



NPN SURFACE MOUNT TRANSISTOR

Features

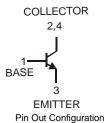
- **Epitaxial Planar Die Construction**
- Complementary PNP Type Available (DXTA92)
- Ideally Suited for Automated Assembly Processes
- Ideal for Medium Power Switching or Amplification Applications
- Lead Free By Design/RoHS Compliant (Note 1)
- "Green" Device (Note 2)

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-020C
- Terminals: Finish Matte Tin annealed over Copper leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Marking & Type Code Information: See Page 3
- Ordering Information: See Page 3
- Weight: 54.8mg (approximate)







Device Schematic

3 E

2 C

1 B

Maximum Ratings $@T_A = 25^{\circ}C$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	300	V
Collector-Emitter Voltage	V _{CEO}	300	V
Emitter-Base Voltage	V _{EBO}	6	V
Continuous Collector Current	I _C	500	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 3) @ T _A = 25°C	P_{D}	1	W
Thermal Resistance, Junction to Ambient (Note 3)	$R_{ heta JA}$	125	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

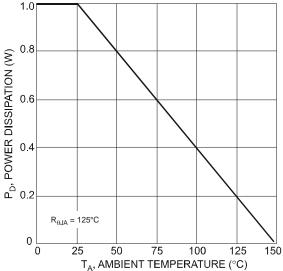
Electrical Characteristics @TA = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
OFF CHARACTERISTICS (Note 4)	7					
Collector-Base Breakdown Voltage	V _{(BR)CBO}	300	_	_	V	$I_C = 100 \mu A, I_E = 0$
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	300	_	_	V	$I_{C} = 1 \text{mA}, I_{B} = 0$
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	6	_	_	V	$I_E = 100 \mu A, I_C = 0$
Collector Cut-off Current	I _{CBO}	_	_	0.1	μΑ	$V_{CB} = 200V, I_{E} = 0$
Emitter Cut-off Current	I _{EBO}	_	_	0.1	μΑ	$V_{EB} = 6V, I_{C} = 0$
ON CHARACTERISTICS (Note 4)						
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	_	_	0.5	V	$I_C = 20$ mA, $I_B = 2$ mA
Base-Emitter Saturation Voltage	V _{BE(SAT)}	_	_	0.9	V	$I_C = 20\text{mA}$, $I_B = 2\text{mA}$
Static Forward Current Transfer Ratio	h _{FE}	25 40 40	_	_	_	$I_C = 1$ mA, $V_{CE} = 10$ V $I_C = 10$ mA, $V_{CE} = 10$ V $I_C = 30$ mA, $V_{CE} = 10$ V
SMALL SIGNAL CHARACTERISTICS						
Transition Frequency	f _T	50	_	_	MHz	$I_C = 10 \text{mA}, V_{CE} = 20 \text{V},$ f = 100MHz
Output Capacitance	C _{obo}	_	_	3	pF	V _{CB} = 20V, f = 1MHz

Notes:

- No purposefully added lead.
- 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; pad layout as shown on page 4 or in Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
- Measured under pulsed conditions. Pulse width = 300µs. Duty cycle ≤ 2%.





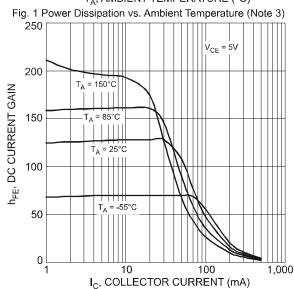
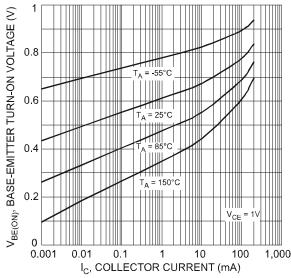
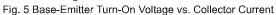
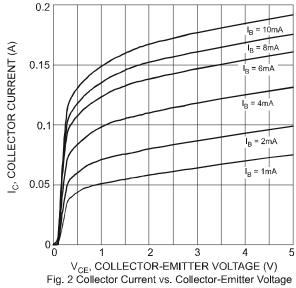
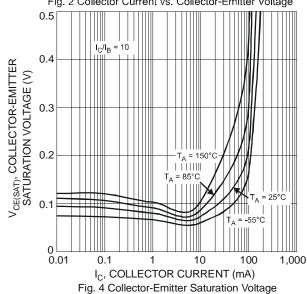


Fig. 3 Typical DC Current Gain vs. Collector Current

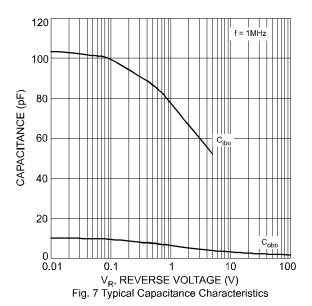












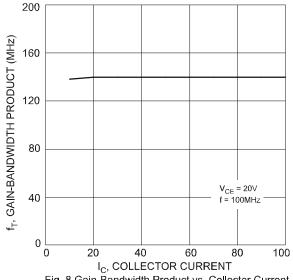


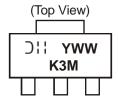
Fig. 8 Gain-Bandwidth Product vs. Collector Current

Ordering Information (Note 5)

Part Number	Case	Packaging
DXTA42-13	SOT89-3L	2500/Tape & Reel

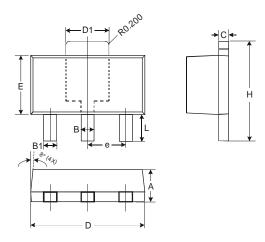
Notes: 5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



DII = Manufacturer's code marking K3M = Product Type Marking Code YWW = Date Code Marking Y = Last digit of year ex: 9 = 2009 WW = Week code 01 - 52

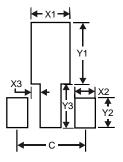
Package Outline Dimensions



	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 [All Dimensions in mm			



Suggested Pad Layout



Dimensions	Value (in mm)
X1	1.7
X2	0.9
Х3	0.4
Y1	2.7
Y2	1.3
Y3	1.9
С	3.0

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