ZXTD718MC

DUAL 20V PNP LOW SATURATION SWITCHING TRANSISTOR

Features and Benefits

- BV_{CEO} > -20V;
- I_C = -3.5A Continuous Collector Current
- R_{SAT} = 64 mΩ for Low Equivalent On Resistance
- Low Saturation Voltage (-220mV @ -1A)
- hFE characterized up to -6A for high current gain holds up
- Dual NPN saving footprint and component count
- Low profile 0.8mm high package for thin applications
- $R_{\theta JA}$ efficient, 40% lower than SOT26
- 6mm^2 footprint, 50% smaller than TSOP6 and SOT26
- **Lead-Free, RoHS Compliant (Note 1)**
- **Halogen and Antimony Free. "Green" Device (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

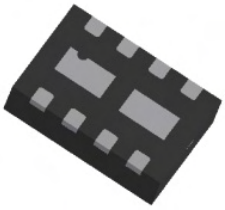
- Case: DFN3020B-8
- Case material: Molded Plastic. "Green" Molding Compound.
- UL Flammability Rating 94V-0
- Terminals: Pre-Plated NiPdAu leadframe.
- Nominal package height: 0.8mm
- Moisture Sensitivity: Level 1 per J-STD-020
- Solderable per MIL-STD-202, Method 208
- Weight: 0.013 grams (approximate)

Applications

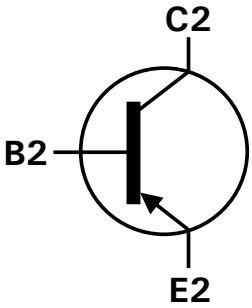
- Battery charging circuits
- Load disconnect switches
- DC-DC converters
- Motor drive
- LED backlighting circuits
- Portable applications

DFN3020B-8

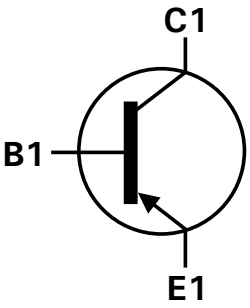
Top View



Bottom View

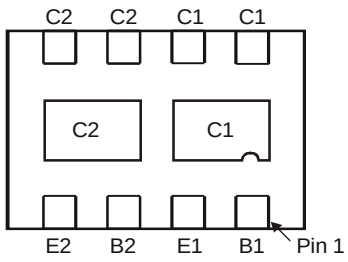


PNP Transistor



PNP Transistor

Equivalent Circuit



Bottom View
Pin Out

Ordering Information (Note 3)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ZXTD718MCTA	D22	7	8	3,000

Notes: 1. No purposefully added lead.
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.

Marking Information

D22 = Product type Marking Code
Top view, dot denotes Pin 1

Maximum Ratings @ T_A = 25°C unless otherwise specified

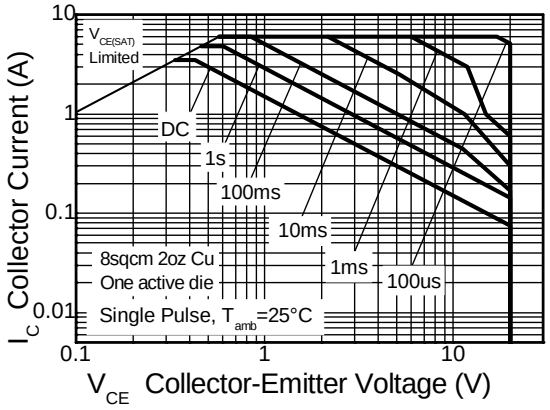
Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	-25	V
Collector-Emitter Voltage	V_{CEO}	-20	
Emitter-Base Voltage	V_{EBO}	-7	
Peak Pulse Current	I_{CM}	-6	A
Continuous Collector Current (Notes 4 and 7)	I_C	-3.5	
Base Current	I_B	-1	

Thermal Characteristics @ T_A = 25°C unless otherwise specified

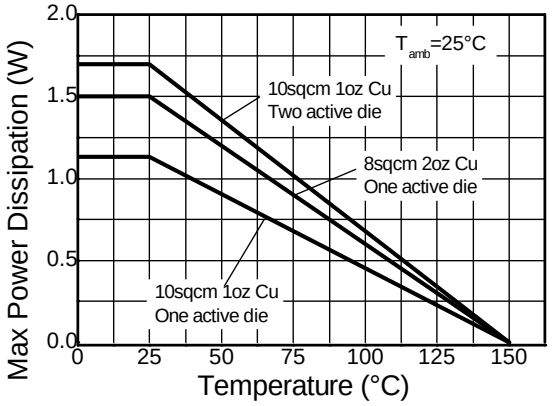
Characteristic		Symbol	Value	Unit
Power Dissipation Linear Derating Factor	(Notes 4 & 7)	P_D	1.5 12	W mW/°C
	(Notes 5 & 7)		2.45 19.6	
	(Notes 6 & 7)		1.13 8	
	(Notes 6 & 8)		1.7 13.6	
Thermal Resistance, Junction to Ambient	(Notes 4 & 7)	$R_{\theta JA}$	83.3	°C/W
	(Notes 5 & 7)		51.0	
	(Notes 6 & 7)		111	
	(Notes 6 & 8)		73.5	
Thermal Resistance, Junction to Lead	(Notes 7 & 9)	$R_{\theta JL}$	17.1	
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	°C

Notes:
4. For a dual device surface mounted on 28mm x 28mm (8cm^2) FR4 PCB with high coverage of single sided 2 oz copper, in still air conditions; the device is measured when operating in a steady-state condition. The heatsink is split in half with the exposed collector pads connected to each half.
5. Same as note (4), except the device is measured at t <5 sec.
6. Same as note (4), except the device is surface mounted on 31mm x 31mm (10cm^2) FR4 PCB with high coverage of single sided 1oz copper.
7. For a dual device with one active die.
8. For dual device with 2 active die running at equal power.
9. Thermal resistance from junction to solder-point (at the end of the collector lead).

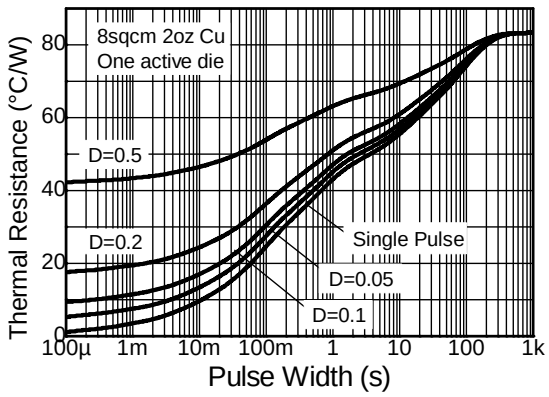
Thermal Characteristics



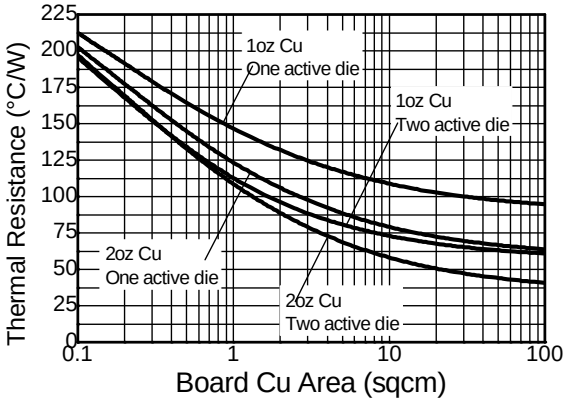
Safe Operating Area



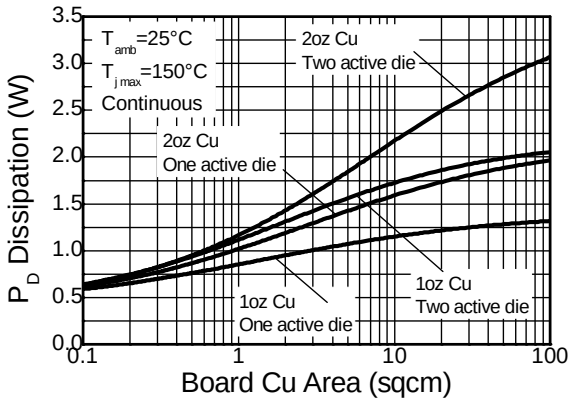
Derating Curve



Transient Thermal Impedance



Thermal Resistance v Board Area



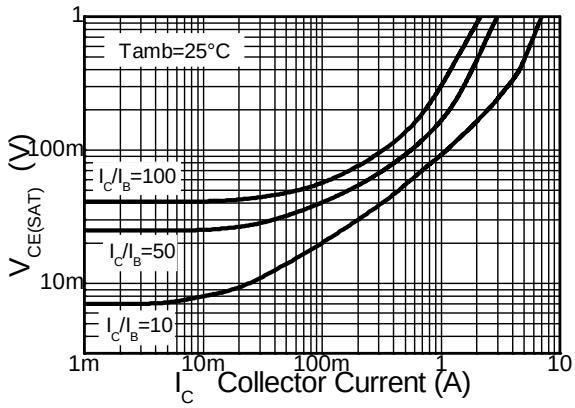
Power Dissipation v Board Area

Electrical Characteristics @T_A = 25°C unless otherwise specified

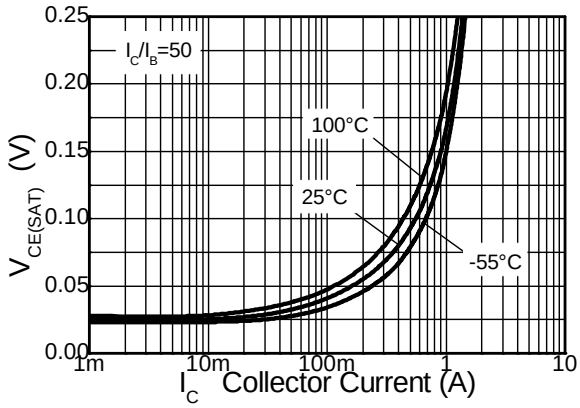
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	-25	-35	-	V	I_C = -100µA
Collector-Emitter Breakdown Voltage (Note 10)	BV_{CEO}	-20	-25	-	V	I_C = 10mA
Emitter-Base Breakdown Voltage	BV_{EBO}	-7	8.5	-	V	I_E = -100µA
Collector Cutoff Current	I_{CBO}	-	-	-100	nA	V_{CB} = -20V
Emitter Cutoff Current	I_{EBO}	-	-	-100	nA	V_{EB} = -6V
Collector Emitter Cutoff Current	I_{CES}	-	-	-100	nA	V_{CES} = -16V
Static Forward Current Transfer Ratio (Note 10)	h_{FE}	300	475	-	-	I_C = -10mA, V_{CE} = -2V
		300	450	-		I_C = -100mA, V_{CE} = -2V
		150	230	-		I_C = -2A, V_{CE} = -2V
		15	30	-		I_C = -6A, V_{CE} = -2V
Collector-Emitter Saturation Voltage (Note 10)	$V_{CE(sat)}$	-	-19	-30	mV	I_C = - 0.1A, I_B = -10mA
		-	-170	-220		I_C = -1A, I_B = -20mA
		-	-190	-250		I_C = -1.5A, I_B = -50mA
		-	-240	-350		I_C = -2.5A, I_B = -150mA
		-	-225	-300		I_C = -3.5A, I_B = -350m
Base-Emitter Turn-On Voltage (Note 10)	$V_{BE(on)}$	-	-0.87	-0.95	V	I_C = -3.5A, V_{CE} = -2V
Base-Emitter Saturation Voltage (Note 10)	$V_{BE(sat)}$	-	-1.01	-1.12	V	I_C = -3.5A, I_B = -350mA
Output Capacitance	C_{obo}	-	21	30	pF	V_{CB} = 10V, f = 1MHz
Transition Frequency	f_T	150	180	-	MHz	V_{CE} = -10V, I_C = -50mA, f = 100MHz
Turn-On Time	t_{on}	-	40	-	ns	V_{CC} = -10V, I_C = 1A
Turn-Off Time	t_{off}	-	670	-	ns	I_{B1} = I_{B2} = 20mA

Notes: 10. Measured under pulsed conditions. Pulse width ≤ 300µs. Duty cycle ≤ 2%

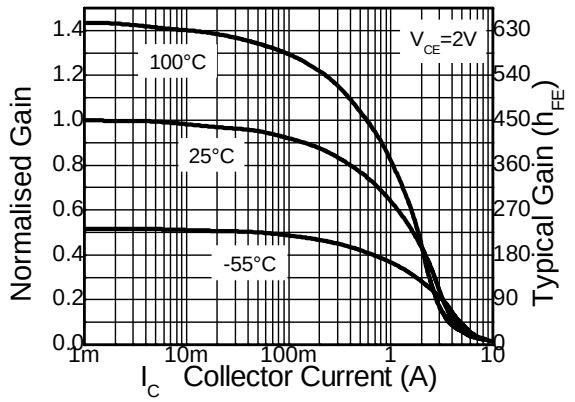
Typical Electrical Characteristics



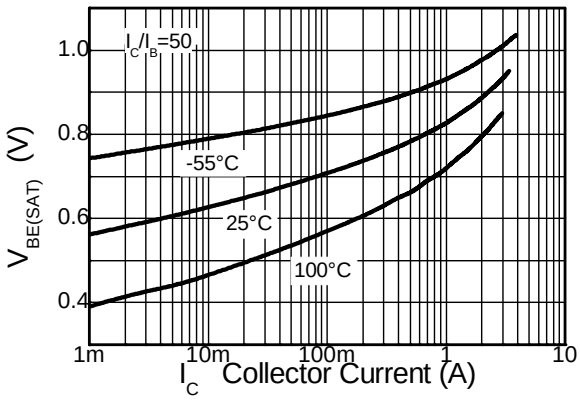
$V_{CE(SAT)}$ v I_C



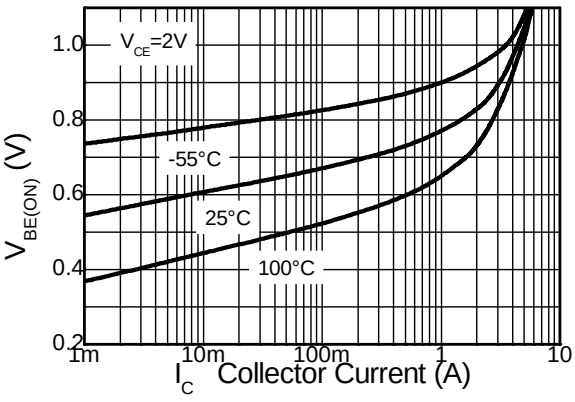
$V_{CE(SAT)}$ v I_C



h_{FE} v I_C

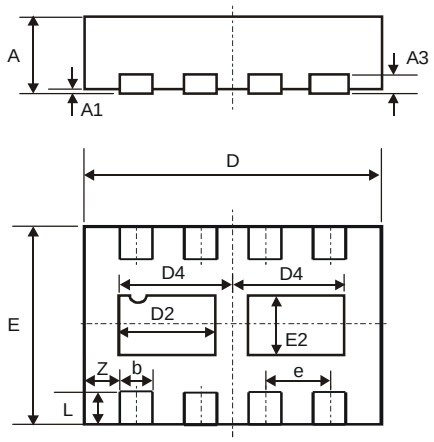


$V_{BE(SAT)}$ v I_C



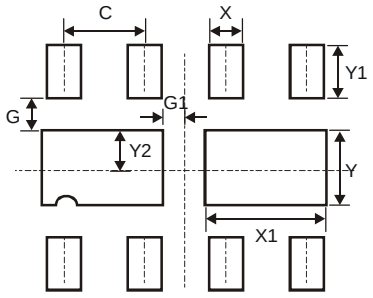
$V_{BE(ON)}$ v I_C

Package Outline Dimensions



DFN3020B-8			
Dim	**Min**	**Max**	**Typ**
A	0.77	0.83	0.80
A1	0	0.05	0.02
A3	-	-	0.15
b	0.25	0.35	0.30
D	2.95	3.075	3.00
D2	0.82	1.02	0.92
D4	1.01	1.21	1.11
e	-	-	0.65
E	1.95	2.075	2.00
E2	0.43	0.63	0.53
L	0.25	0.35	0.30
Z	-	-	0.375
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
C	0.650
G	0.285
G1	0.090
X	0.400
X1	1.120
Y	0.730
Y1	0.500
Y2	0.365

IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

A. Life support devices or systems are devices or systems which:

1. are intended to implant into the body, or

2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

www.diodes.com

OCEAN CHIPS
Океан Электроники
Поставка электронных компонентов

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

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «**JONHON**», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «**FORSTAR**».

AVIC JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).

FORSTAR®

Телефон: 8 (812) 309-75-97 (многоканальный)
Факс: 8 (812) 320-03-32
Электронная почта: ocean@oceanchips.ru
Web: http://oceanchips.ru/
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А