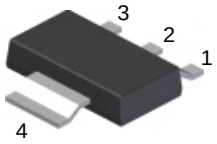
NEW PRODUCT

DZT2907A

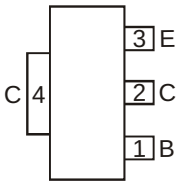
PNP SURFACE MOUNT TRANSISTOR

Features

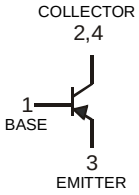
- Epitaxial Planar Die Construction
- Complementary NPN Type Available (DZT2222A)
- Ideally Suited for Automated Assembly Processes
- Ideal for Medium Power Amplification and Switching
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**



SOT-223



TOP VIEW



Schematic and Pin Configuration

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 (approximate)

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Continuous Current (Note 3)	I_C	-600	mA
Peak Collector Current	I_{CM}	-800	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation @ T_A = 25°C	P_d	1000 (Note 3)	mW
		1500 (Note 4)	
Power Derating Factor above 25°C (Note 4)	P_{der}	12	mW/°C
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Ambient Air @ T_A = 25°C (Note 4)	$R_{\theta JA}$	83.3	°C/W

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 2" x 2" FR-4 PC board, 2 oz. copper, single sided, pad layout as shown on page 4, or on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
4. Device mounted on FR-4 PCB, 7cm^2 of copper pad area.

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Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Conditions
OFF CHARACTERISTICS (Note 5)					
Collector-Base Cutoff Current	I_{CBO}	—	-0.01	μA	V_{CB} = -50V, I_E = 0
		—	-10		V_{CB} = -50V, I_E = 0, T_A = 150°C
Collector Cutoff Current	I_{CEX}	—	-50	nA	V_{CE} = -30V, $V_{EB(OFF)}$ = -0.5V
Base Cutoff Current	I_{BL}	—	-50	nA	V_{CE} = -30V, $V_{EB(OFF)}$ = -0.5V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-60	—	V	I_C = -10 μA, I_E = 0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-60	—	V	I_C = -10 mA, I_B = 0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5	—	V	I_E = -10 μA, I_C = 0
ON CHARACTERISTICS (Note 5)					
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	-0.4	V	I_C = -150mA, I_B = -15mA
		—	-1.6	V	I_C = -500mA, I_B = -50mA
DC Current Gain	h_{FE}	75	—	—	V_{CE} = -10V, I_C = -100μA
		100	—	—	V_{CE} = -10V, I_C = -1mA
		100	—	—	V_{CE} = -10V, I_C = -10mA
		100	300	—	V_{CE} = -10V, I_C = -150mA
		50	—	—	V_{CE} = -10V, I_C = -500mA
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	—	-1.3	V	I_C = -150mA, I_B = -15mA
		—	-2.6	V	I_C = -500mA, I_B = -50mA
SMALL SIGNAL CHARACTERISTICS					
Current Gain-Bandwidth Product	f_T	200	—	MHz	V_{CE} = -20V, I_C = -50mA, f = 100MHz
Output Capacitance	C_{obo}	—	8	pF	V_{CB} = -10V, I_E = 0A, f =1MHz
Input Capacitance	C_{ibo}	—	30	pF	V_{EB} = -2V, I_C = 0A, f =1MHz
SWITCHING CHARACTERISTICS					
Turn-On Time	t_{on}	—	45	ns	V_{CC} = -30V, I_C = -150mA, I_{B1} = -15mA
Delay Time	t_d	—	10	ns	
Rise Time	t_r	—	40	ns	
Turn-Off Time	t_{off}	—	100	ns	V_{CC} = -6V, I_C = -150mA, I_{B1} = I_{B2} = -15mA
Storage Time	t_s	—	80	ns	
Fall Time	t_f	—	30	ns	

Notes: 5. Pulse Test: Pulse width, tp<300 uS, Duty Cycle, d< =0.02

Typical Characteristics @T_A = 25°C unless otherwise specified

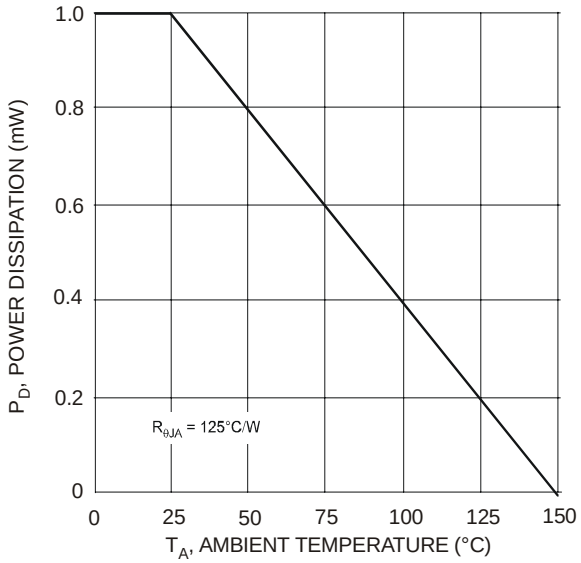


Fig. 1 Power Dissipation vs. Ambient Temperature (Note 3)

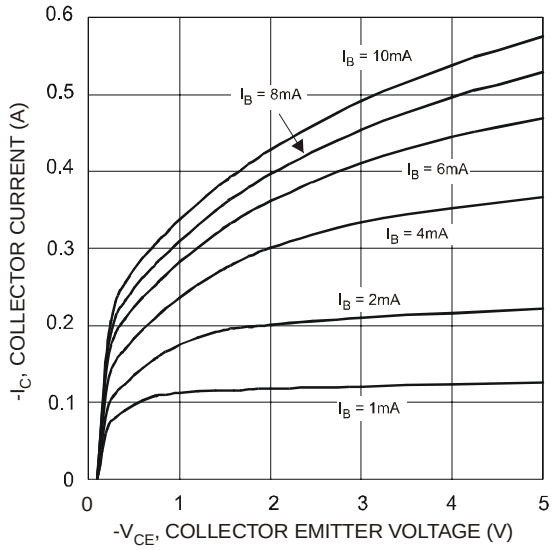


Fig. 2 Typical Collector Current as a Function of Collector Emitter Voltage

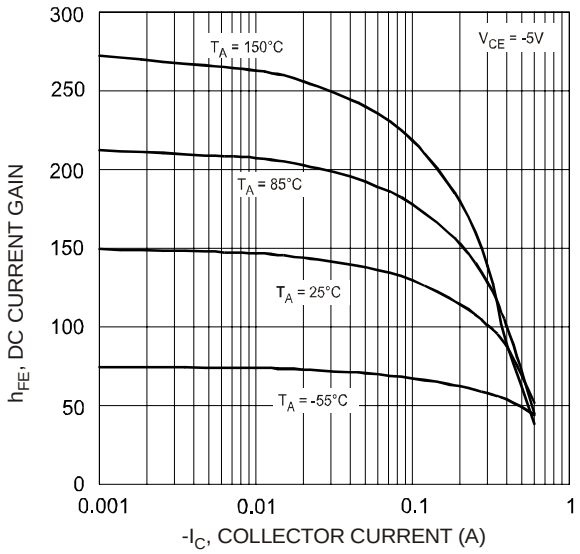


Fig. 3 Typical DC Current Gain vs. Collector Current

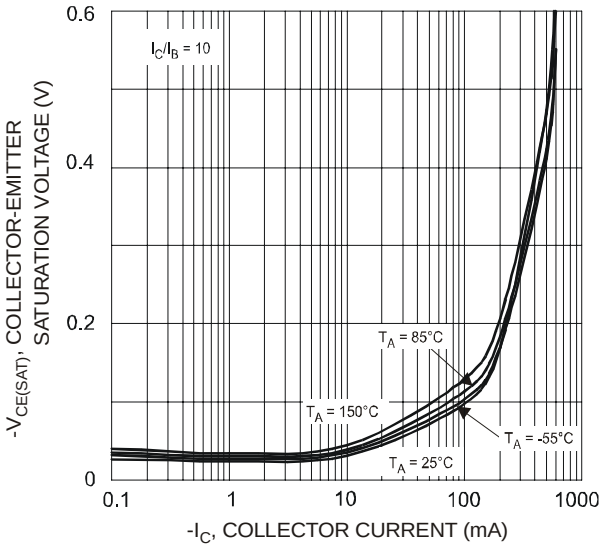


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

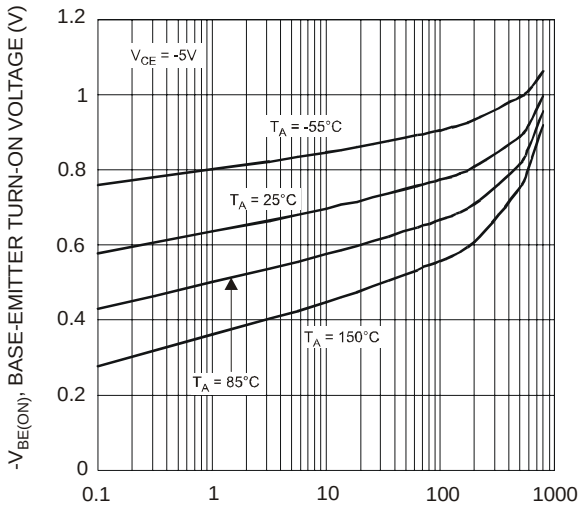


Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current

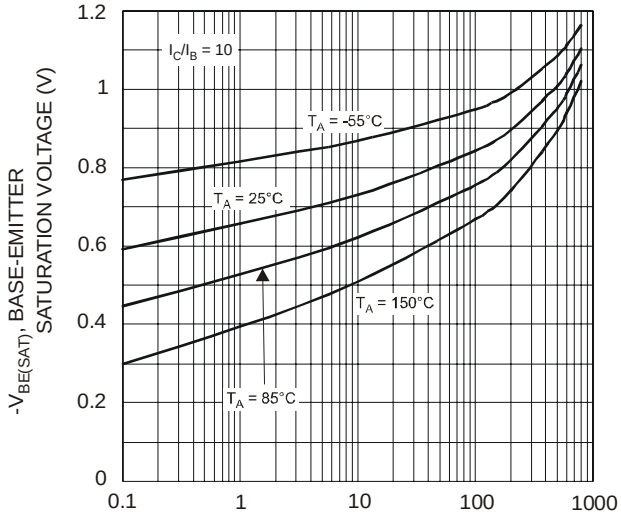


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

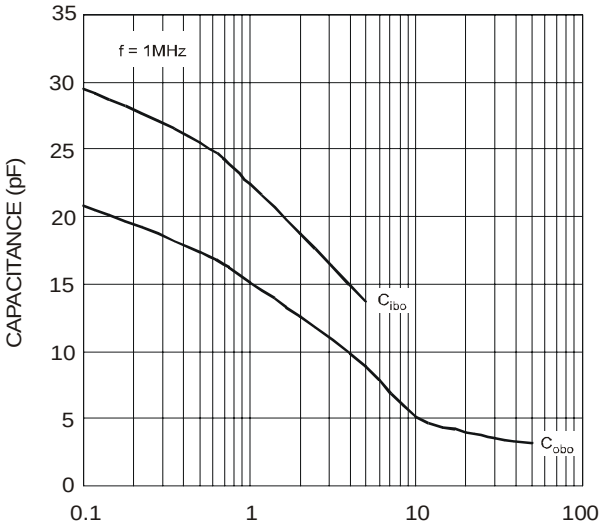


Fig. 7 Typical Capacitance Characteristics

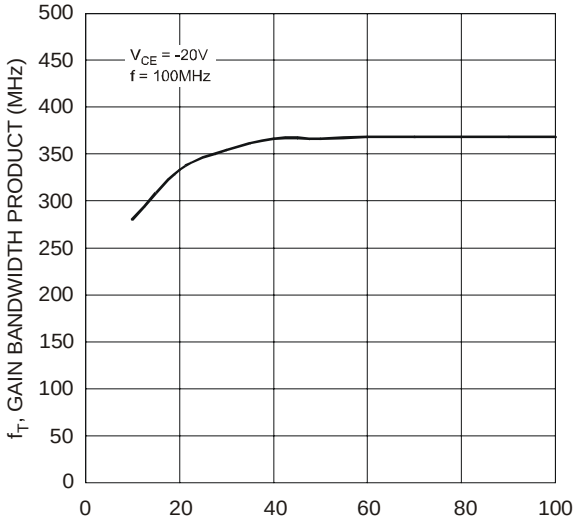


Fig. 8 Typical Gain-Bandwidth Product vs. Collector Current

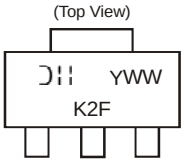
NEW PRODUCT

Ordering Information (Note 6)

Device	Packaging	Shipping
DZT2907A-13	SOT-223	2500/Tape & Reel

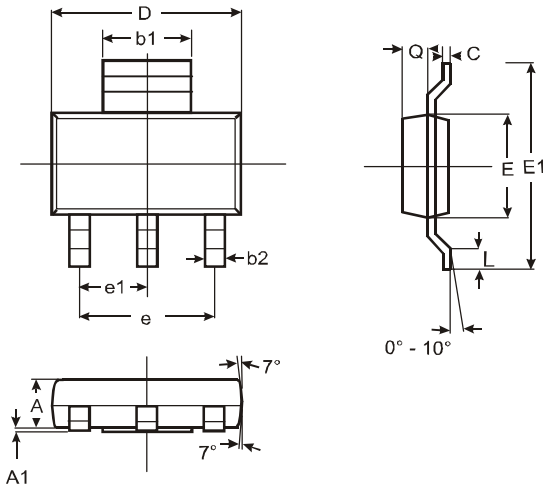
Notes: 6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



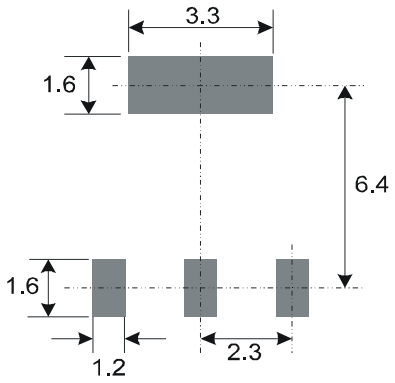
= Manufacturer's code marking
K2F = Product type marking code
YWW = Date code marking
Y = Last digit of year ex: 7 = 2007
WW = Week code 01 - 52

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: (Based on IPC-SM-782)



(Unit:mm)

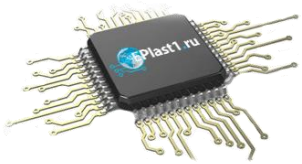
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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