

## Excellent Integrated System Limited

Stocking Distributor

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[Diodes Incorporated](#)  
[ZXTP25060BFHTA](#)

For any questions, you can email us directly:

[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

**ZXTP25060BFH**

**60V PNP MEDIUM POWER TRANSISTOR IN SOT23**

**Features and Benefits**

- $BV_{CEO} > -60V$  Breakdown Voltage
- 100V forward blocking voltage
- $I_C = -3A$  Continuous Collector Current,
- $I_{CM} = -9A$  Peak Pulse Current,
- Low saturation voltage,  $V_{CE(sat)} < -85mV @ -1A$
- $R_{CE(sat)} = 58 m\Omega$  for a low equivalent on-resistance
- 1.25W power dissipation using SuperSOT package
- Complementary part number ZXTN25060BFH
- **Lead Free, RoHS Compliant (Note 1)**
- **Halogen and Antimony Free, Green Device (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

**Mechanical Data**

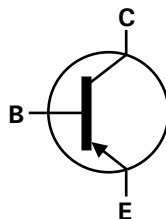
- Case: SOT23
- Case material: molded Plastic. "Green" molding Compound.
- UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish
- Weight: 0.008 grams (Approximate)

**Applications**

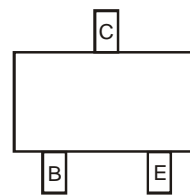
- MOSFET drivers
- Power switches
- Motor control



Top View



Device Symbol



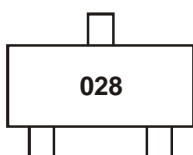
Top View  
Pin-Out

**Ordering Information** (Note 3)

Product	Case	Reel size (inches)	Tape width (mm)	Quantity per reel
ZXTP25060BFHTA	SOT23	7	8mm	3000

- 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**



028 = Product Type Marking Code

**ZXTP25060BFH**

**Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

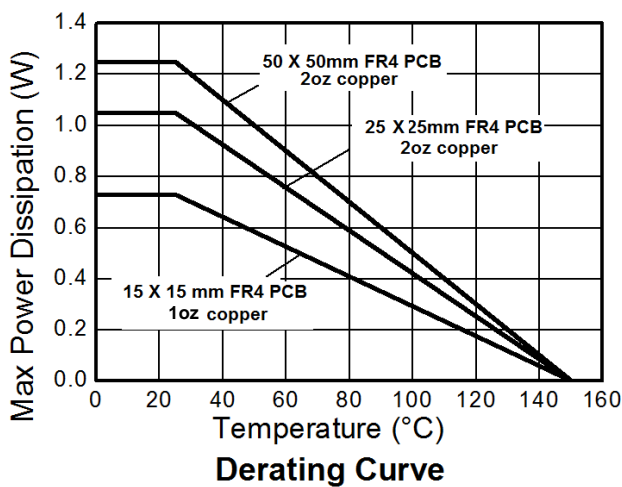
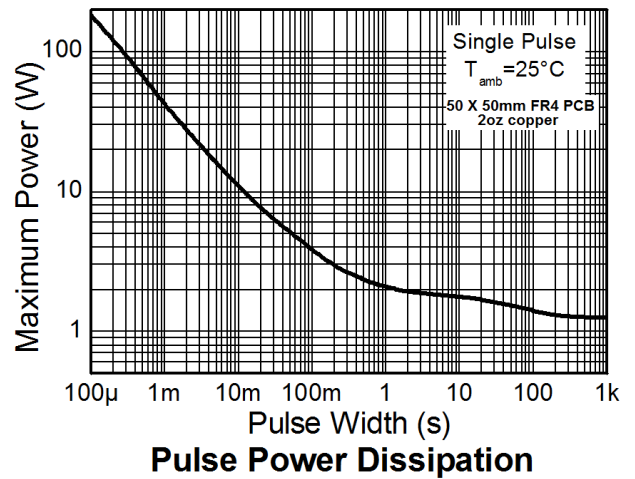
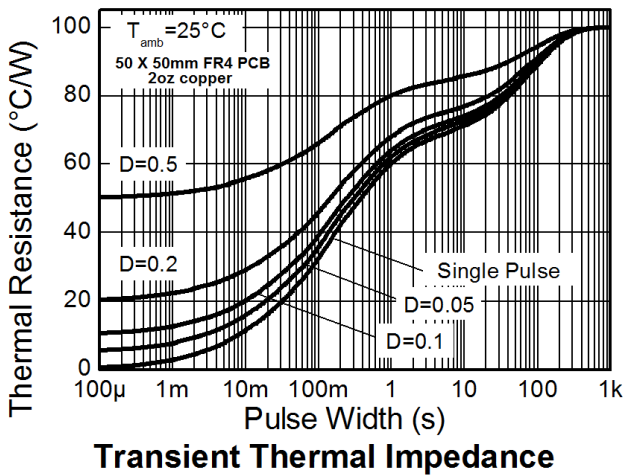
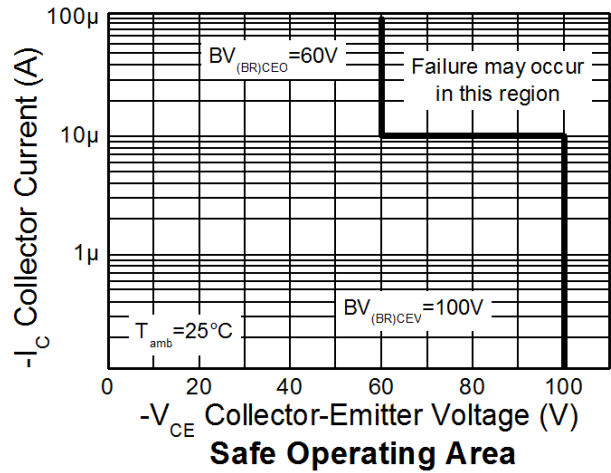
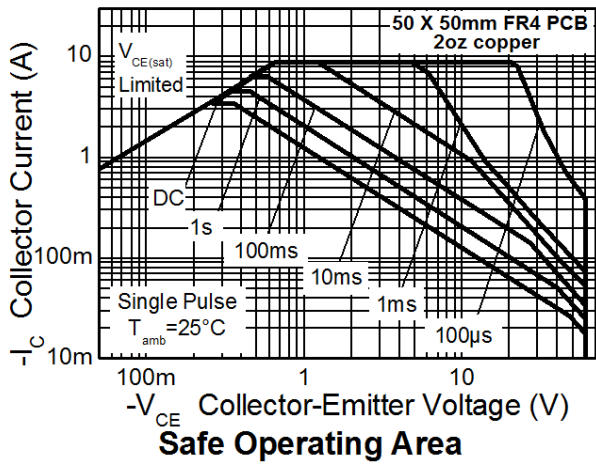
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	-100	V
Collector-Emitter Voltage (forward blocking)	V <sub>CEX</sub>	-100	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-60	V
Emitter-Collector Voltage (reverse blocking)	V <sub>ECO</sub>	-7	V
Emitter-Base Voltage	V <sub>EBO</sub>	-7	V
Continuous Collector Current	I <sub>C</sub>	-3	A
Peak pulse Current	I <sub>CM</sub>	-9	A

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

Characteristic	Symbol	Value	Unit
Power Dissipation Linear derating factor	P <sub>D</sub>	0.73	W
		5.84	
		1.05	
		8.4	
		1.25	
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	9.6	°C/W
		1.81	
		14.5	
		171	
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	119	°C/W
		100	
		69	
		74.95	
Thermal Resistance, Junction to Lead	R <sub>θJL</sub>	74.95	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

- Notes:
4. For a device surface mounted on 15mm x 15mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions; the device is measured when operating in a steady-state condition.
  5. Same as note (4), except the device is surface mounted on 25mm x 25mm with 2 oz copper.
  6. Same as note (4), except the device is surface mounted on 50mm x 50mm with 2 oz copper.
  7. Same as note (6), except the device is measured at t<5secs.
  8. Thermal resistance from junction to solder-point (at the end of the collector lead).

**Thermal Characteristics**

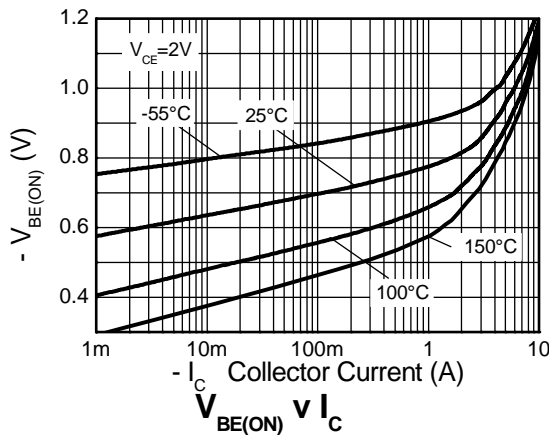
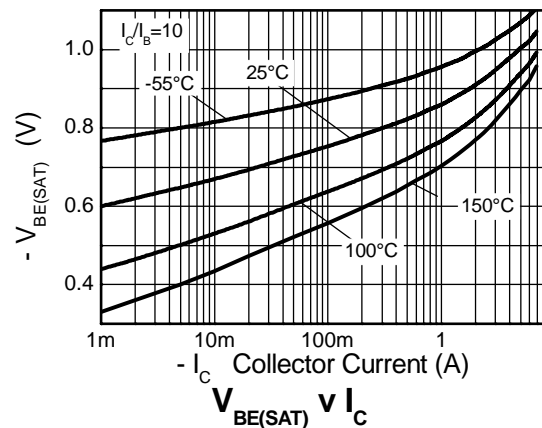
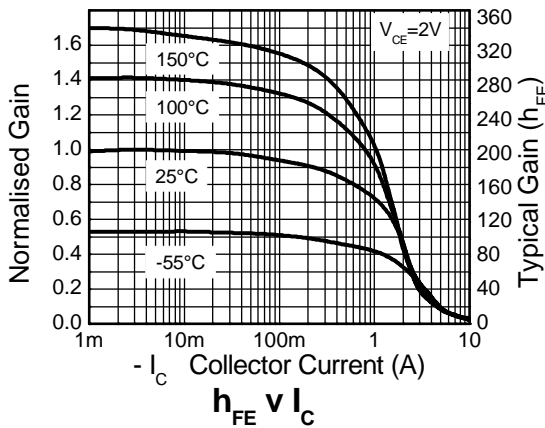
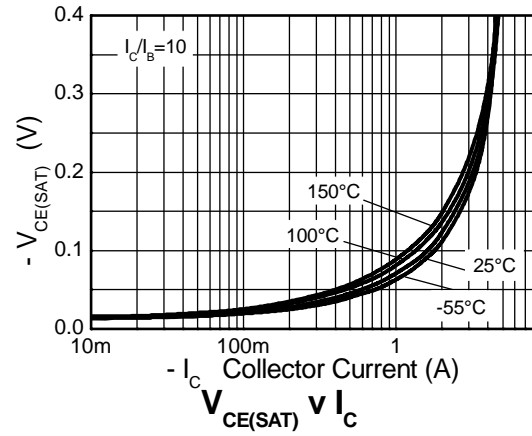
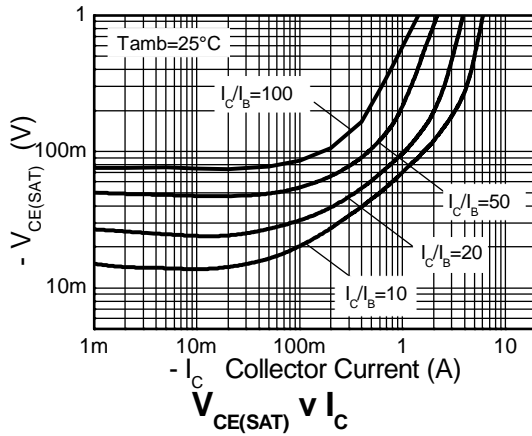


**Electrical Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

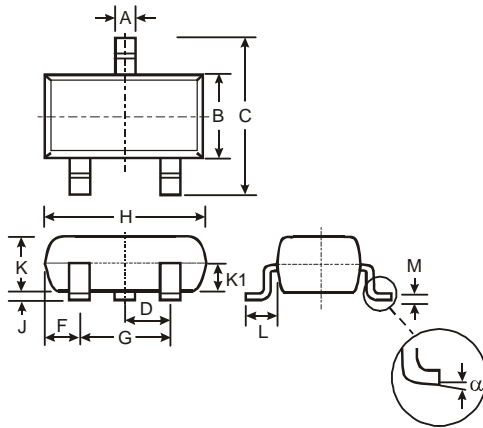
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	$BV_{CBO}$	-100	-120	-	V	$I_C = -100 \mu\text{A}$
Collector-Emitter Breakdown Voltage (forward blocking)	$BV_{CEX}$	-100	-120	-	V	$I_C = -100 \mu\text{A}$ , $R_{BE} < 1\text{k}\Omega$ or $-0.25\text{V} < V_{BE} < 1\text{V}$
Collector-Emitter Breakdown Voltage (base open) (Note 9)	$BV_{CEO}$	-60	-80	-	V	$I_C = -10\text{mA}$
Emitter-Collector Breakdown Voltage (Reverse blocking) (Note 9)	$BV_{ECO}$	-7	-8.6	-	V	$I_E = -100\mu\text{A}$
Emitter-Base Breakdown Voltage	$BV_{EBO}$	-7	-8.1	-	V	$I_E = -100\mu\text{A}$
Collector Cutoff Current	$I_{CBO}$	-	< -1	-50	nA	$V_{CB} = -80\text{V}$
		-	-	-20	$\mu\text{A}$	$V_{CB} = -80\text{V}$ , $T_A = 100^\circ\text{C}$
Collector emitter Cutoff Current	$I_{CEX}$	-	-	-100	nA	$V_{CE} = -80\text{V}$ , $R_{BE} < 1\text{k}\Omega$ or $-0.25\text{V} < V_{BE} < 1\text{V}$
Emitter Cutoff Current	$I_{EBO}$	-	< -1	-50	nA	$V_{EB} = -6\text{V}$
Static Forward Current Transfer Ratio (Note 9)	$h_{FE}$	100	200	300	-	$I_C = -10\text{mA}$ , $V_{CE} = -2\text{V}$
		75	150	-	-	$I_C = -1\text{A}$ , $V_{CE} = -2\text{V}$
		30	60	-	-	$I_C = -3\text{A}$ , $V_{CE} = -2\text{V}$
Base-Emitter Saturation Voltage (Note 9)	$V_{BE(sat)}$	-	-940	-1040	mV	$I_C = -3\text{A}$ , $I_B = -300\text{mA}$
Base-Emitter turn-on Voltage (Note 9)	$V_{BE(on)}$	-	-830	-930	mV	$I_C = -3\text{A}$ , $V_{CE} = -2\text{V}$
Collector-Emitter Saturation Voltage (Note 9)	$V_{CE(sat)}$	-	-45	-55	mV	$I_C = -0.5\text{A}$ , $I_B = -50\text{mA}$
		-	-100	-135		$I_C = -0.5\text{A}$ , $I_B = -10\text{mA}$
		-	-70	-85		$I_C = -1\text{A}$ , $I_B = -100\text{mA}$
		-	-175	-235		$I_C = -3\text{A}$ , $I_B = -300\text{mA}$
Transition Frequency	$f_T$	-	250	-	MHz	$I_C = -100\text{mA}$ , $V_{CE} = -5\text{V}$ , $f = 100\text{MHz}$
Collector Output Capacitance (Note 9)	$C_{OBO}$	-	17.6	30	pF	$V_{CB} = -10\text{V}$ , $f = 1\text{MHz}$
Turn-on time	$t_{(on)}$	-	26.5	-	ns	$V_{CC} = -10\text{V}$ , $I_C = -500\text{mA}$ ,
Turn-off time	$t_{(off)}$	-	291	-	ns	$I_{B1} = I_{B2} = -50\text{mA}$

 Notes: 9. Measured under pulsed conditions. Pulse width  $\leq 300 \mu\text{s}$ . Duty cycle  $\leq 2\%$

**Typical Characteristics**

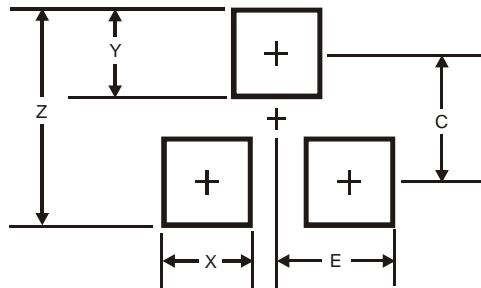


**Package Outline Dimensions**



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	0.903	1.10	1.00
K1	-	-	0.400
L	0.45	0.61	0.55
M	0.085	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35



A Product Line of  
Diodes Incorporated



**ZXTP25060BFH**

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