

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
OFF CHARACTERISTICS (Note 4)						
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 4)						
DC Current Gain	h _{FE}	220	—	—	—	V _{CE} = 1V, I _C = 0.5A
		200	—	500		V _{CE} = 1V, I _C = 1A
		100	—	—		V _{CE} = 1V, I _C = 3A
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	—	—	100	mV	I _C = 0.5A, I _B = 5mA
		—	—	150		I _C = 1A, I _B = 10mA
		—	—	300		I _C = 3A, I _B = 0.3A
Equivalent On-Resistance	R _{CE(SAT)}	—	—	100	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	—	105	—	MHz	V _{CE} = 10V, I _C = 100mA, f = 100MHz
Output Capacitance	C _{obo}	—	27	—	pF	V _{CB} = 10V, f = 1MHz
Input Capacitance	C _{ibo}	—	180	—	pF	V _{CB} = 5V, f = 1MHz
SWITCHING CHARACTERISTICS						
Turn-On Time	t _{on}	—	45	—	ns	V _{CC} = 10V, I _C = 2A, I _{B1} = 200mA
Delay Time	t _d	—	14	—	ns	
Rise Time	t _r	—	31	—	ns	
Turn-Off Time	t _{off}	—	276	—	ns	V _{CC} = 10V, I _C = 2A, I _{B1} = I _{B2} = 200mA
Storage Time	t _s	—	244	—	ns	
Fall Time	t _f	—	32	—	ns	

Notes: 4. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle ≤2%.

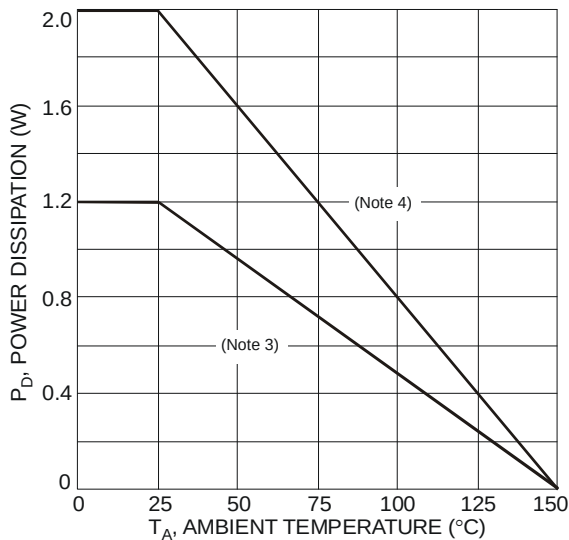


Fig. 1 Power Dissipation vs. Ambient Temperature

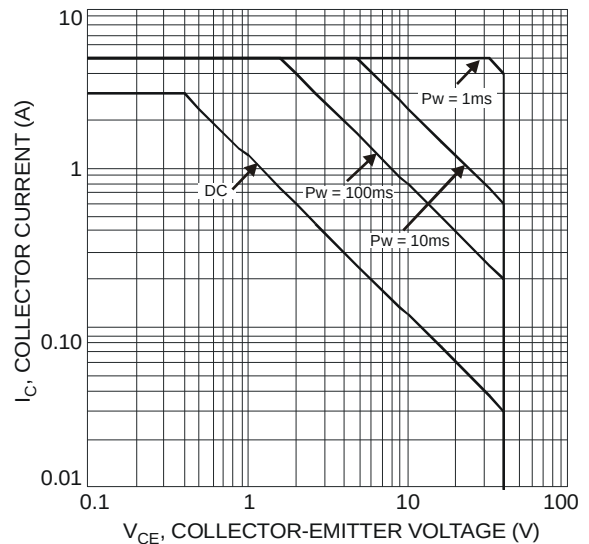


Fig. 2 Typical Collector Current vs. Collector-Emitter Voltage (Note 3)

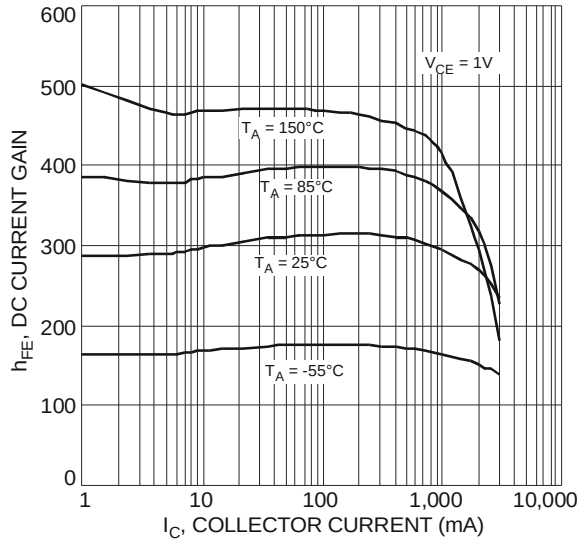


Fig. 3 Typical DC Current Gain vs. Collector Current

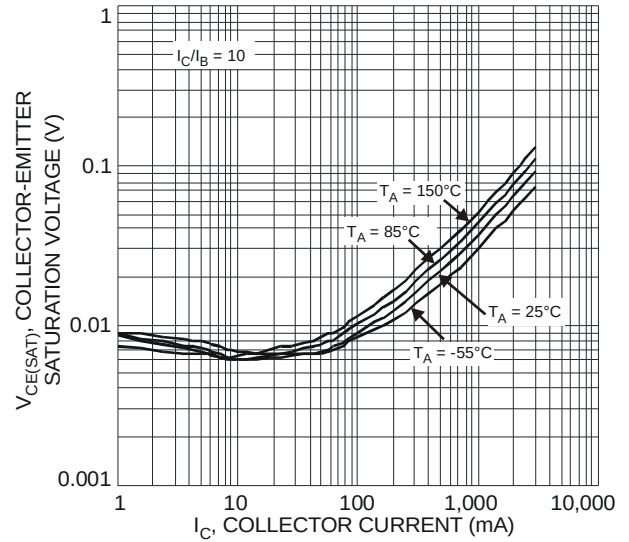


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

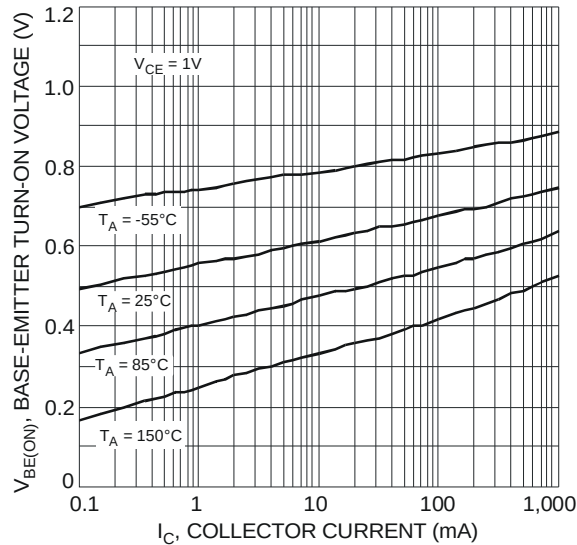


Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current

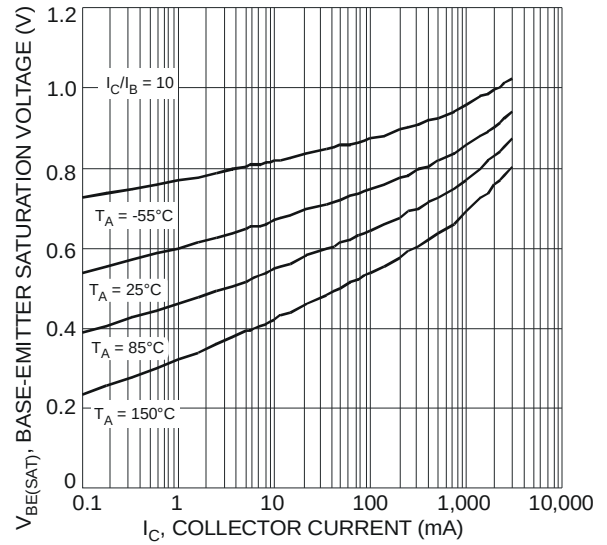


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

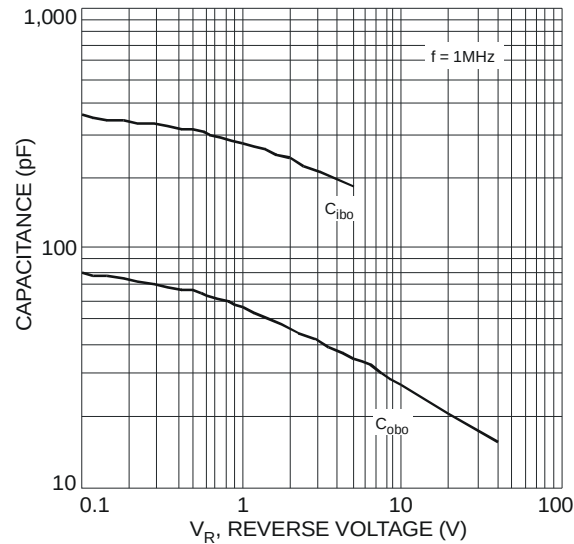


Fig. 7 Typical Capacitance Characteristics

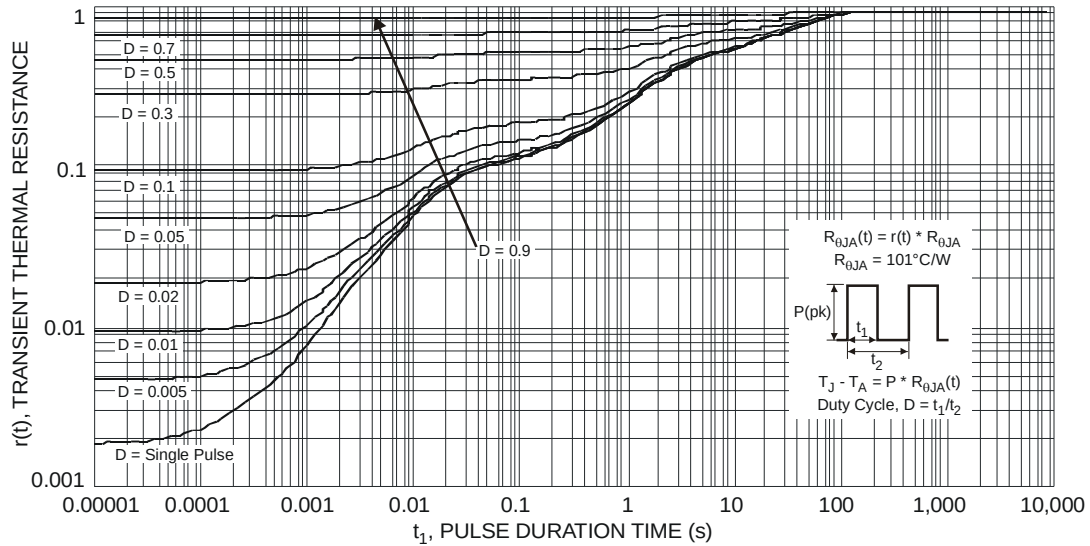


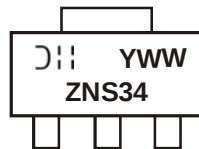
Fig. 8 Transient Thermal Response (Note 3)

Ordering Information (Note 5)

Part Number	Case	Packaging
DJT4031N-13	SOT-223	2500/Tape & Reel

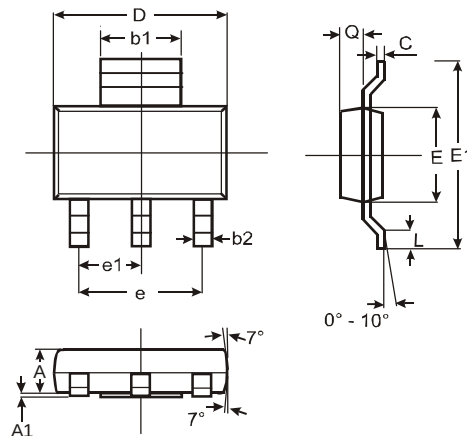
Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



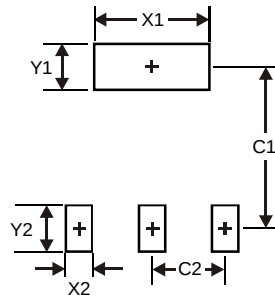
ZNS34 = Product Type Marking Code
YWW = Date Code Marking
Y = Last digit of year (ex: 8 = 2008)
WW = Week code 01 - 52

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			

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

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.