

OBSOLETE – PART DISCONTINUED

Features

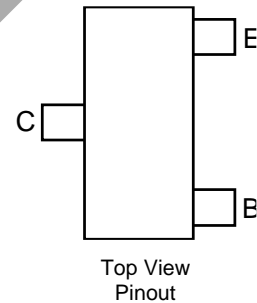
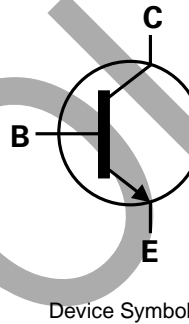
- $BV_{CEO} = 15V$
- Low Saturation Voltage $V_{CE(sat)} < 10mV @ 100mA$
- $I_C = 3A$ Continuous Current
- $R_{sat} = 37m\Omega$ for a Low Equivalent On-Resistance
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

Application

- DC-DC converters
- Power-management functions
- Power switches
- Motor controls

Mechanical Data

- Package: SOT23
- Package Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 ^(e3)
- Weight: 0.008 grams (Approximate)

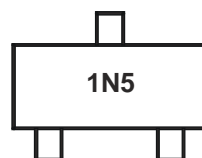


Ordering Information (Note 4)

Part Number	Package	Marking	Reel Size (inches)	Tape Width (mm)	Packing	
					Qty.	Carrier
ZXT11N15DFTA	SOT23	1N5	7	8	3000	Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



1N5 = Product Type Marking Code

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Absolute Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CB0}	40	V
Collector-Emitter Voltage	V_{CEO}	15	V
Emitter-Base Voltage	V_{EBO}	7.5	V
Continuous Collector Current	I_C	3	A
Peak Pulse Collector Current (Single Pulse)	I_{CM}	5	A
Base Current	I_B	500	mA

Thermal Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

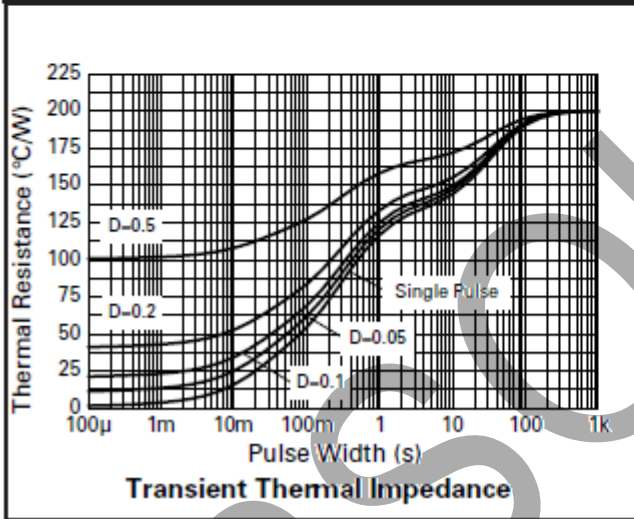
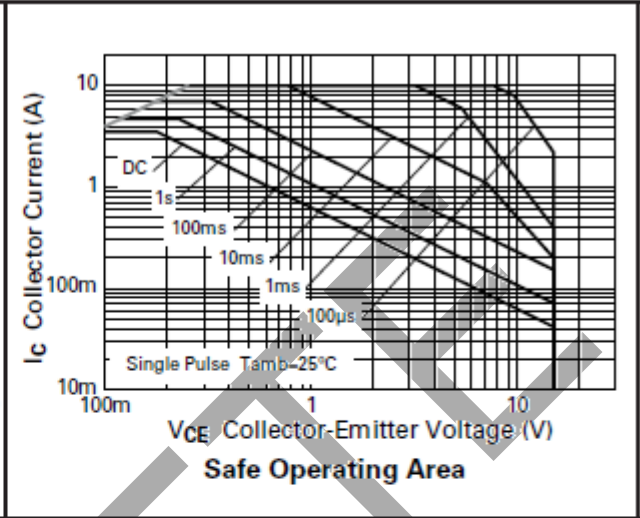
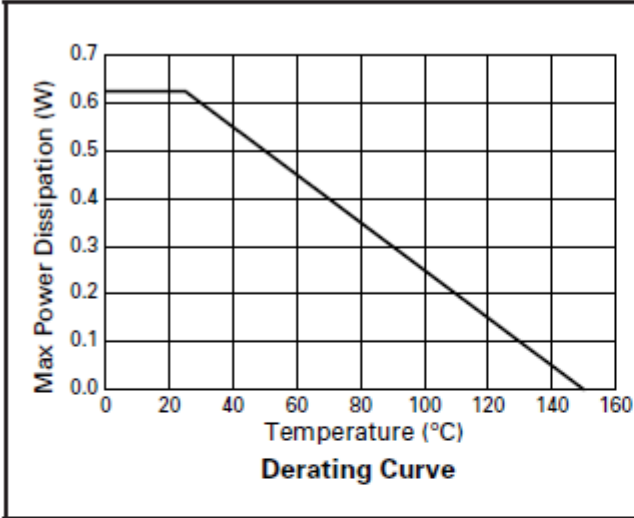
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	625	W
Linear Derating Factor		5	mW/ $^\circ\text{C}$
Power Dissipation (Note 6)	P_D	806	W
Linear Derating Factor		6.4	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	200	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Ambient (Note 6)	$R_{\theta JA}$	155	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

- Notes:
- 5. For a device surface-mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions; device measured when operating in steady state condition.
 - 6. Same as Note 5, except the device is measured at $t < 5$ seconds.

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Thermal Characteristics and Derating Information



Electrical Characteristics (@ T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CB0}	40	—	—	V	I _C = 100μA
Collector-Emitter Breakdown Voltage (Note 7)	BV _{CEO}	15	—	—	V	I _C = 10mA
Emitter-Base Breakdown Voltage	BV _{EB0}	7.5	—	—	V	I _E = 100μA
Collector Cutoff Current	I _{CB0}	—	—	100	nA	V _{CB} = 32V
Collector Emitter Cutoff Current	I _{CES}	—	—	100	nA	V _{CE} = 32V
Emitter Cutoff Current	I _{EB0}	—	—	100	nA	V _{EB} = 6V
Collector-Emitter Saturation Voltage (Note 7)	V _{CE(sat)}	—	7	10	mV	I _C = 100mA, I _B = 10mA
		—	57	80		I _C = 1A, I _B = 10mA
		—	37	55		I _C = 1A, I _B = 100mA
		—	110	150		I _C = 3A, I _B = 150mA
Base-Emitter Saturation Voltage (Note 7)	V _{BE(sat)}	—	0.9	1.0	V	I _C = 3A, I _B = 150mA
Base-Emitter Turn-On Voltage (Note 7)	V _{BE(on)}	—	0.85	1.0	V	I _C = 3A, V _{CE} = 2V
DC Current Gain (Note 7)	h _{FE}	200	—	—	—	I _C = 10mA, V _{CE} = 2V
		300	—	900		I _C = 200mA, V _{CE} = 2V
		250	—	—		I _C = 1A, V _{CE} = 2V
		200	—	—		I _C = 3A, V _{CE} = 2V
		150	—	—		I _C = 5A, V _{CE} = 2V
Transitional Frequency	f _T	—	145	—	MHz	I _C = 50mA, V _{CE} = 10V f = 50MHz
Output Capacitance	C _{obo}	—	26	—	pF	V _{CB} = 10V, f = 1MHz
Switching Time	t _{on}	—	110	—	ns	I _C = 3A, V _{CC} = 10V I _{B1} = -I _{B2} = 30mA
	t _{off}	—	220	—		

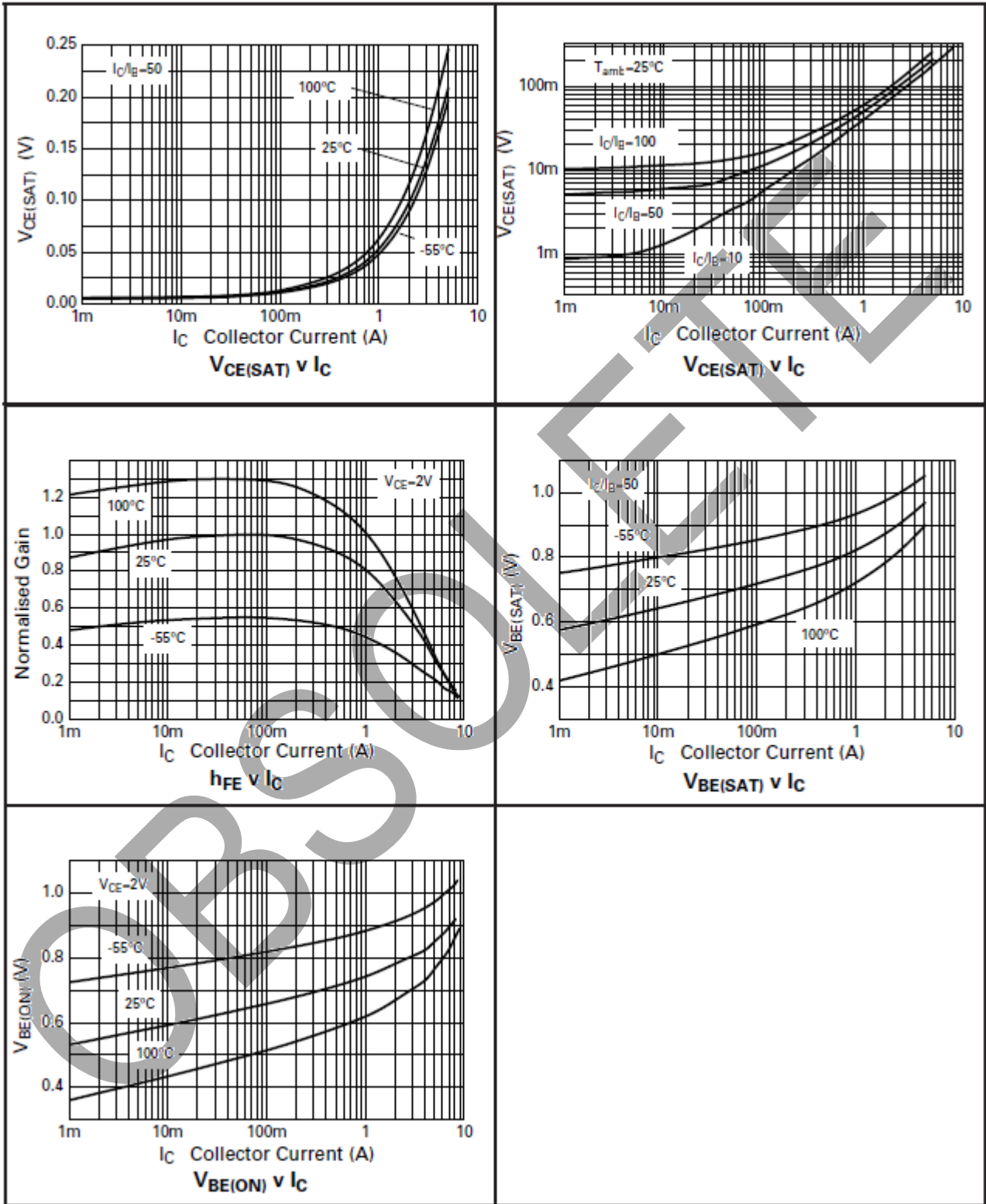
Note: 7. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%.

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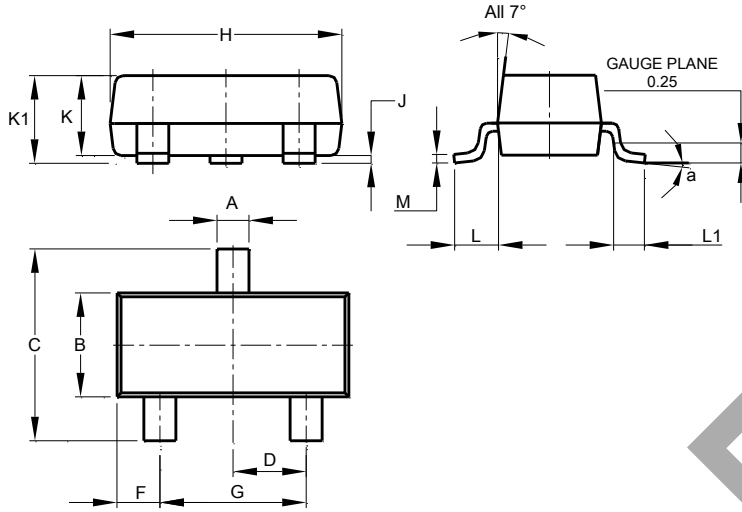
Typical Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)



Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT23

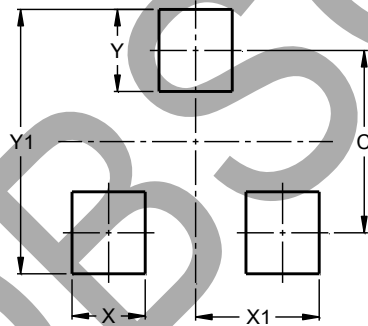


SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT23



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

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