

#### **Features**

- **Epitaxial Planar Die Construction**
- Ideally Suited for Automated Assembly Processes
- Ideal for Medium Power Switching or Amplification Applications
- Complementary PNP Type Available (2DB1697)
- Lead Free By Design/RoHS Compliant (Note 1)
- "Green" Device (Note 2)



2DD2661

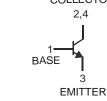
LOW V<sub>CE(SAT)</sub> NPN SURFACE MOUNT TRANSISTOR

### **Mechanical Data**

- Case: SOT89-3L
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Finish Matte Tin annealed over Copper leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.072 grams (approximate)



3



3 E CI4 2 C 1 B TOP VIEW

Pin Out Configuration

**Device Schematic** 

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

Top View

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	15	V
Collector-Emitter Voltage	V <sub>CEO</sub>	12	V
Emitter-Base Voltage	V <sub>EBO</sub>	6	V
Peak Pulse Current	ICM	4	A
Continuous Collector Current	lc	2	А

## **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 3) @ T <sub>A</sub> = 25°C	PD	0.9	W
Thermal Resistance, Junction to Ambient Air (Note 3) @ $T_A = 25^{\circ}C$	$R_{\theta JA}$	139	°C/W
Power Dissipation (Note 4) @ T <sub>A</sub> = 25°C	PD	2	W
Thermal Resistance, Junction to Ambient Air (Note 4) @ $T_A = 25^{\circ}C$	$R_{ heta JA}$	62.5	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	C°

## Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Conditions
OFF CHARACTERISTICS					<u>.</u>	
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	15	_	_	V	$I_{C} = 10 \mu A, I_{E} = 0$
Collector-Emitter Breakdown Voltage (Note 5)	V <sub>(BR)CEO</sub>	12	—	_	V	$I_{\rm C} = 1 {\rm mA}, I_{\rm B} = 0$
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	6	_		V	$I_{E} = 10 \mu A, I_{C} = 0$
Collector Cut-Off Current	I <sub>CBO</sub>	_	_	0.1	μA	$V_{CB} = 15V, I_E = 0$
Emitter Cut-Off Current	I <sub>EBO</sub>	_	_	0.1	μΑ	$V_{EB} = 6V, I_{C} = 0$
ON CHARACTERISTICS (Note 5)						
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	_	—	180	mV	$I_{\rm C} = 1$ A, $I_{\rm B} = 50$ mA
DC Current Gain	h <sub>FE</sub>	270	_	680	_	$V_{CE} = 2V, I_{C} = 200 \text{mA}$
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C <sub>obo</sub>	—	26	—	pF	$V_{CB} = 10V, I_E = 0,$ f = 1MHz
Current Gain-Bandwidth Product	f <sub>T</sub>		170	_	MHz	$V_{CE} = 2V$ , $I_C = 100$ mA, f = 100MHz

Notes: No purposefully added lead. 1.

2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead\_free/index.php.

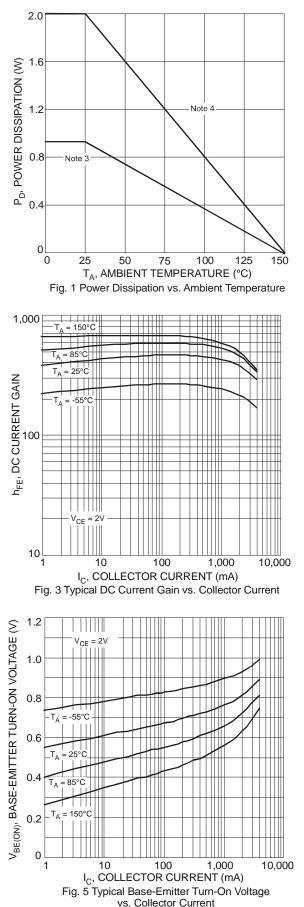
Device mounted on FR-4 PCB with minimum recommended pad layout. 3.

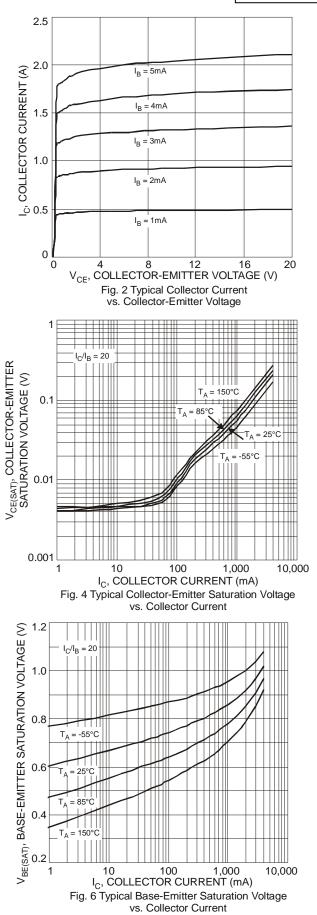
Device mounted on FR-4 PCB with 1 inch<sup>2</sup> copper pad layout. 4.

5. Measured under pulsed conditions. Pulse width =  $300\mu$ s. Duty cycle  $\leq 2\%$ .





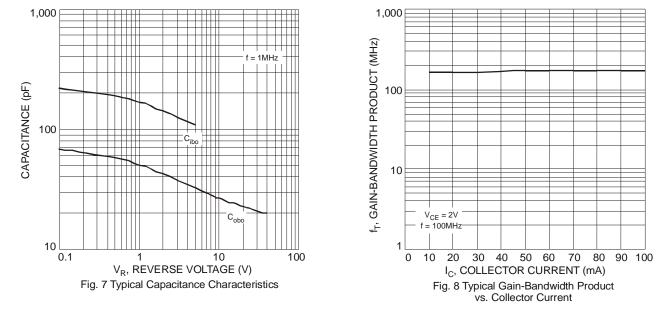




NEW PRODUCT



# 2DD2661

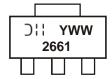


# Ordering Information (Note 6)

Part Number	Case	Packaging
2DD2661-13	SOT89-3L	2500/Tape & Reel

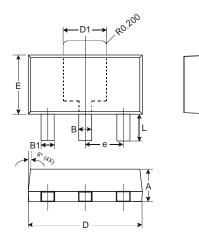
Notes: 6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

## **Marking Information**



2661 = Product Type Marking Code YWW = Date Code Marking Y = Last digit of year (ex: 8 = 2008) WW = Week code 01 - 52

# Package Outline Dimensions



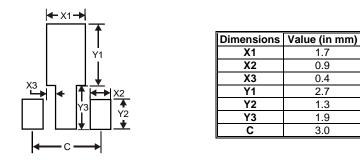
SOT89-3L					
Dim	Min	Max	Тур		
Α	1.40	1.60	1.50		
В	0.45	0.55	0.50		
B1	0.37	0.47	0.42		
С	0.35	0.43	0.38		
D	4.40	4.60	4.50		
D1	1.50	1.70	1.60		
Е	2.40	2.60	2.50		
е	_	_	1.50		
Н	3.95	4.25	4.10		
L	0.90	1.20	1.05		
All Dimensions in mm					

2DD2661 Document number: DS31635 Rev. 2 - 2



2DD2661

## Suggested Pad Layout



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