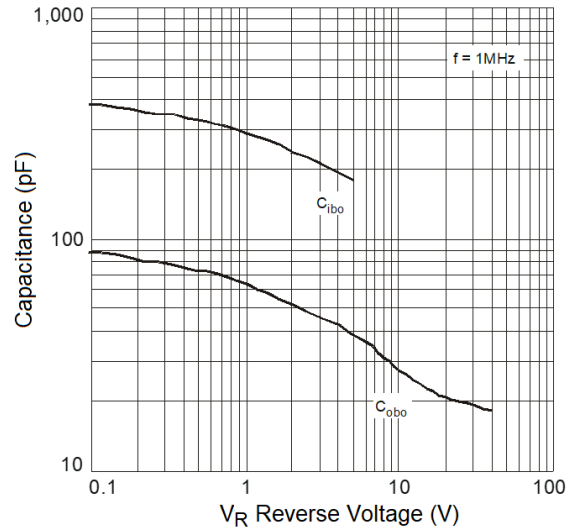


Fig.9 Typical Capacitance Characteristics

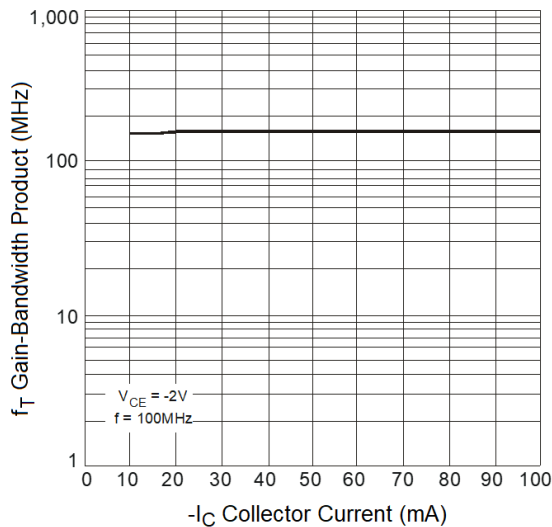
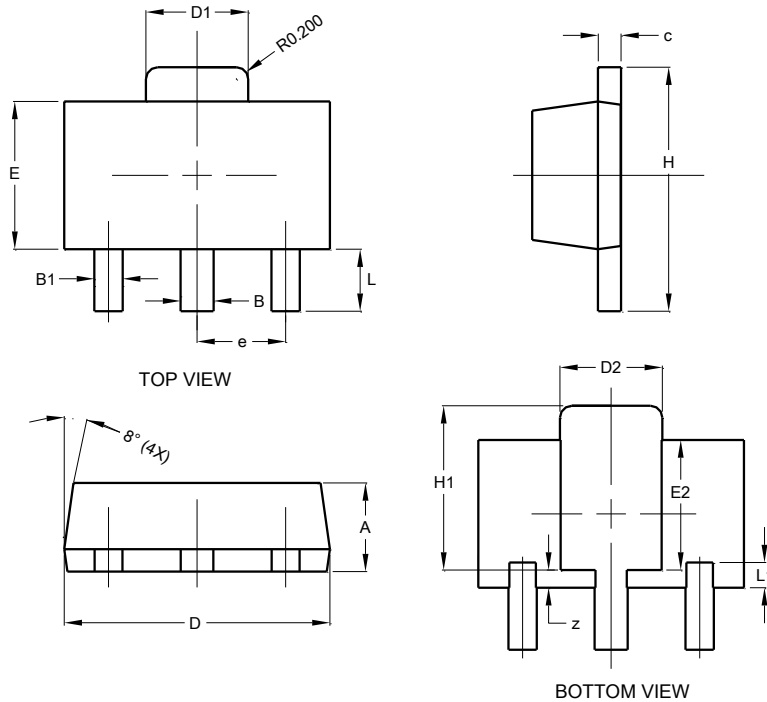


Fig.10 f_T vs I_C

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT89

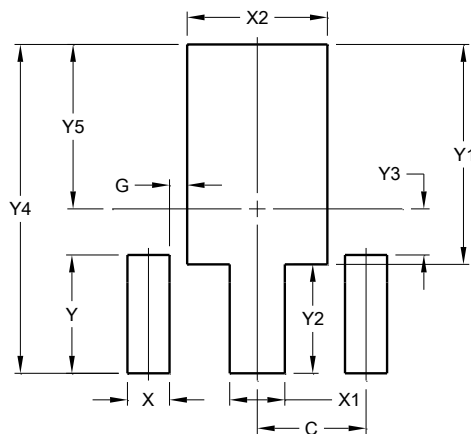


SOT89			
Dim	Min	Max	Typ
A	1.40	1.60	1.50
B	0.50	0.62	0.56
B1	0.42	0.54	0.48
c	0.35	0.43	0.38
D	4.40	4.60	4.50
D1	1.62	1.83	1.733
D2	1.61	1.81	1.71
E	2.40	2.60	2.50
E2	2.05	2.35	2.20
e	-	-	1.50
H	3.95	4.25	4.10
H1	2.63	2.93	2.78
L	0.90	1.20	1.05
L1	0.00	0.527	0.327
z	0.20	0.40	0.30
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT89



Dimensions	Value (in mm)
C	1.500
G	0.244
X	0.580
X1	0.760
X2	1.933
Y	1.630
Y1	3.030
Y2	1.500
Y3	0.635
Y4	4.530
Y5	2.265

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