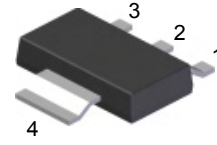


Features

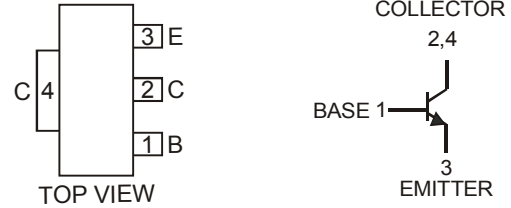
- Epitaxial Planar Die Construction
- Ideally Suited for Automated Assembly Processes
- Ideal for Medium Power Switching or Amplification Applications
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**



SOT-223

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-020C
- 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: 0.115 grams (approximate)



Schematic and Pin Configuration

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	50	V
Collector-Emitter Voltage	V _{CEO}	25	V
Emitter-Base Voltage	V _{EBO}	7.0	V
Collector Current	I _C	5.0	A
Base Current	I _B	1.0	A
Power Dissipation	P _D	1 (Note 3) 2 (Note 4)	W
Thermal Resistance, Junction-to-Ambient	R _{θJA}	125 (Note 3) 62.5 (Note 4)	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	25	—	—	V	I _C = 10mA, I _B = 0
Collector Cutoff Current	I _{CB0}	—	—	1.0	μA	V _{CB} = 50V, I _E = 0
Emitter Cutoff Current	I _{EBO}	—	—	1.0	μA	V _{EB} = 7.0V, I _C = 0
ON CHARACTERISTICS (Note 5)						
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	—	—	0.35 0.50	V V	I _C = 3.0A, I _B = 150mA I _C = 4.0A, I _B = 200mA
Base-Emitter Saturation Voltage	V _{BE(SAT)}	—	—	1.10 1.40	V V	I _C = 3.0A, I _B = 150mA I _C = 4.0A, I _B = 200mA
DC Current Gain	h _{FE}	250 150 50	—	500 — —	—	I _C = 500mA, V _{CE} = 2.0V I _C = 2.0A, V _{CE} = 2.0V I _C = 5.0A, V _{CE} = 2.0V
SMALL SIGNAL CHARACTERISTICS						
Current Gain-Bandwidth Product	f _T	—	150	—	MHz	I _C = 50mA, V _{CE} = 6.0V, f = 200MHz
Output Capacitance	C _{ob0}	—	—	50	pF	V _{CB} = 10V, I _E = 0, f = 1MHz

- Note:
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, pad layout as shown on page 3.
 4. Device mounted on Polyimide PCB with a copper area of 1.8cm².
 5. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle ≤2%

Typical Characteristics @ $T_{amb} = 25^{\circ}\text{C}$ unless otherwise specified

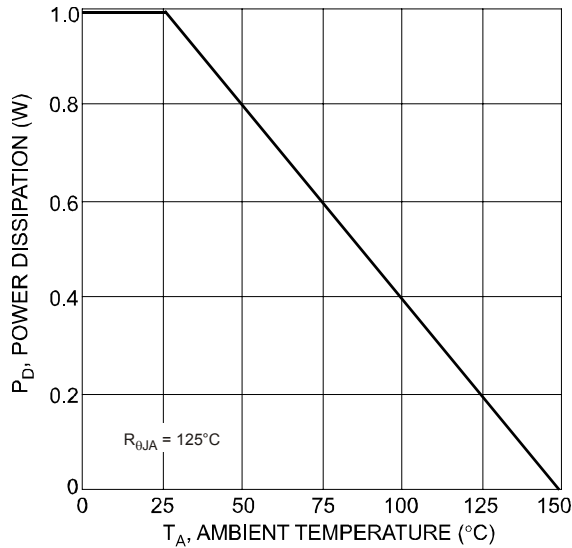


Fig. 1, Power Dissipation vs. Ambient Temperature (Note 3)

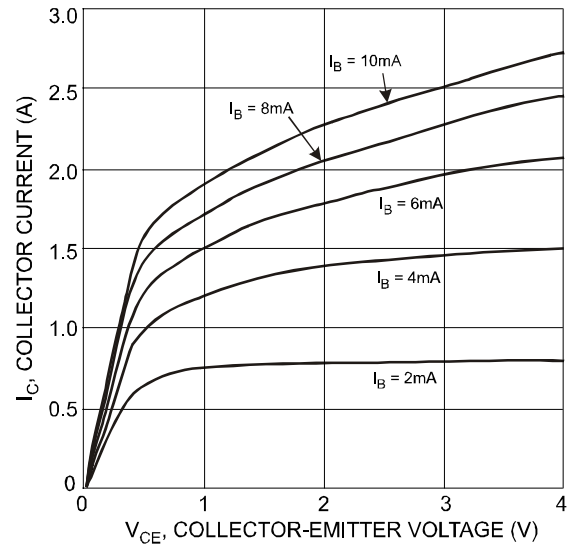


Fig. 2, Typical Collector Current vs. Collector-Emitter Voltage

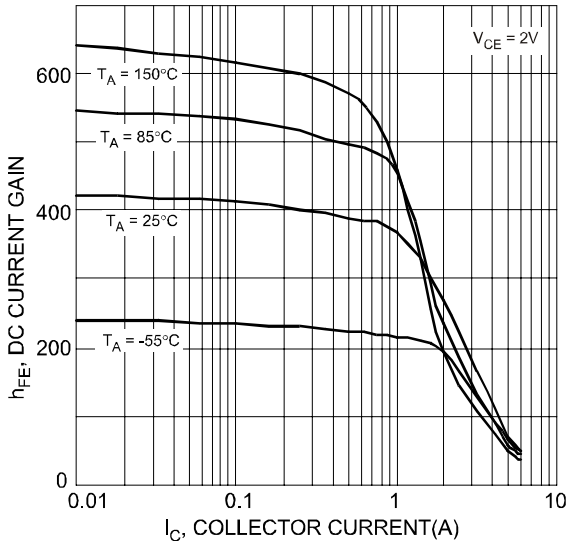


Fig. 3, Typical DC Current Gain vs. Collector Current

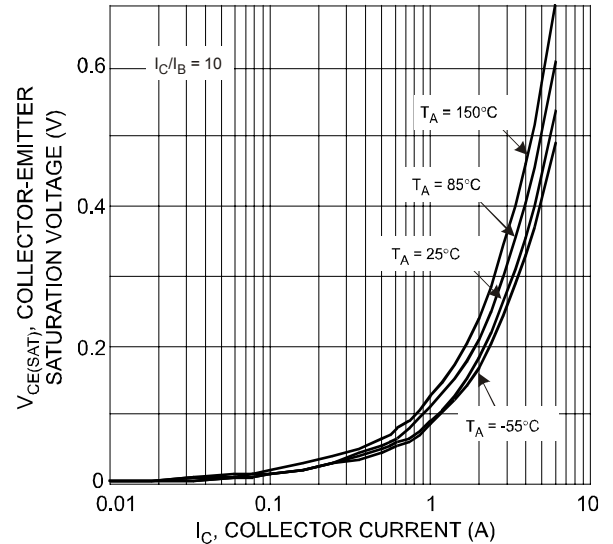


Fig. 4, Typical Collector-Emitter Saturation Voltage vs. Collector Current

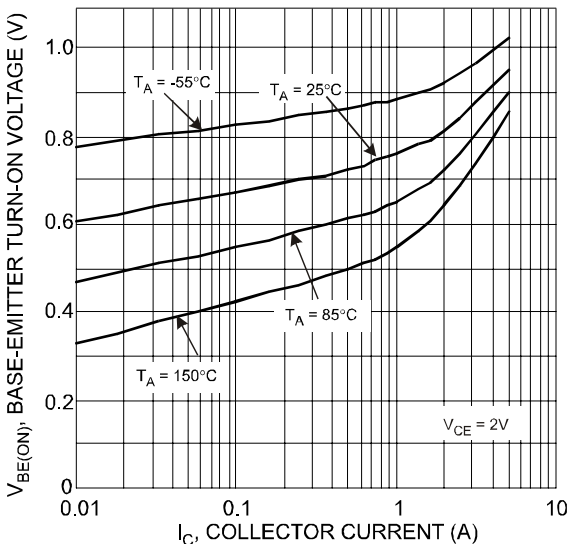


Fig. 5, Typical Base-Emitter Turn-On Voltage vs. Collector Current

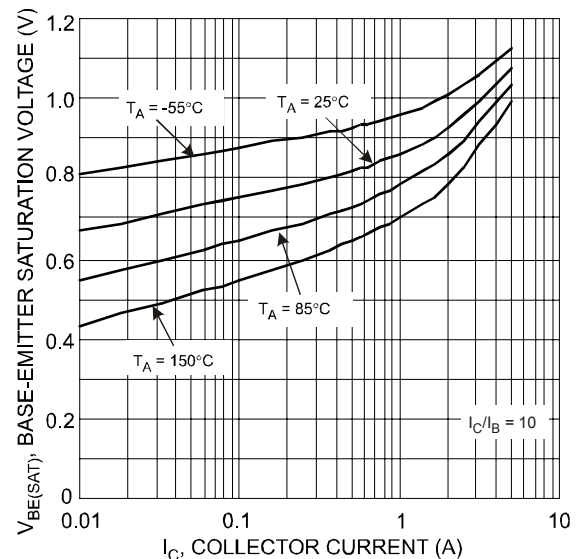


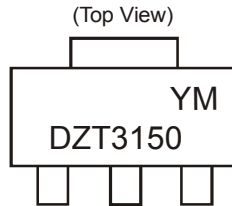
Fig. 6, Typical Base-Emitter Saturation Voltage vs. Collector Current

Ordering Information (Note 6)

Device	Packaging	Shipping
DZT3150-13	SOT-223	2500/Tape & Reel

Note: 6. For Packaging Details, please visit our website at <http://www.diodes.com/ap02007.pdf>.

Marking Information



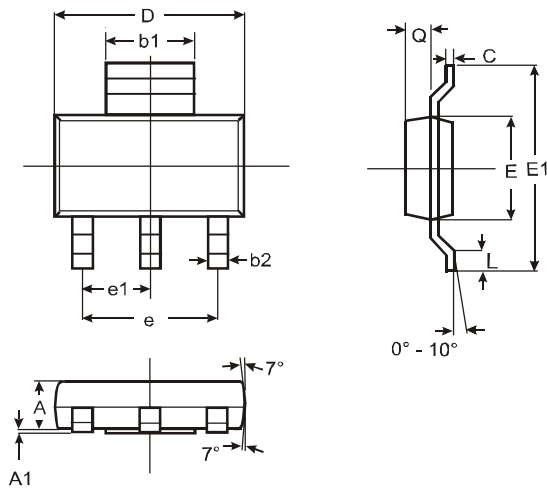
DZT3150 = Product Type Marking Code
 YM = Date Code Marking
 Y = Year ex: T = 2006
 M = Month ex: 9 = September

Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012
Code	T	U	V	W	X	Y	Z

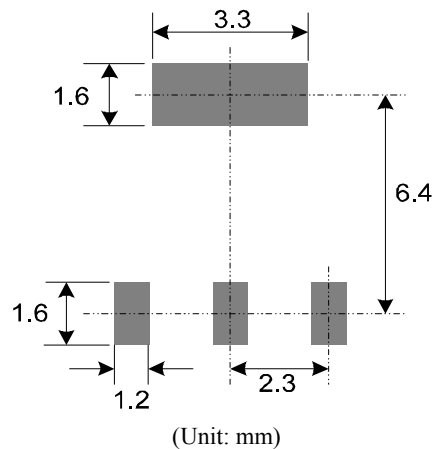
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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: (Based on IPC-SM-782)



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