



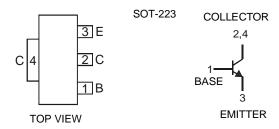
Features

- Epitaxial Planar Die Construction
- Complementary PNP Type Available (DZTA92)
- 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 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_{CBO}	300	V
Collector-Emitter Voltage	V_{CEO}	300	V
Emitter-Base Voltage	V_{EBO}	6	V
Continuous Collector Current	Ιc	500	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation at @T _A = 25°C (Note 3)	P_d	1	W
Thermal Resistance, Junction to Ambient @T _A = 25°C (Note 3)	$R_{ hetaJA}$	125	°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	Тур	Max	Unit	Test Conditions
OFF CHARACTERISTICS (Note 4)						
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	300	_	_	V	$I_C = 100 \mu A, I_E = 0$
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	300	_	_	V	$I_C = 1 \text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6	_	_	V	$I_E = 100 \mu A, I_C = 0$
Collector Cut-Off Current	I _{CBO}	_	_	0.1	μА	V _{CB} = 200V, I _E = 0
Emitter Cut-Off Current	I _{EBO}	_	_	0.1	μА	$V_{EB} = 6V, I_{C} = 0$
ON CHARACTERISTICS (Note 4)	•					
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	_	_	0.5	V	$I_C = 20mA, I_B = 2mA$
Base-Emitter Saturation Voltage	V _{BE(SAT)}	_	_	0.9	V	$I_C = 20mA, I_B = 2mA$
		25	_	_		$I_C = 1$ mA, $V_{CE} = 10$ V
DC Current Gain	h _{FE}	40	_	_	—	I _C = 10mA, V _{CE} = 10V
		40	_	_		$I_C = 30 \text{mA}, V_{CE} = 10 \text{V}$
SMALL SIGNAL CHARACTERISTICS	•					
Transition Frequency	f _T	50	_	_	MHz	$I_C = 10 \text{mA}, V_{CE} = 20 \text{V}, f = 100 \text{MHz}$
Output Capacitance	$C_{ m obo}$	_	_	3	pF	V _{CB} = 20V, f = 1MHz

Notes:

- 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, 1" x 0.85" x 0.052"; pad layout as shown on page 4 or in Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
- 4. Measured under pulsed conditions. Pulse Test: Pulse width = $300\mu s$, Duty Cycle $\leq 2\%$



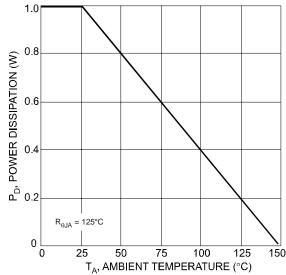


Fig. 1 Power Dissipation vs. Ambient Temperature (Note 3)

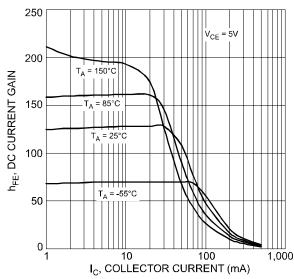


Fig. 3 Typical DC Current Gain vs. Collector Current

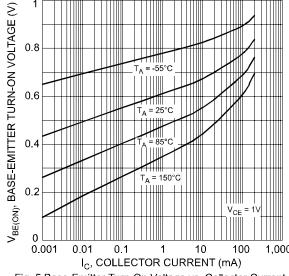
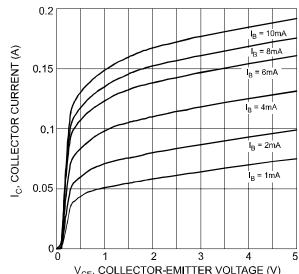
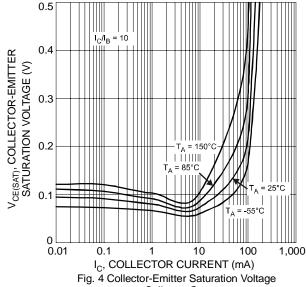


Fig. 5 Base-Emitter Turn-On Voltage vs. Collector Current



 $\rm V_{CE},\, COLLECTOR\text{-}EMITTER\,\,VOLTAGE\,\,(V)$ Fig. 2 Collector Current vs. Collector-Emitter Voltage



vs. Collector Current

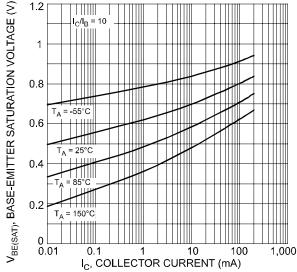
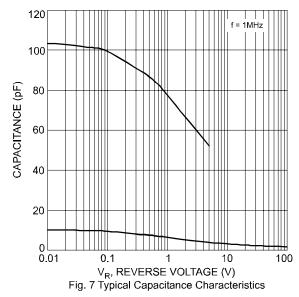


Fig. 6 Base-Emitter Saturation Voltage vs. Collector Current





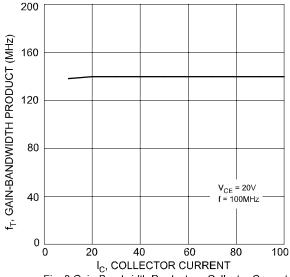


Fig. 8 Gain-Bandwidth Product vs. Collector Current

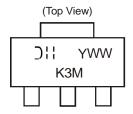
Ordering Information (Note 5)

Device	Packaging	Shipping	
DZTA42-13	SOT-223	2500/Tape & Reel	

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

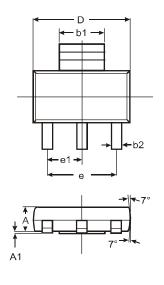
Marking Information

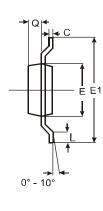
Downloaded from Elcodis.com electronic components distributor



K3M = Product Type Marking Code YWW = Date Code Marking Y = Last digit of year ex: 7 = 2007 WW = Week code 01 - 52

Package Outline Dimensions

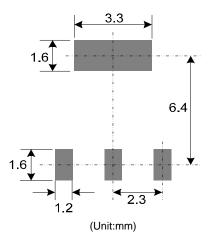




SOT-223					
Dim	Min	Max	Тур		
Α	1.55	1.65	1.60		
A1	0.010	0.15	0.05		
b1	2.90	3.10	3.00		
b2	0.60	0.80	0.70		
С	0.20	0.30	0.25		
D	6.45	6.55	6.50		
Е	3.45	3.55	3.50		
E1	6.90	7.10	7.00		
е			4.60		
e1		_	2.30		
L	0.55	0.75	0.65		
Q	0.84	0.94	0.89		
All Dimensions in mm					



Suggested Pad Layout: (Based on IPC-SM-782)



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