





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

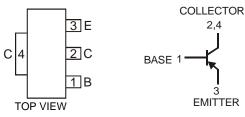
Features

- **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)

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	$R_{ heta JA}$	125	°C/W
Operating and Storage Temperature Range	T _j , T _{STG}	-55 to +150	°C

Notes:

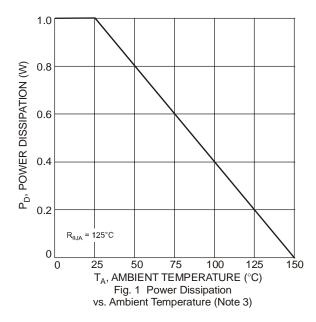
- 1. No purposefully added lead.
- 2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
- Device mounted on FR-4 PCB, pad layout as shown on last page or in Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf, or on page 4 of this data sheet.
- 4. Device mounted on Polyimide PCB with 1.8cm² copper area.

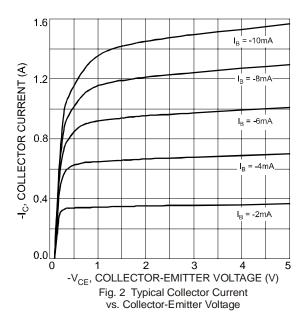


Electrical Characteristics @T_A = 25°C unless otherwise specified

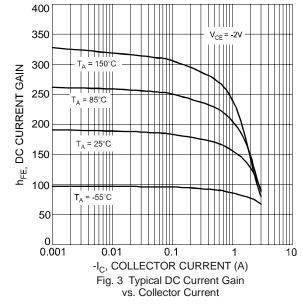
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 5)						
Collector-Base Breakdown Voltage	V _{(BR)CBO}	-80	_	_	V	$I_C = -100 \mu A, I_E = 0$
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	-60		_	V	$I_C = -10 \text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5		_	V	$I_E = -100 \mu A, I_C = 0$
Collector Cutoff Current	I _{CBO}	_		-0.1 -10	μA μA	$V_{CB} = -60V, I_{E} = 0$ $V_{CB} = -60V, I_{E} = 0, T_{A} = 100^{\circ}C$
Emitter Cutoff Current	I _{EBO}	_		-0.1	μΑ	$V_{EB} = -4V, I_{C} = 0$
ON CHARACTERISTICS (Note 5)						
Collector-Emitter Saturation Voltage	Vor(OAT)	_	-0.08	-0.3	V	$I_C = -1A$, $I_B = -100mA$
Concolor Emilior Odlardilori Vollage	V _{CE(SAT)}	_	-0.2	-0.6	V	$I_C = -3A$, $I_B = -300mA$
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 — —	_	$V_{CE} = -2V, I_{C} = -50 \text{mA}$ $V_{CE} = -2V, I_{C} = -500 \text{mA}$ $V_{CE} = -2V, I_{C} = -1A$ $V_{CE} = -2V, I_{C} = -2A$
AC CHARACTERISTICS						
Transition Frequency	f⊤	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	$V_{CC} = -10V, I_C = -500mA,$ $I_{B1} = I_{B2} = -50mA$

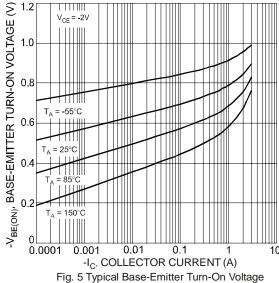
Notes: 5. Pulse Test: Pulse width $\leq 300 \mu s$. Duty cycle $\leq 2.0\%$.

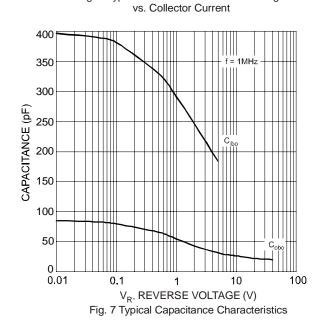












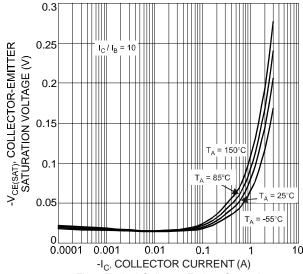


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

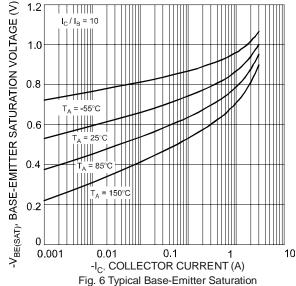


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

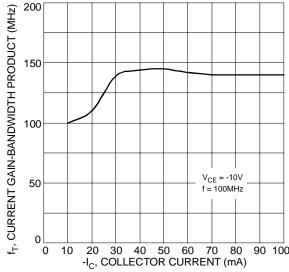


Fig. 8 Typical Gain-Bandwidth Product vs. Collector Current

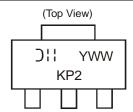


Ordering Information (Note 6)

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

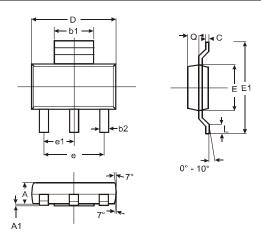
6. For packaging details, please go to our website at http://www.diodes.com/ap02007.pdf.

Marking Information



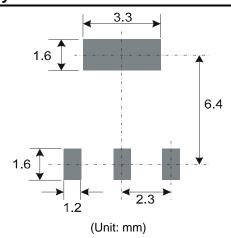
KP2 = Product Type Marking Code YWW = Date Code Marking Y = Last digit of year ex: 7 = 2007 WW = Week code 01 - 52

Package Outline Dimensions



SOT-223					
Dim	Min	Max	Тур		
Α	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		
С	0.20	0.30	0.25		
D	6.45	6.55	6.50		
Е	3.45	3.55	3.50		
E1	6.90	7.10	7.00		
е	_	_	4.60		
e1	_	_	2.30		
L	0.85	1.05	0.95		
Ø	0.84	0.94	0.89		
All Dimensions in mm					

Suggested Pad Layout



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