

## Features

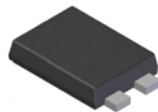
- 43% smaller than SOT223; 60% smaller than TO252
- Maximum height just 1.1mm
- Rated up to 2.25W
- $V_{CE0} = 160V$
- $I_C = 0.6A$
- **Lead, Halogen and Antimony Free, RoHS Compliant (Note 1)**
- **“Green” Device (Note 2)**

## Applications

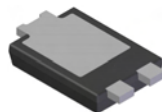
- Telecom line driver

## Mechanical Data

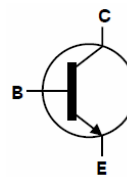
- Case: PowerDI<sup>®</sup>5
- Case Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 ③
- Weight: 0.093 grams (approximate)



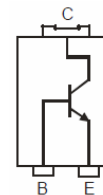
Top View



Bottom View



Device Schematic



Pin-out diagram

## Ordering Information (Note 3)

Part Number	Case	Packaging
DXT5551P5-13	PowerDI <sup>®</sup> 5	5000/Tape & Reel

- Notes:
1. No purposefully added lead. Halogen and Antimony Free.
  2. Diodes Inc's “Green” Policy can be found on our website at <http://www.diodes.com>
  3. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



DXT5551 = Product Type Marking Code  
 Ⓜ = Manufacturers' Code Marking  
 K = Factory Designator  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 09 for 2009)  
 WW = Week code 01 to 53

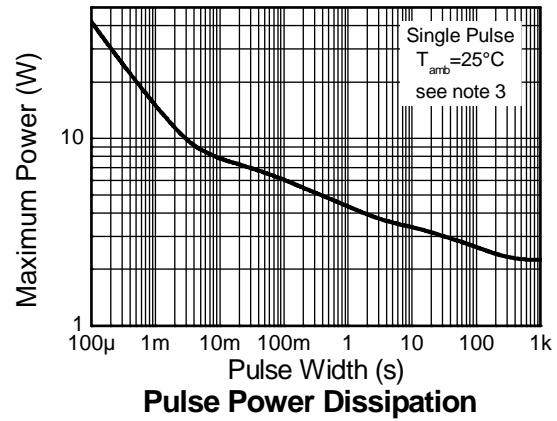
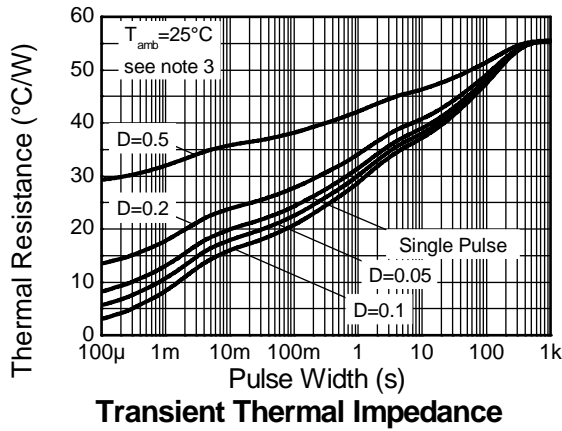
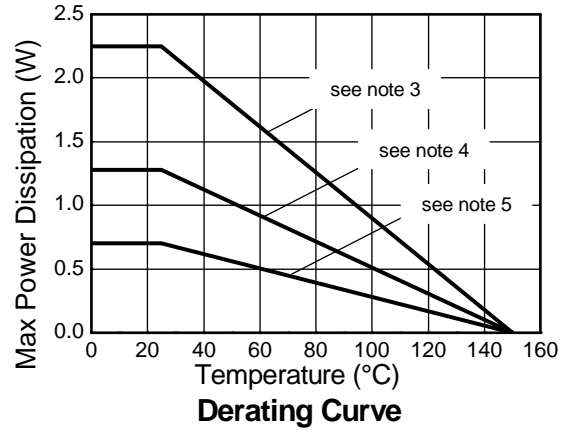
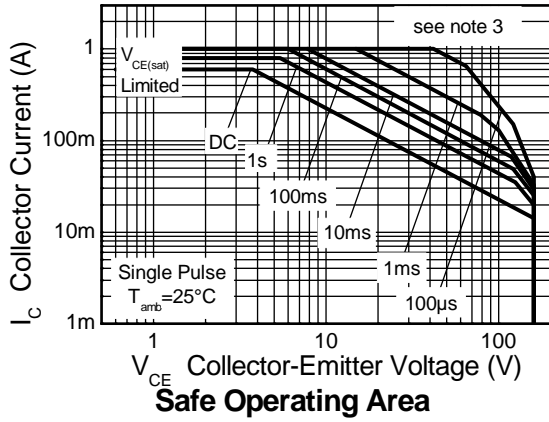
### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	180	V
Collector-Emitter Voltage	$V_{CEO}$	160	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Continuous Collector Current	$I_C$	600	mA

### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation @ $T_A = 25^\circ\text{C}$ (Note 4)	$P_D$	2.25	W
Thermal Resistance, Junction to Ambient Air (Note 4) @ $T_A = 25^\circ\text{C}$	$R_{\theta JA}$	55.5	$^\circ\text{C/W}$
Power Dissipation @ $T_A = 25^\circ\text{C}$ (Note 5)	$P_D$	1.28	W
Thermal Resistance, Junction to Ambient Air (Note 5) @ $T_A = 25^\circ\text{C}$	$R_{\theta JA}$	97.4	$^\circ\text{C/W}$
Power Dissipation @ $T_A = 25^\circ\text{C}$ (Note 6)	$P_D$	0.7	W
Thermal Resistance, Junction to Ambient Air (Note 6) @ $T_A = 25^\circ\text{C}$	$R_{\theta JA}$	179	$^\circ\text{C/W}$
Thermal Resistance, Junction to Collector Terminal	$R_{\theta JT}$	30	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

- Notes:
4. Device mounted on 1.6mm FR-4 PCB, single sided 2 oz. copper, collector pad dimensions 50mm x 50mm.
  5. Device mounted on 1.6mm FR-4 PCB, single sided 1 oz. copper, collector pad dimensions 25mm x 25mm.
  6. Device mounted on 1.6mm FR-4 PCB, single sided 1 oz. copper, minimum recommended pad layout.

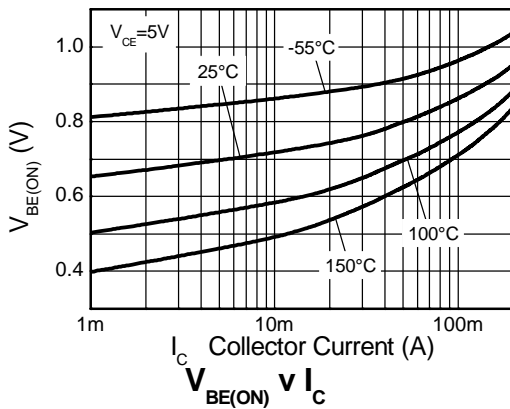
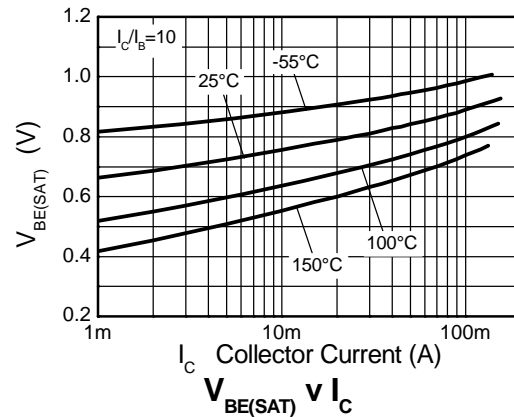
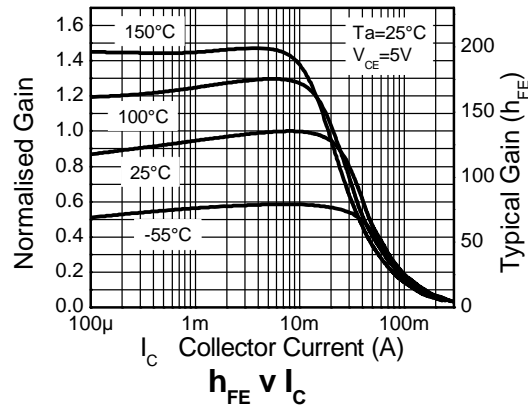
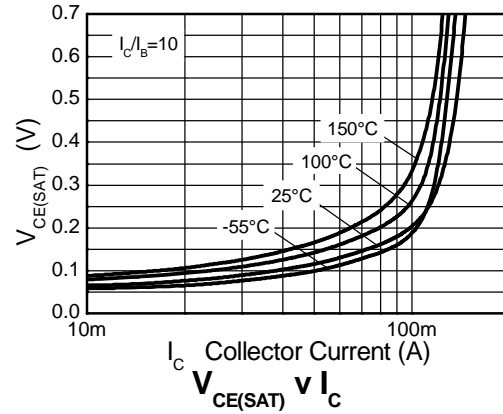
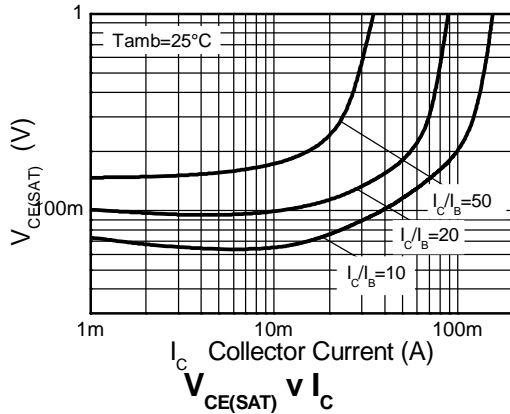


**Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

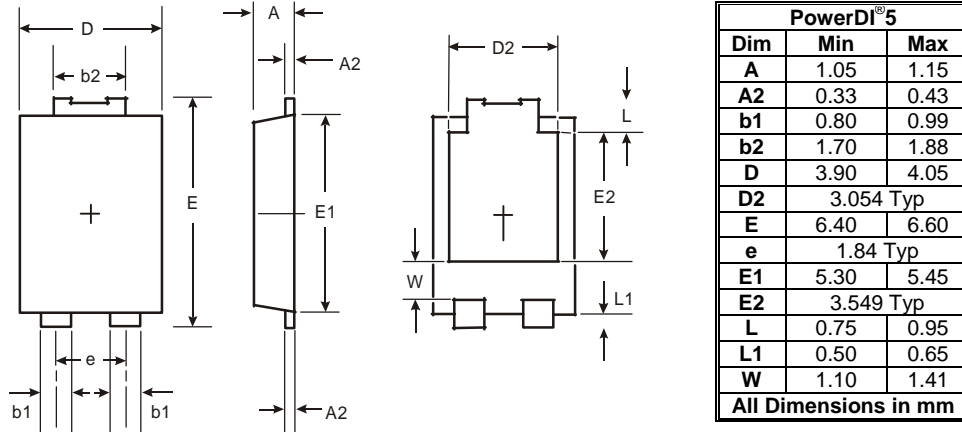
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	180	270	–	V	I <sub>C</sub> = 100μA
Collector-Emitter Breakdown Voltage (Note 7)	V <sub>(BR)CEO</sub>	160	200	–	V	I <sub>C</sub> = 1mA
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	6.0	7.85	–	V	I <sub>E</sub> = 10μA
Collector Cutoff Current	I <sub>CBO</sub>	–	<1	50	nA	V <sub>CB</sub> = 120V
		–	–	50	μA	V <sub>CB</sub> = 120V, T <sub>A</sub> = 100°C
Collector-Emitter Saturation Voltage (Note 7)	V <sub>CE(sat)</sub>	–	65	150	mV	I <sub>C</sub> = 10mA, I <sub>B</sub> = 1mA
		–	115	200	mV	I <sub>C</sub> = 50mA, I <sub>B</sub> = 5mA
Base-Emitter Saturation Voltage (Note 7)	V <sub>BE(sat)</sub>	–	760	1000	mV	I <sub>C</sub> = 10mA, I <sub>B</sub> = 1mA
		–	840	1200	mV	I <sub>C</sub> = 50mA, I <sub>B</sub> = 5mA
DC Current Gain (Note 7)	h <sub>FE</sub>	80	130	–	–	V <sub>CE</sub> = 5V, I <sub>C</sub> = 1mA
		80	145	250	–	V <sub>CE</sub> = 5V, I <sub>C</sub> = 10mA
		30	65	–	–	V <sub>CE</sub> = 5V, I <sub>C</sub> = 50mA
Transition Frequency	f <sub>T</sub>	–	130	–	MHz	V <sub>CE</sub> = 10V, I <sub>C</sub> = 10mA, f = 100MHz
Output Capacitance (Note 7)	C <sub>obo</sub>	–	–	6	pF	V <sub>CB</sub> = 10V, f = 1MHz
Delay Time	t <sub>(d)</sub>	–	95	–	ns	
Rise Time	t <sub>(r)</sub>	–	64	–	Ns	V <sub>CC</sub> = 510V, I <sub>C</sub> = 10mA,
Storage Time	t <sub>(s)</sub>	–	1256	–	ns	I <sub>B1</sub> = I <sub>B2</sub> = 1mA
Delay Time	t <sub>(f)</sub>	–	140	–	ns	

Notes: 7. Pulse Test: Pulse width ≤300μs. Duty cycle ≤2.0%.

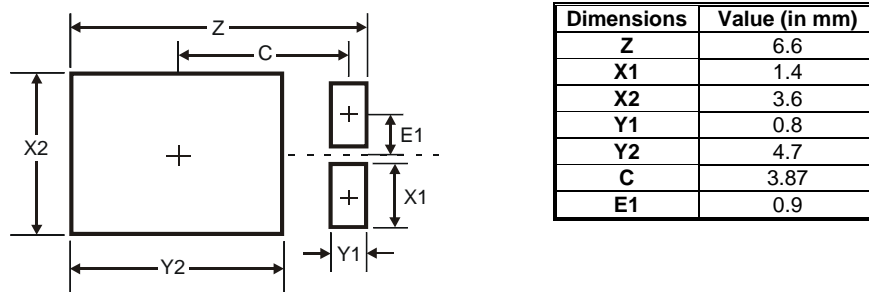
**Typical Characteristic**



**Package Outline Dimensions**



**Suggested Pad Layout**



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