NEW PRODUCT

Lead-free Green

DJT4030P

LOW $V_{CE(SAT)}$ PNP SURFACE MOUNT TRANSISTOR

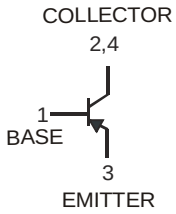
Features

- Ideally Suited for Automated Assembly Processes
- Complementary NPN Type Available (DJT4031N)
- Low Collector-Emitter Saturation Voltage
- Ideal for Medium Power Switching or Amplification Applications
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**

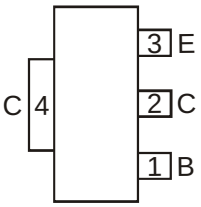
Mechanical Data

- Case: SOT-223
- 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 4
- Ordering Information: See Page 4
- Weight: 0.115 grams (approximate)

Top View



Device Schematic



Pin Out Configuration

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-40	V
Emitter-Base Voltage	V_{EBO}	-6	V
Peak Pulse Current	I_{CM}	-5	A
Continuous Collector Current	I_C	-3	A
Base Current	I_B	-1	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 3) @ T_A = 25°C	P_D	1.2	W
Thermal Resistance, Junction to Ambient Air (Note 3) @ T_A = 25°C	$R_{\theta JA}$	104	°C/W
Power Dissipation (Note 4) @ T_A = 25°C	P_D	2	W
Thermal Resistance, Junction to Ambient Air (Note 4) @ T_A = 25°C	$R_{\theta JA}$	62.5	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Notes:
1. No purposefully added lead.
2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
3. Device mounted on FR-4 PCB with minimum recommended pad layout.
4. Device mounted on FR-4 PCB with 1 inch^2 copper pad layout.

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Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
OFF CHARACTERISTICS (Note 5)						
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-40	—	—	V	I_C = -100μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-40	—	—	V	I_C = -10mA
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-6	—	—	V	I_E = -50μA
Collector-Base Cutoff Current	I_{CBO}	—	—	-100	nA	V_{CB} = -40V, I_E = 0
		—	—	-50	μA	V_{CB} = -40V, I_E = 0, T_A = 150°C
Emitter-Base Cutoff Current	I_{EBO}	—	—	-100	nA	V_{EB} = -6V, I_C = 0
ON CHARACTERISTICS (Note 5)						
DC Current Gain	h_{FE}	220	—	—	—	V_{CE} = -1V, I_C = -0.5A
		200	—	400		V_{CE} = -1V, I_C = -1A
		100	—	—		V_{CE} = -1V, I_C = -3A
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	—	-150	mV	I_C = -0.5A, I_B = -5mA
		—	—	-200		I_C = -1A, I_B = -10mA
		—	—	-500		I_C = -3A, I_B = -0.3A
Equivalent On-Resistance	$R_{CE(SAT)}$	—	—	167	mΩ	I_E = -3A, I_B = -0.3A
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	—	—	-1.0	V	I_C = -1A, I_B = -0.1A
Base-Emitter Turn-on Voltage	$V_{BE(ON)}$	—	—	-1.0	V	V_{CE} = -2V, I_C = -1A
SMALL SIGNAL CHARACTERISTICS						
Transition Frequency	f_T	—	150	—	MHz	V_{CE} = -10V, I_C = -100mA, f = 100MHz
Output Capacitance	C_{obo}	—	35	—	pF	V_{CB} = -10V, f = 1MHz
Input Capacitance	C_{ibo}	—	150	—	pF	V_{CB} = -5V, f = 1MHz
SWITCHING CHARACTERISTICS						
Turn-On Time	t_{on}	—	53	—	ns	V_{CC} = -10V, I_C = -2A, I_{B1} = -200mA
Delay Time	t_d	—	12	—	ns	
Rise Time	t_r	—	41	—	ns	
Turn-Off Time	t_{off}	—	180	—	ns	V_{CC} = -10V, I_C = -2A, I_{B1} = I_{B2} = -200mA
Storage Time	t_s	—	146	—	ns	
Fall Time	t_f	—	34	—	ns	

Notes: 5. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle ≤2%.

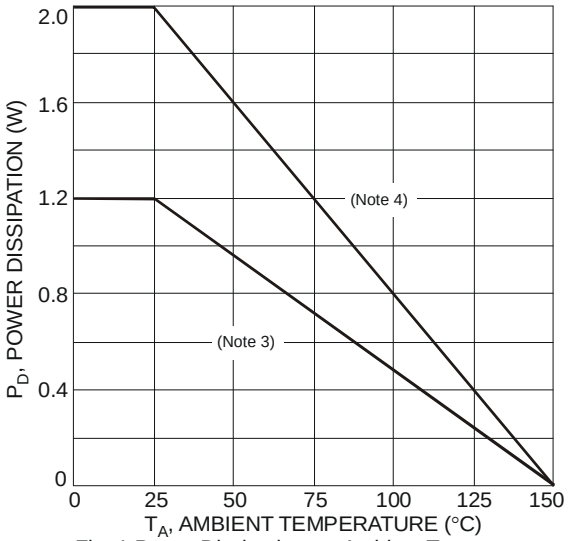

Fig. 1 Power Dissipation vs. Ambient Temperature

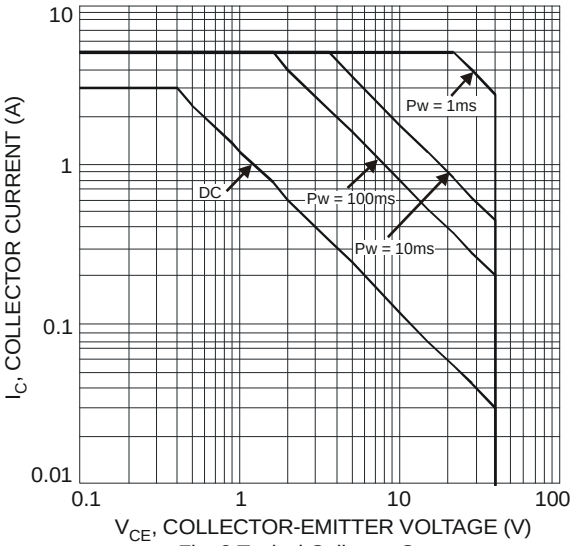

Fig. 2 Typical Collector Current vs. Collector-Emitter Voltage (Note 3)

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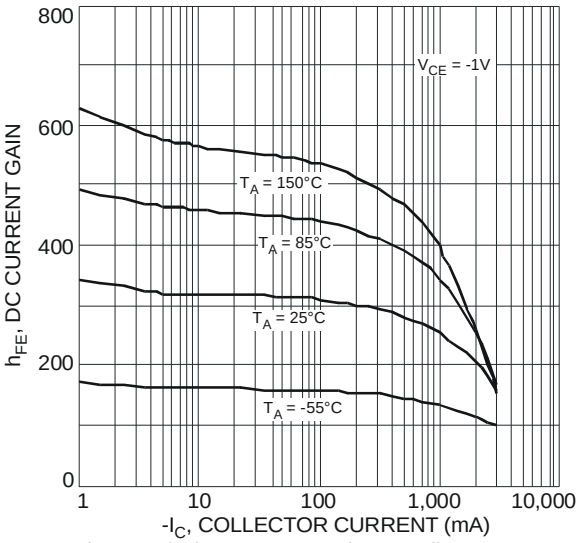

Fig. 3 Typical DC Current Gain vs. Collector Current

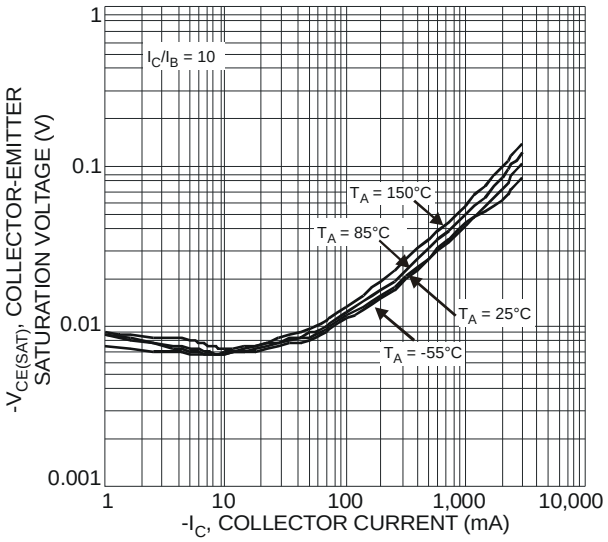

Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

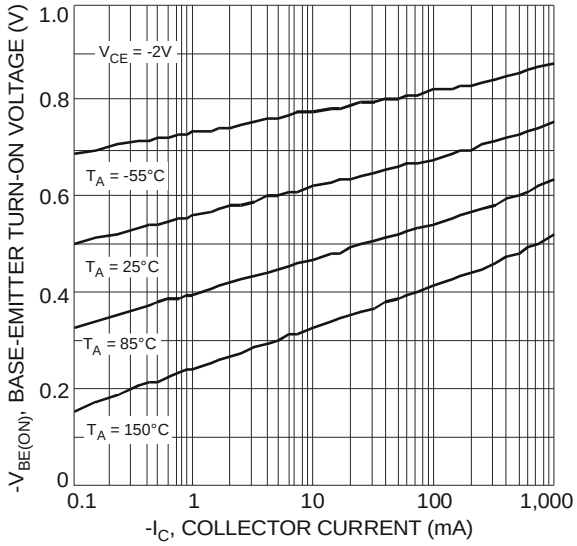

Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current

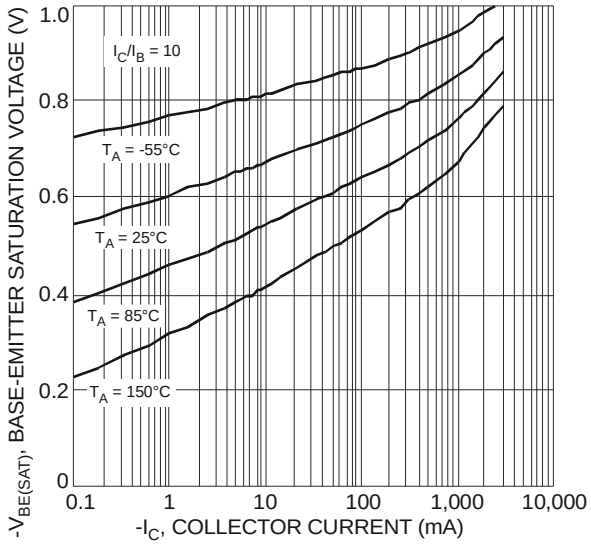

Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

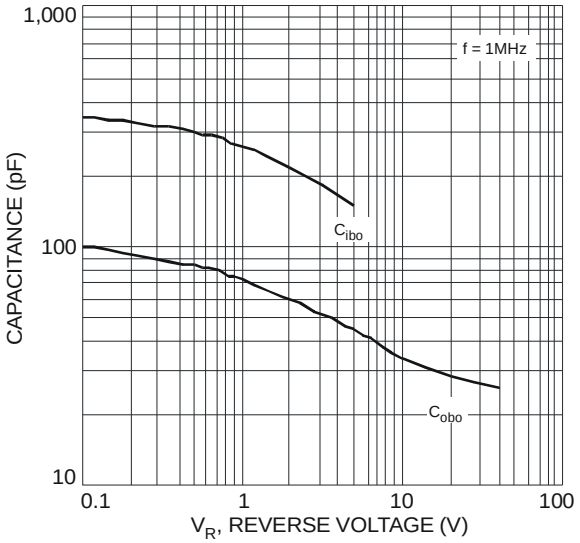

Fig. 7 Typical Capacitance Characteristics

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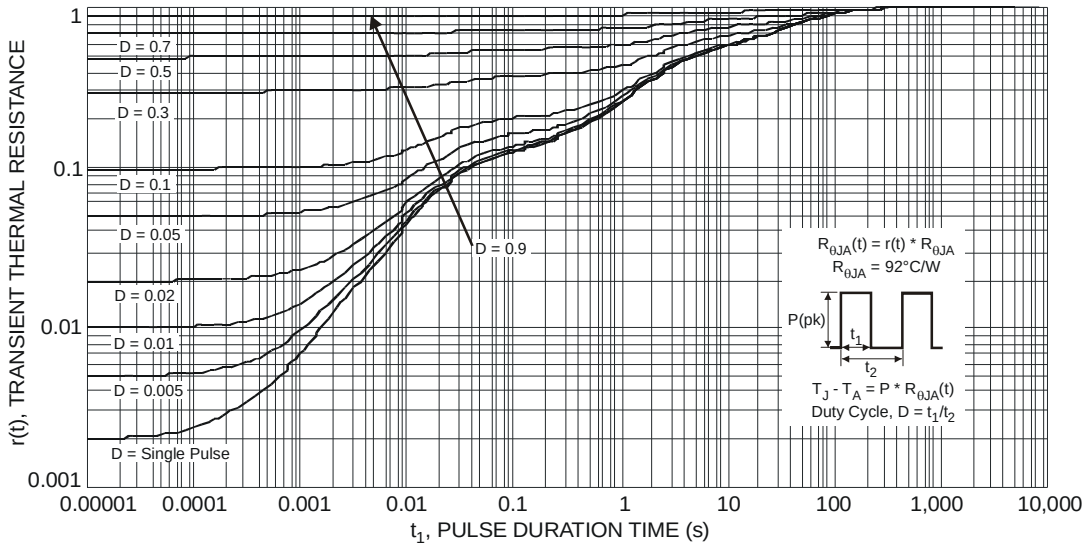


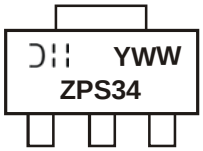
Fig. 8 Transient Thermal Response (Note 3)

Ordering Information (Note 6)

Part Number	Case	Packaging
DJT4030P-13	SOT-223	2500/Tape & Reel

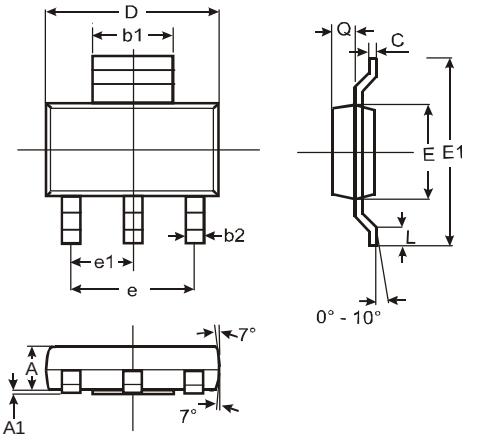
Notes: 6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



ZPS34 = Product Type Marking Code
YWW = Date Code Marking
Y = Last digit of year (ex: 8 = 2008)
WW = Week code 01 - 52

Package Outline Dimensions



SOT-223			
Dim	**Min**	**Max**	**Typ**
A	1.55	1.65	1.60
A1	0.010	0.15	0.05
b1	2.90	3.10	3.00
b2	0.60	0.80	0.70
C	0.20	0.30	0.25
D	6.45	6.55	6.50
E	3.45	3.55	3.50
E1	6.90	7.10	7.00
e	—	—	4.60
e1	—	—	2.30
L	0.85	1.05	0.95
Q	0.84	0.94	0.89
All Dimensions in mm			

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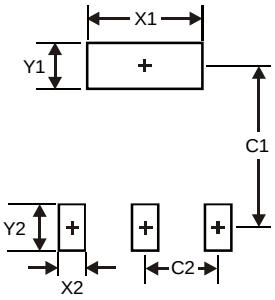
Suggested Pad Layout



Dimensions	Value (in mm)
X1	3.3
X2	1.2
Y1	1.6
Y2	1.6
C1	6.4
C2	2.3