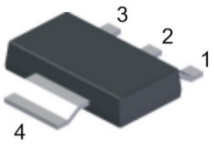
Lead-free Green

DZT751

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

Features

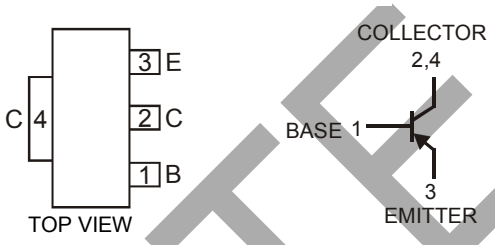
- Epitaxial Planar Die Construction
- Complementary NPN Type Available (DZT651)
- Ideally Suited for Automated Assembly Processes
- Ideal for Medium Power Switching or Amplification Applications
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**



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 & Type Code Information: See Page 4
- Ordering Information: See Page 4
- Weight: 0.115 grams



Schematic and Pin Configuration

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-80	V
Collector-Emitter Voltage	V_{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-5	V
Continuous Collector Current	I_C	-3	A
Peak Pulse Collector Current	I_{CM}	-6	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation @ T_A = 25°C	P_D	1 (Note 3) 2 (Note 4)	W
Thermal Resistance, Junction to Ambient Air (Note 3) @T_A = 25°C	$R_{\theta JA}$	125	°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, pad layout as shown on last page or in Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf, or on page 4 of this data sheet.
4. Device mounted on Polyimide PCB with 1.8cm^2 copper area.

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 5)						
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-80	—	—	V	I_C = -100μA, I_E = 0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-60	—	—	V	I_C = -10mA, I_B = 0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5	—	—	V	I_E = -100μA, I_C = 0
Collector Cutoff Current	I_{CBO}	—	—	-0.1 -10	μA μA	V_{CB} = -60V, I_E = 0 V_{CB} = -60V, I_E = 0, T_A = 100°C
Emitter Cutoff Current	I_{EBO}	—	—	-0.1	μA	V_{EB} = -4V, I_C = 0
ON CHARACTERISTICS (Note 5)						
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	— —	-0.08 -0.2	-0.3 -0.6	V V	I_C = -1A, I_B = -100mA I_C = -3A, I_B = -300mA
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	—	-0.9	-1.25	V	I_C = -1A, I_B = -100mA
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$	—	-0.8	-1	V	V_{CE} = -2V, I_C = -1A
DC Current Gain	h_{FE}	70 100 80 40	200 180 160 140	— 300 — —	—	V_{CE} = -2V, I_C = -50mA V_{CE} = -2V, I_C = -500mA V_{CE} = -2V, I_C = -1A V_{CE} = -2V, I_C = -2A
AC CHARACTERISTICS						
Transition Frequency	f_T	100	145	—	MHz	V_{CE} = -5V, I_C = -100mA, f = 100MHz
Output Capacitance	C_{obo}	—	—	30	pF	V_{CB} = -10V, f = 1MHz
Switching Times	t_{on} t_{off}	— —	45 200	— —	ns ns	V_{CC} = -10V, I_C = -500mA, I_{B1} = I_{B2} = -50mA

Notes: 5. Pulse Test: Pulse width ≤300μs. Duty cycle ≤2.0%.

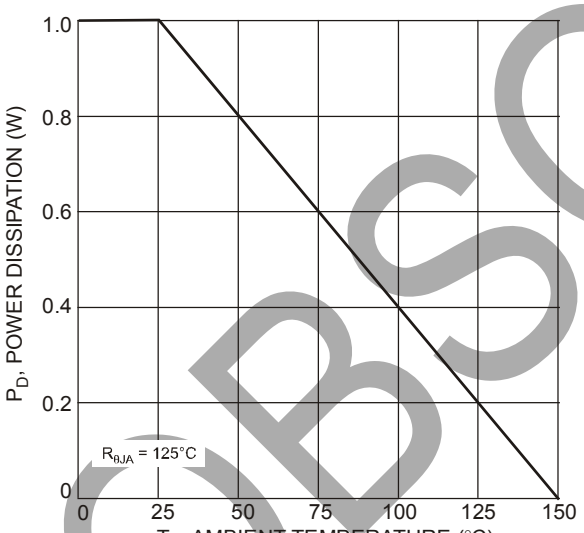


Fig. 1 Power Dissipation vs. Ambient Temperature (Note 3)

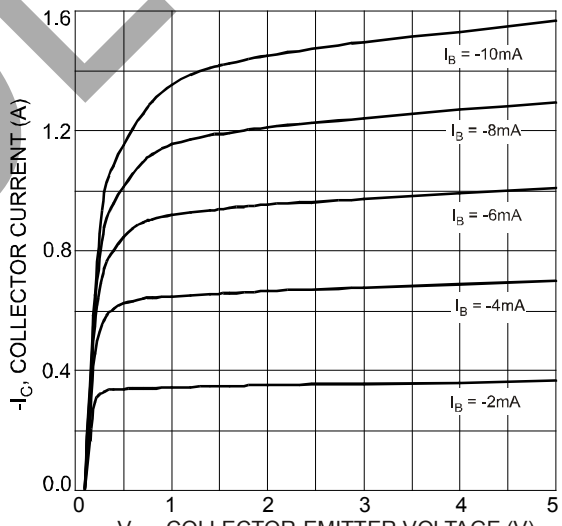


Fig. 2 Typical Collector Current vs. Collector-Emitter Voltage

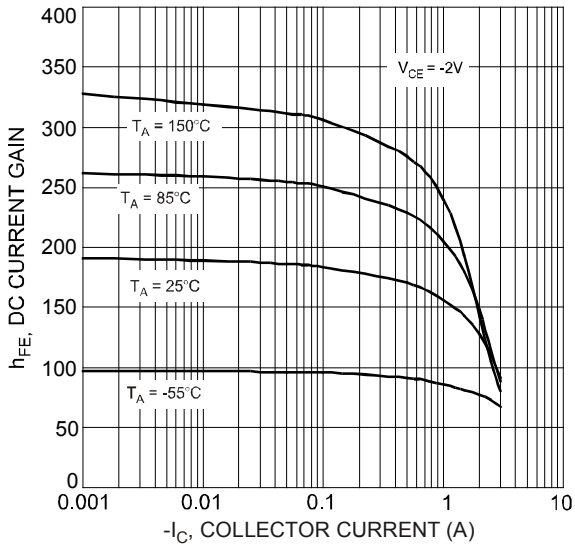


Fig. 3 Typical DC Current Gain vs. Collector Current

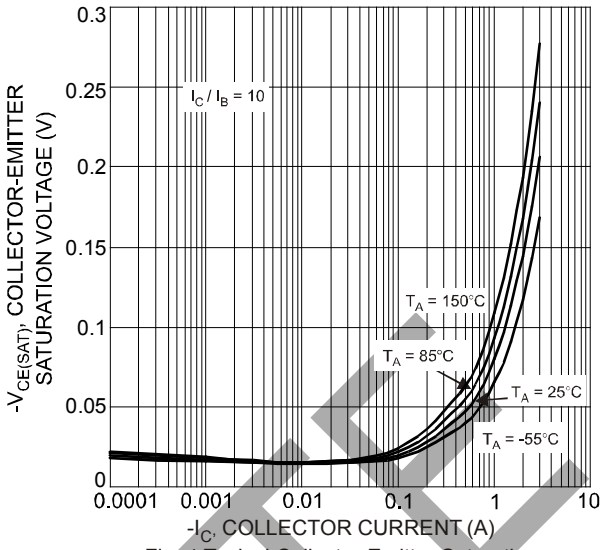


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

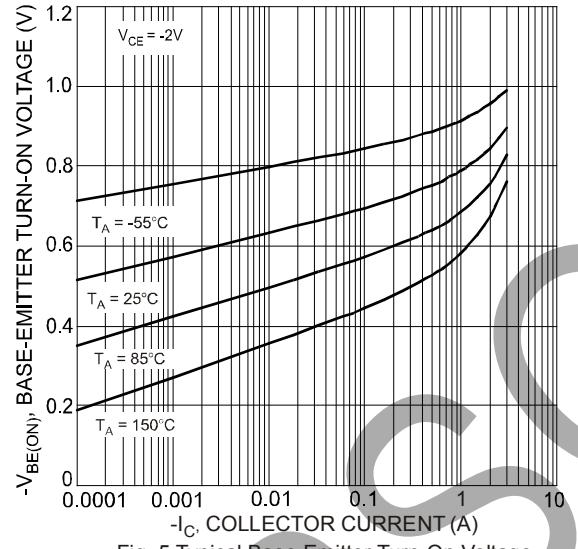


Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current

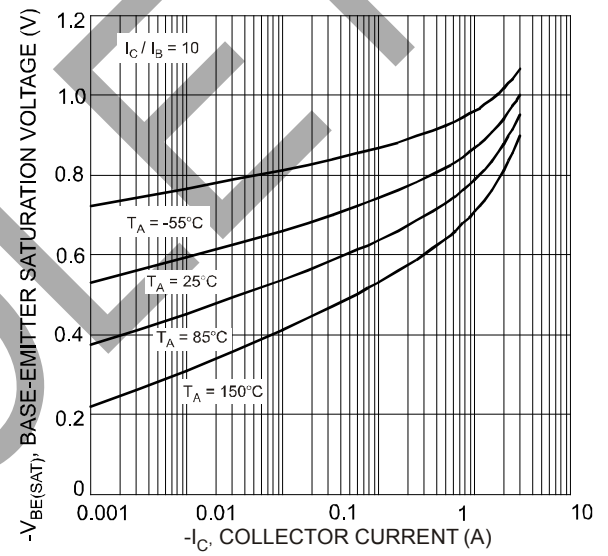


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

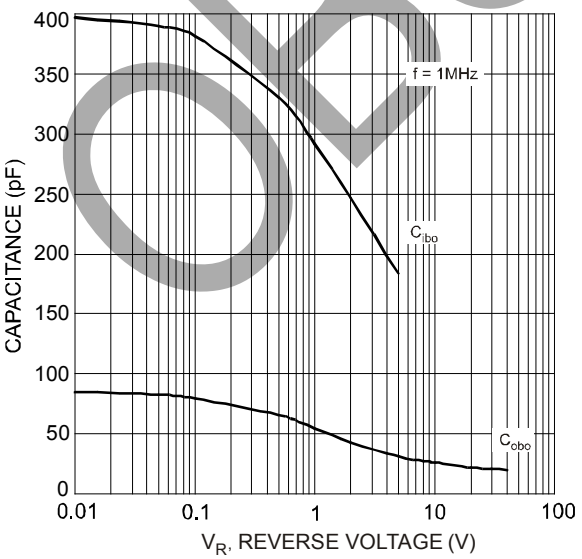


Fig. 7 Typical Capacitance Characteristics

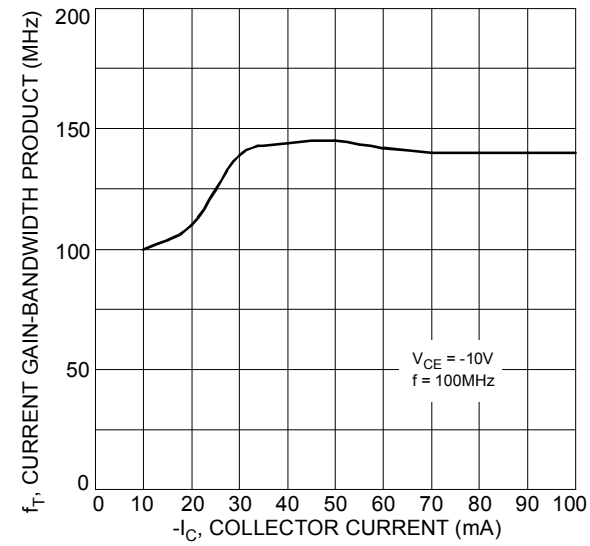


Fig. 8 Typical Gain-Bandwidth Product vs. Collector Current

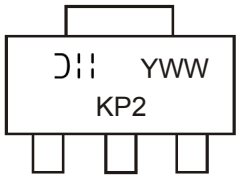
Ordering Information (Note 6)

Device	Packaging	Shipping
DZT751-13	SOT-223	2500/Tape & Reel

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

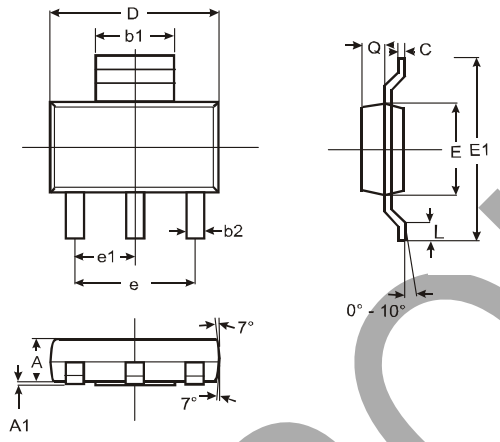
Marking Information

(Top View)



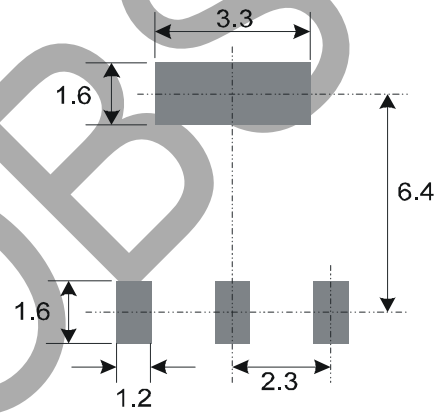
KP2 = Product Type Marking Code
YWW = Date Code Marking
Y = Last digit of year ex: 7 = 2007
WW = Week code 01 - 52

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



(Unit: mm)

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