

## Features

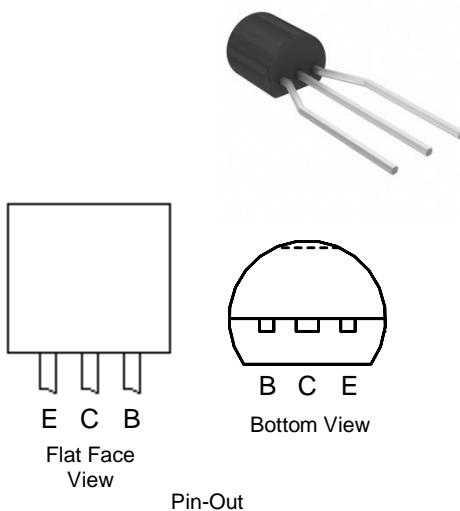
- $BV_{CEO} > 480V$
- $BV_{CES} > 700V$
- $BV_{EBO} > 10V$
- $I_C = 50mA$  High Collector Current
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## Application

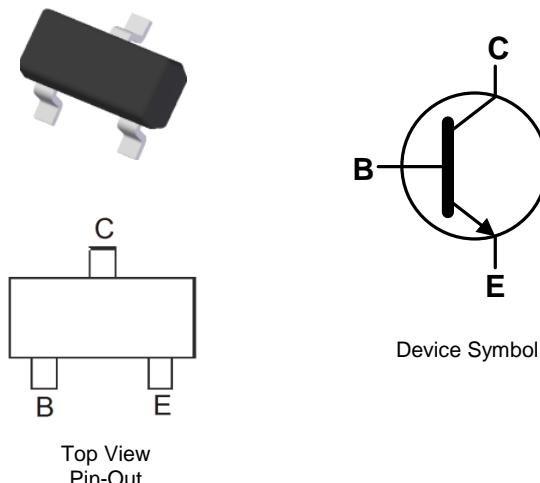
Low Power AC-DC SMPS for:

- Battery Chargers for Mobile Phone / Tablets / Smartphones
- Power Supply for DVD / STB  
LED Lighting

TO92



SOT23



## Ordering Information (Note 4)

Product	Package	Marking	Quantity
APT17ZTR-G1	TO92 (Joggled Legs)	APT17Z-G1	2,000 Taped, per Ammo Box
APT17NTR-G1	SOT23	GD8	3,000 Taped, per 7" reel

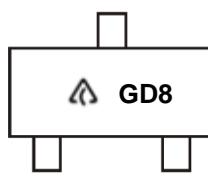
Notes:

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](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



 = Manufacturers' code marking  
 APT17Z-G1 = Product Type Marking ID  
 YWW = Date Code Marking  
 e.g. 312 = Year 2013, Week 12  
 8 = Assembly site code  
 XX = Batch Number



 = Manufacturers' code marking  
 GD8 = Product Type Marking ID

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

Characteristic	Symbol	Value	Unit
Collector-Emitter Voltage ( $V_{BE} = 0\text{V}$ )	$V_{CES}$	700	V
Collector-Emitter Voltage	$V_{CEO}$	480	V
Emitter-Base Voltage	$V_{EBO}$	10	V
Continuous Collector Current	$I_C$	50	mA
Peak Pulse Collector Current	$I_{CM}$	100	mA
Continuous Base Current	$I_B$	25	mA
Peak Pulse Base Current	$I_{BM}$	50	mA

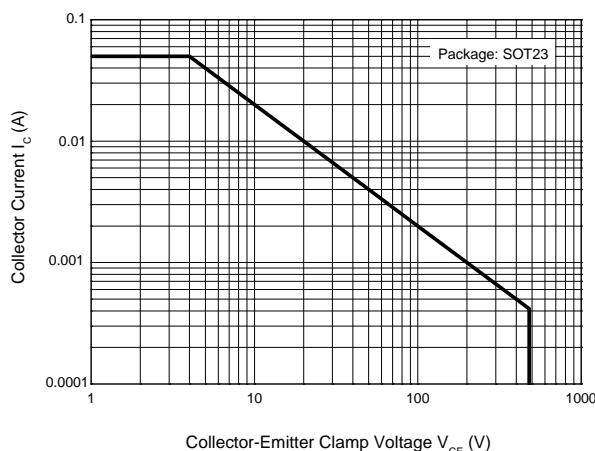
**Thermal Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation	For TO92	0.5	W
	For SOT23	0.2	
Thermal Resistance, Junction to Ambient Air	For TO92	250	°C/W
	For SOT23	625	
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	°C

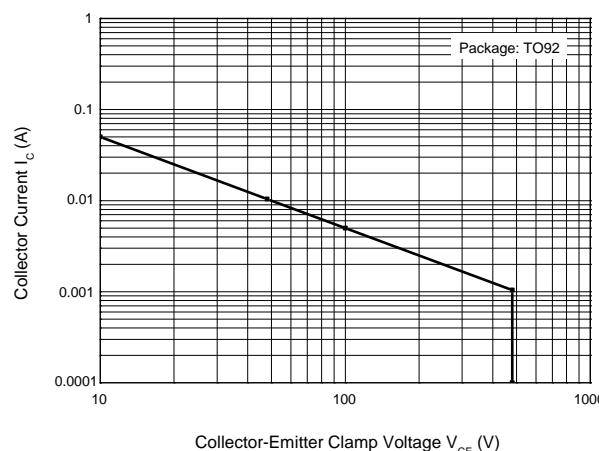
**ESD Ratings** (Note 5)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	8,000	V	3B
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

Note: 5. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

**Safe Operating Area** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)


Safe Operating Areas

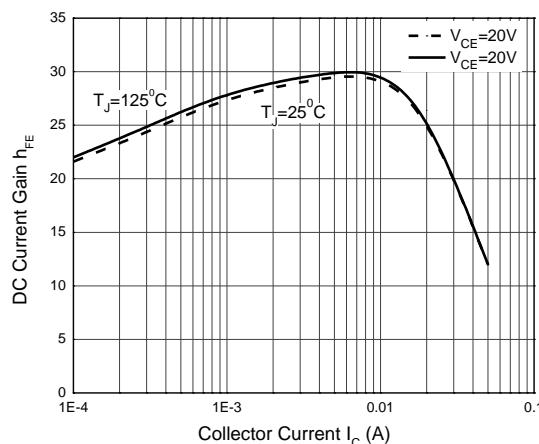


Safe Operating Areas

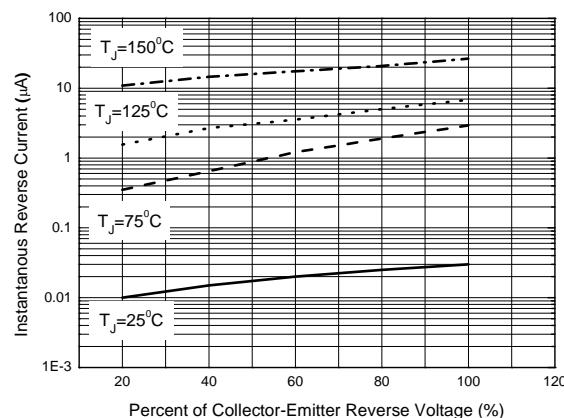
**Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Min	Max	Unit	Test Condition
Collector-Emitter Breakdown Voltage	$\text{BV}_{\text{CES}}$	700	—	V	$I_C = 100\mu\text{A}$ , $V_{\text{BE}} = 0\text{V}$
Collector-Emitter Breakdown Voltage	$\text{BV}_{\text{CEO}}$	480	—	V	$I_C = 300\mu\text{A}$
Emitter-Base Breakdown Voltage	$\text{BV}_{\text{EBO}}$	10	—	V	$I_E = 100\mu\text{A}$
Collector Cutoff Current	$I_{\text{CEV}}$	—	10	$\mu\text{A}$	$V_{\text{CE}} = 700\text{V}$ , $V_{\text{BE}} = -1.5\text{V}$
DC Current Transfer Static Ratio (Note 6)	$h_{\text{FE}}$	21 24.5 20	36.5 35.5 45.5	—	$I_C = 100\mu\text{A}$ , $V_{\text{CE}} = 20\text{V}$ $I_C = 500\mu\text{A}$ , $V_{\text{CE}} = 20\text{V}$ $I_C = 10\text{mA}$ , $V_{\text{CE}} = 20\text{V}$

Note: 6. Measured under pulsed conditions. Pulse width  $\leq 300\mu\text{s}$ . Duty cycle  $\leq 2\%$ .

**Typical Electrical Characteristics**


DC Current Gain

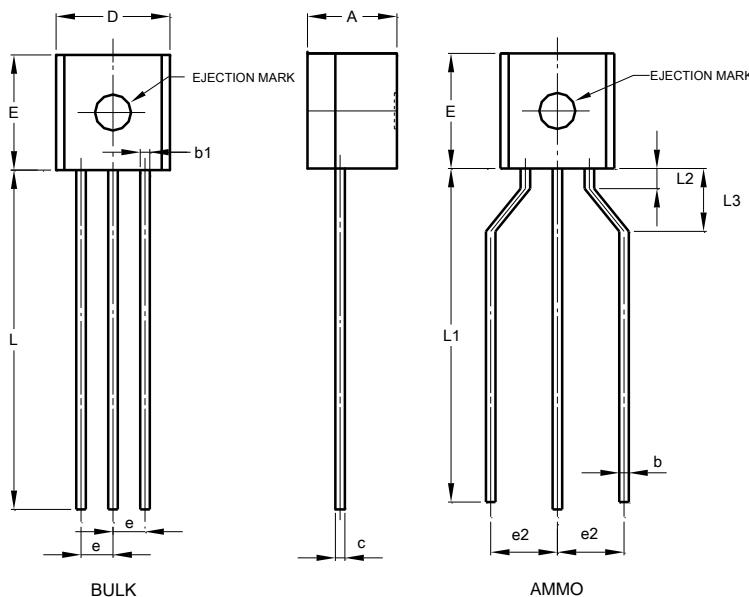


Typical Reverse Characteristics

## Package Outline Dimensions

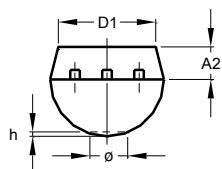
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.

### (1) Package Type: TO92 Type C

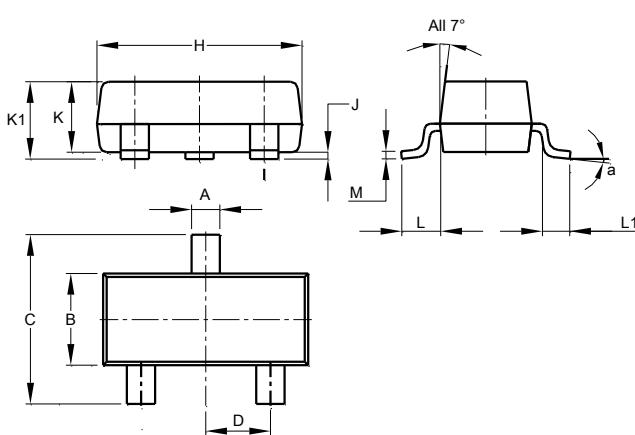


TO92 Type C			
Dim	Min	Max	Typ
<b>A</b>	3.30	3.70	-
<b>A2</b>	1.10	1.40	-
<b>b</b>	0.38	0.55	-
<b>c</b>	0.36	0.51	-
<b>D</b>	4.40	4.70	-
<b>D1</b>	3.430	-	-
<b>E</b>	4.30	4.70	-
<b>e</b>	-	-	1.27
<b>e2</b>	2.440	2.640	-
<b>h</b>	0.00	0.38	-
<b>L</b>	14.10	14.50	-
<b>L1</b>	12.50	14.50	-
<b>L3</b>	2.50	3.50	-
<b>Ø</b>	-	1.60	-

All Dimensions in mm



### (2) Package Type: SOT23



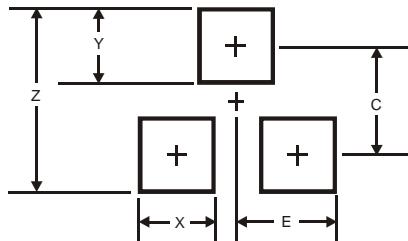
SOT23			
Dim	Min	Max	Typ
<b>A</b>	0.37	0.51	0.40
<b>B</b>	1.20	1.40	1.30
<b>C</b>	2.30	2.50	2.40
<b>D</b>	0.89	1.03	0.915
<b>F</b>	0.45	0.60	0.535
<b>G</b>	1.78	2.05	1.83
<b>H</b>	2.80	3.00	2.90
<b>J</b>	0.013	0.10	0.05
<b>K</b>	0.890	1.00	0.975
<b>K1</b>	0.903	1.10	1.025
<b>L</b>	0.45	0.61	0.55
<b>L1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

All Dimensions in mm

## Suggested Pad Layout

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

**(1) Package Type: SOT23**



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

Note: For high voltage applications, the appropriate industry sector guidelines should be considered with regards to voltage spacing between terminals.

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