



15V NPN LOW SATURATION SWITCHING TRANSISTOR IN SOT26

Features

- BV_{CEO} > 15V
- I_C = 4A Continuous Collector Current
- I_{CM} = 13A Peak Pulse Current
- R_{CE(SAT)} = 50mΩ for a Low Equivalent On-Resistance
- Low Saturation Voltage (70mV max @ 1A)
- h_{FE} Characterized up to 12A
- 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)

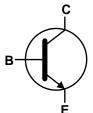
Applications

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

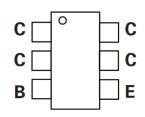
SOT26



Top View



Device Symbol



Top View Pin-Out

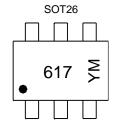
Ordering Information (Note 4)

Product	Compliance	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ZXT10N15DE6TA	AEC-Q101	617	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



617 = 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	2017	2018	2019	2020	202	1 20	22 2	2023	2024	2025
Code	С		D	Е	F	G	Н		,	J	K	L	М
Month	1	Jan	Feb	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 (@TA = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	15	V
Collector-Emitter Voltage	V _{CEO}	15	V
Emitter-Base Voltage	V _{EBO}	5	V
Base Current	I _B	500	mA
Continuous Collector Current	Ic	4	A
Peak Pulse Collector Current	I _{CM}	13	Α

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

Characteristic		Symbol	Value	Unit	
Power Dissipation	(Note 5)	0	1.1 8.8	W	
Linear Derating Factor	(Note 6)	P _D	1.7 13.6	mW/°C	
Thermal Decistance Junction to Ambient	(Note 5)	(Note 5)			
Thermal Resistance, Junction to Ambient	(Note 6)	$R_{ hetaJA}$	73	°C/W	
Thermal Resistance, Junction to Lead (Note 7)		$R_{ heta JL}$	18.6		
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 the collector lead on 25mm x 25mm 1oz copper that is on single-sided 1.6mm FR4 PCB; device is measured under still air conditions whilst operating in a steady-state.

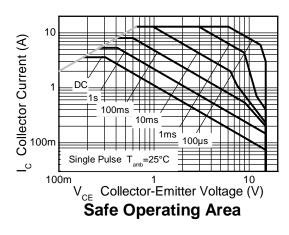
^{6.} Same as Note 6, except the device is measured at $t \le 5$ sec.

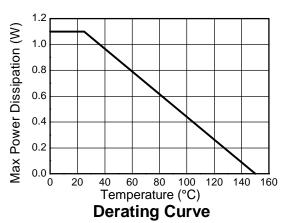
^{7.} Thermal resistance from junction to solder-point (at the end of the collector lead).

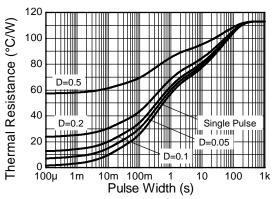
8. Refer to JEDEC specification JESD22-A114 and JESD22-A115.



Thermal Characteristics and Derating Information







Transient Thermal Impedance



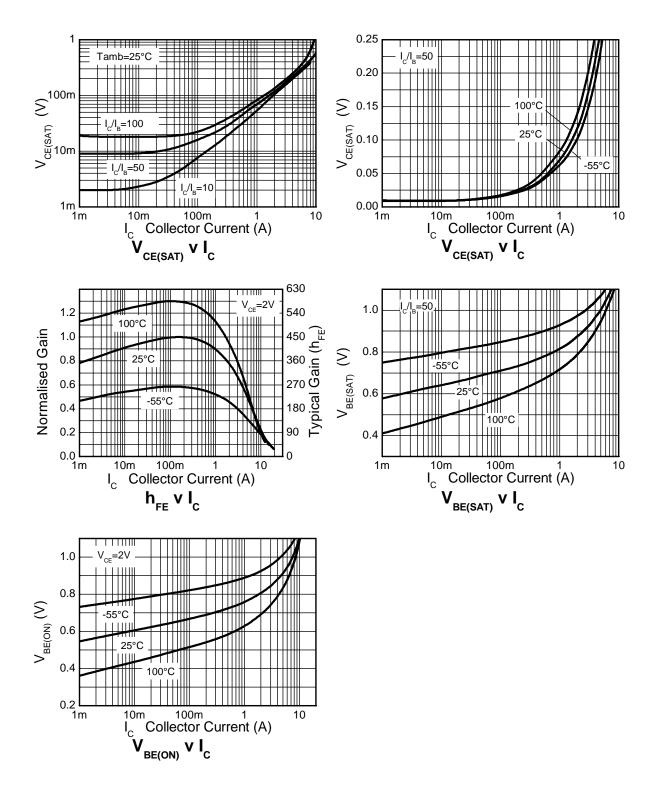
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage		15	70	_	V	$I_{C} = 100 \mu A$
Collector-Emitter Breakdown Voltage (Note 9)		15	18	_	V	I _C = 10mA
Emitter-Base Breakdown Voltage	BV _{EBO}	5	8.2	_	V	I _E = 100μA
Collector-Base Cutoff Current	I _{CBO}	_	_	100	nA	V _{CB} = 10V
Emitter Cutoff Current	I _{EBO}	_	_	100	nA	V _{EB} = 4V
Collector-Emitter Cutoff Current	I _{CES}	_	_	100	nA	V _{CES} = 10V
ON CHARACTERISTICS (Note 9)						
		200	415	_		$I_C = 10$ mA, $V_{CE} = 2$ V
		300	450	_		$I_C = 0.2A, V_{CE} = 2V$
DC Current Gain	h _{FE}	200	320	_	_	I _C = 3A, V _{CE} = 2V
		150	240	_		$I_C = 5A$, $V_{CE} = 2V$
			80	_		I _C = 12A, V _{CE} = 2V
			8	14		I _C = 100mA, I _B = 10mA
Collector Emitter Cotyration Voltage		_	70	100	mV	I _C = 1A, I _B = 10mA
Collector-Emitter Saturation Voltage	V _{CE(sat)}	_	165	200	mv	I _C = 3A, I _B = 50mA
		_	230	260		$I_C = 4A, I_B = 50mA$
Base-Emitter Turn-On Voltage	V _{BE(sat)}	_	0.94	1	V	$I_C = 4A$, $I_B = 50mV$
Base-Emitter Turn-On Voltage	V _{BE(on)}	_	0.87	0.95	V	$I_C = 4A$, $V_{CE} = 2V$
SMALL SIGNAL CHARACTERISTICS						
Current Gain-Bandwidth Product	f⊤	80	120	_	MHz	V _{CE} = 10V, I _C = 50mA, f = 100MHz
Output Capacitance	C _{obo}	_	30	40	pF	V _{CB} = 10V, f = 1MHz
Turn-On Time	t _(on)	_	120	_	ns	V _{CC} = 10V, I _C = 3A
Turn-Off Time	t _(off)	_	160	_	ns	$I_{B1} = I_{B2} = 50 \text{mA}$

Note: 9. Measured under pulsed conditions. Pulse width \leq 300 μ s. Duty cycle \leq 2%.



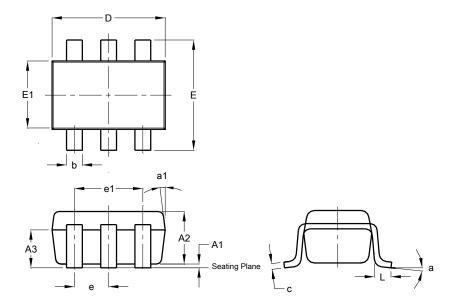
Typical Electrical Characteristics (@TA = +25°C, unless otherwise specified.)





Package Outline Dimensions

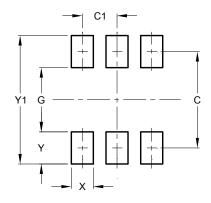
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



	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
Y	0.80
Y1	3.20



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