



ZX5T2E6

20V PNP LOW SATURATION SWITCHING TRANSISTOR IN SOT26

Features

- BV_{CEO} > -20V
- I_C = -3.5A Continuous Collector Current
- I_{CM} = -10A Peak Pulse Current
- $R_{CE(sat)} = 31m\Omega$ for a Low Equivalent On-Resistance
- Low Saturation Voltage of <-70mV max @ -1A/100mA
- hFE Characterized up to -10A for High Current Gain Hold-Up
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

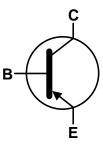
- Case: SOT26
- Case Material: Molded Plastic, "Green" Molding Compound.
 UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Matte Tin Plated Leads.
 Solderable per MIL-STD-202, Method 208 @3
- Weight: 0.015 grams (Approximate)

Applications

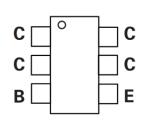
- DC-DC Converters
- Power Management Functions
- Power Switches
- Motor Control







Device Symbol



Pin-Out Top

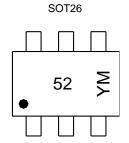
Ordering Information (Notes 4)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ZX5T2E6TA	52	7	8	3,000

Notes:

- 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- 2. See http://www.diodes.com/quality/lead_free.html 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 http://www.diodes.com/products/packages.html.

Marking Information



52 = Product Type Marking Code YM = Date Code Marking Y or \overline{Y} = Year (ex: C = 2015) M or \overline{M} = Month (ex: 9 = September)

Date Code Key

Year	201	5	2016	201 <i>1</i>	2018	2019	2020	202	1 20	122	2023	2024	2025
Code	С		D	Е	F	G	Н	I	,	J	K	L	М
Month	1	Jar	n Fel	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	!	1	2	3	4	5	6	7	8	9	0	N	D



Absolute Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	-25	V
Collector-Emitter Voltage	V _{CEO}	-20	V
Emitter-Base Voltage	V_{EBO}	-7.5	V
Continuous Collector Current	Ic	-3.5	Α
Peak Pulse Collector Current	I _{CM}	-10	A

Thermal Characteristics (@TA = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit	
Power Dissipation	(Note 5)	В	1.1 8.8	W	
Linear Derating Factor	(Note 6)	P _D	1.7 13.6	mW/°C	
Thermal Desistance Junation to Ambient	(Note 5)	D	113	°C/W	
Thermal Resistance, Junction to Ambient	(Note 6)	R _{0JA}	73		
Thermal Resistance, Junction to Lead (Note 7)		$R_{ heta JL}$	18.61		
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C		

ESD Ratings (Note 8)

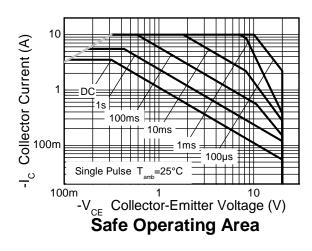
Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	С

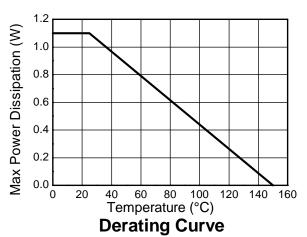
Notes:

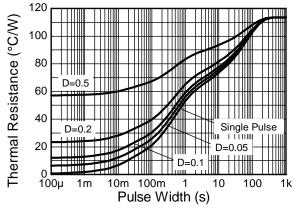
- 5. For a device mounted with collector leads on 25mm x 25mm 1oz copper that is on a single-sided 1.6mm FR4 PCB; device is measured under still air conditions whilst operating in a steady-state.
- 6. Same as Note 5, except the device is measured at t \leq 5 seconds.
- 7. Thermal resistance from junction to solder-point (at the end of the collector leads).
- 8. Refer to JEDEC specification JESD22-A114 and JESD22-A115.



Thermal Characteristics and Derating Information







Transient Thermal Impedance



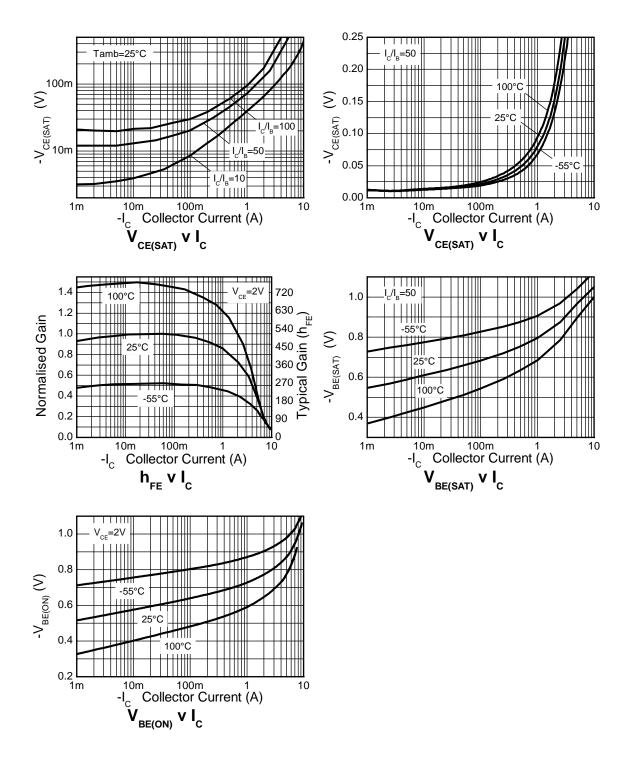
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition	
OFF CHARACTERISTICS							
Collector-Base Breakdown Voltage	BV _{CBO}	-25	-49		V	$I_{C} = -100 \mu A$	
Collector-Emitter Breakdown Voltage (Note 9)	BV _{CEO}	-20	-43		V	$I_C = -10mA$	
Emitter-Base Breakdown Voltage	BV _{EBO}	-7.5	-8.4		V	$I_E = -100 \mu A$	
Collector-Base Cut-Off Current	I _{CBO}			-100	nA	$V_{CB} = -20V$	
Emitter Cut-Off Current	I _{EBO}	_	_	-100	nA	$V_{EB} = -6V$	
Collector-Emitter Cut-Off Current	I _{CES}			-100	nA	$V_{CB} = -20V$	
ON CHARACTERISTICS (Note 9)							
		300	575			$I_C = -10$ mA, $V_{CE} = -2$ V	
DC Current Gain	h _{FE}	300	450	900	_	$I_C = -1A$, $V_{CE} = -2V$	
De current Gain		150	285	_	_	$I_C = -3.5A$, $V_{CE} = -2V$	
		10	40	_	_	I _C = -10A, V _{CE} = -2V	
			-10	-15		I _C = -100mA, I _B = -10mA	
Collector-Emitter Saturation Voltage	V _{CE(sat)}	_	-100	-140	mV	$I_C = -1A$, $I_B = -10mA$	
	, ,	_	-110	-130		$I_C = 3.5A$, $I_B = -350mA$	
Base-Emitter Saturation Voltage	V _{BE(sat)}	_	-0.96	-1.1	V	$I_C = -3.5A$, $I_B = -350mA$	
Base-Emitter Turn-On Voltage	V _{BE(on)}	_	-0.8	-0.9	V	$I_C = -3.5A$, $V_{CE} = -2V$	
SMALL SIGNAL CHARACTERISTICS							
Current Gain-Bandwidth Product	f _T		110		MHz	$V_{CE} = -10V, I_{C} = -50mA, f = 50MHz$	
Output Capacitance	C _{obo}	_	45	_	pF	$V_{CB} = -10V$, $f = 1MHz$	
Turn-On Time	t _(on)	_	90	_	ns	$V_{CC} = -10V, I_{C} = -2A$	
Turn-Off Time	t _(off)	_	325	_	ns	$I_{B1} = I_{B2} = -40 \text{mA}$	

Note: 9. Measured under pulsed conditions; pulse width $\leq 300 \mu s$, duty cycle $\leq 2\%$.



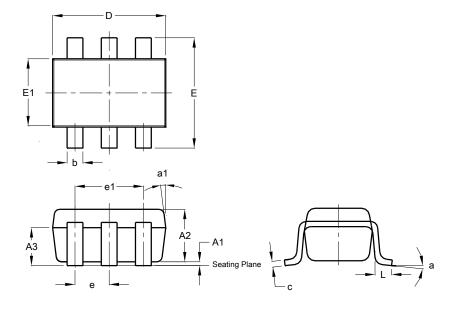
Typical Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)





Package Outline

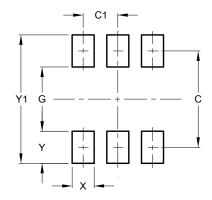
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



	SOT26						
Dim	Min	Max	Тур				
A1	0.013	0.10	0.05				
A2	1.00	1.30	1.10				
А3	0.70	0.80	0.75				
b	0.35	0.50	0.38				
С	0.10	0.20	0.15				
D	2.90	3.10	3.00				
е	-	-	0.95				
e1	-	-	1.90				
Е	2.70	3.00	2.80				
E1	1.50	1.70	1.60				
L	0.35	0.55	0.40				
а	-	-	8°				
a1	-	-	7°				
All Dimensions in mm							

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
С	2.40
C1	0.95
G	1.60
Х	0.55
Υ	0.80
Y1	3.20



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