

### Absolute Maximum Ratings NPN Section (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Supply Voltage <Pin: (6) to (1)>	V <sub>CC</sub>	50	V
Input Voltage <Pin: (2) to (1)>	V <sub>IN</sub>	-10 to +40	V
Output Current	I <sub>O</sub>	50	mA
Output Current	I <sub>C</sub> (Max)	100	mA

### Absolute Maximum Ratings PNP Section (@T<sub>A</sub> = +25°C, unless otherwise specified.)

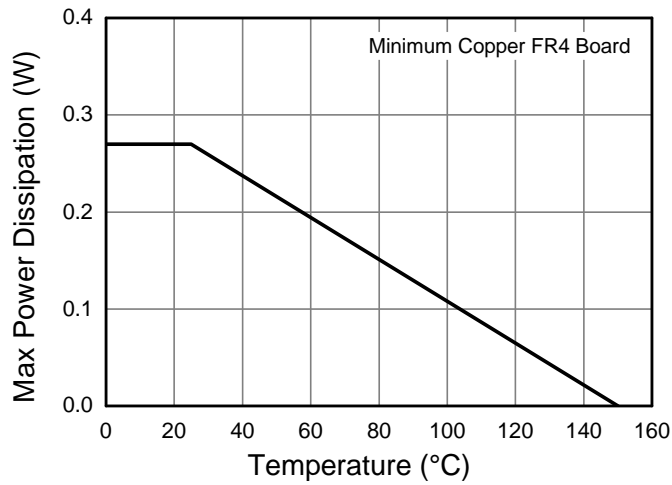
Characteristic	Symbol	Value	Unit
Supply Voltage <Pin: (4) to (3)>	V <sub>CC</sub>	-50	V
Input Voltage <Pin: (5) to (4)>	V <sub>IN</sub>	+10 to -40	V
Output Current	I <sub>O</sub>	-50	mA
Output Current	I <sub>C</sub> (Max)	-100	mA

### Thermal Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

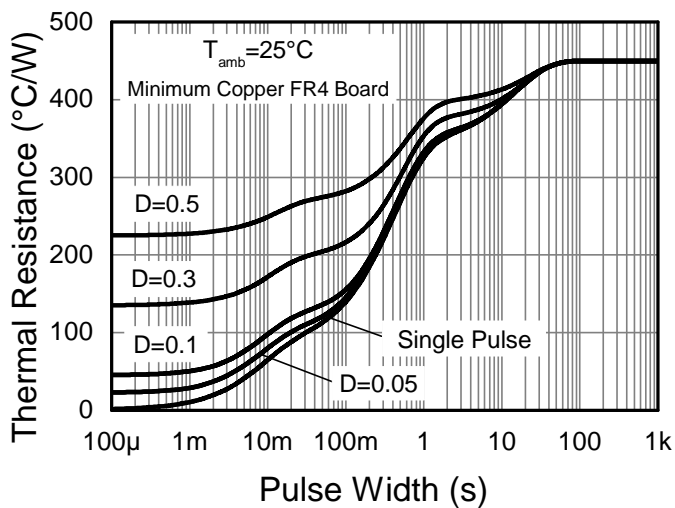
Characteristic	Symbol	Value	Unit
Power Dissipation (Notes 6 & 7)	P <sub>D</sub>	270	mW
Thermal Resistance, Junction to Ambient Air (Note 6)	R <sub>θJA</sub>	450	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

Notes: 6. Mounted on FR4 PC Board with minimum recommended pad layout  
7. 150mW per element must not be exceeded.

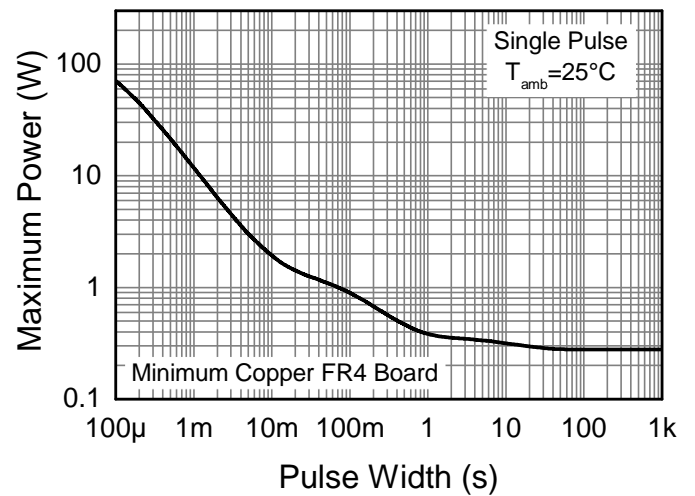
## Thermal Characteristics and Derating Information



**Derating Curve**



**Transient Thermal Impedance**



**Pulse Power Dissipation**

**Electrical Characteristics NPN Section** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	V <sub>I(OFF)</sub> (Note 8)	0.5	1.1	—	V	V <sub>CC</sub> = 5V, I <sub>O</sub> = 100μA
	V <sub>I(ON)</sub> (Note 9)	—	1.9	3.0		V <sub>O</sub> = 0.3V, I <sub>O</sub> = 10mA
Output Voltage	V <sub>O(ON)</sub>	—	0.1	0.3	V	I <sub>O</sub> /I <sub>I</sub> = 10mA / 0.5mA
Input Current	I <sub>I</sub>	—	—	0.88	mA	V <sub>I</sub> = 5V
Output Current	I <sub>O(OFF)</sub>	—	—	0.5	μA	V <sub>CC</sub> = 50V, V <sub>I</sub> = 0V
DC Current Gain	G <sub>I</sub>	30	—	—	—	V <sub>O</sub> = 5V, I <sub>O</sub> = 5mA
Input Resistor (R <sub>1</sub> ) Tolerance	ΔR <sub>1</sub>	-30	—	+30	%	—
Resistance Ratio Tolerance	ΔR <sub>2</sub> /R <sub>1</sub>	-20	—	+20	%	—
Gain-Bandwidth Product (Note 10)	f <sub>T</sub>	—	250	—	MHz	V <sub>CE</sub> = 10V, I <sub>E</sub> = 5mA, f = 100MHz

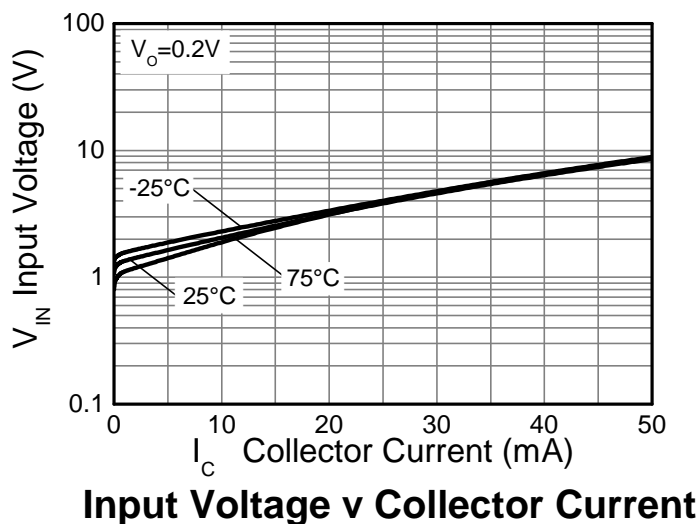
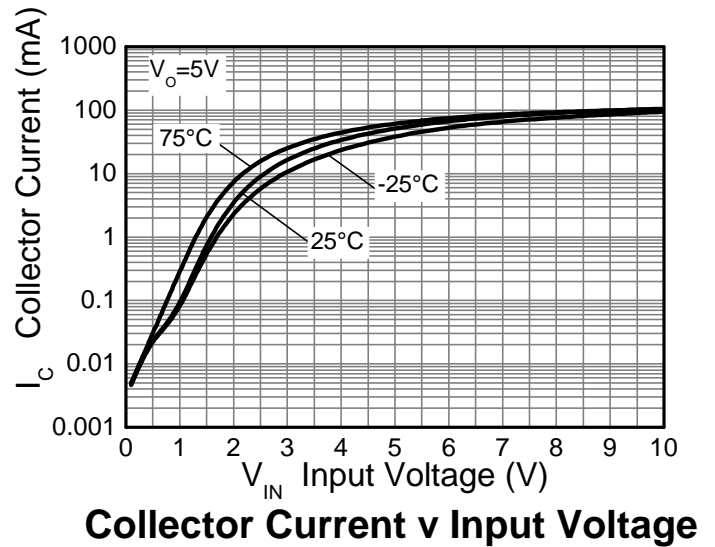
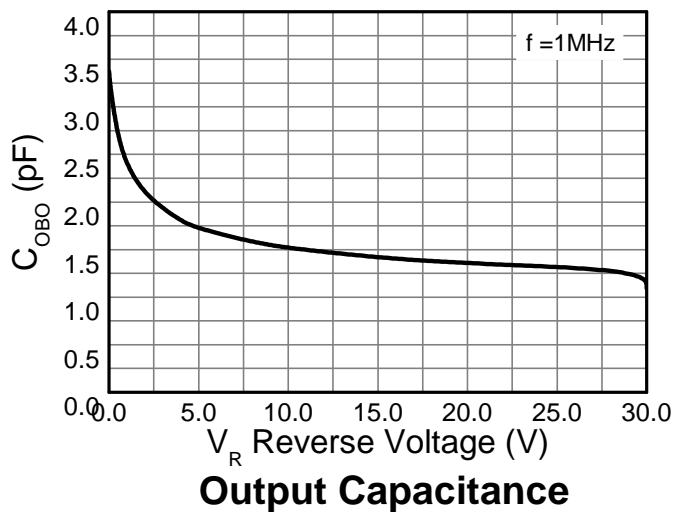
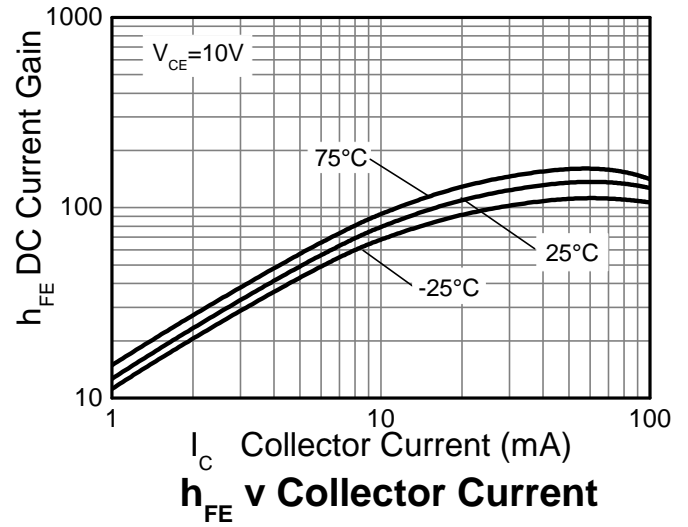
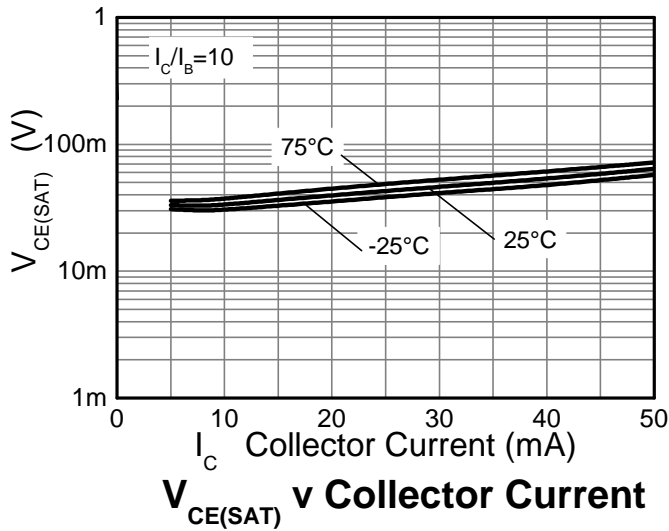
Notes: 8. Guarantees that the device will be switched OFF if the Input Voltage is less than 0.5V.  
9. Guarantees that the device will be switched ON if the Input Voltage is more than 3V.  
10. Transistor - For Reference Only.

**Electrical Characteristics PNP Section** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

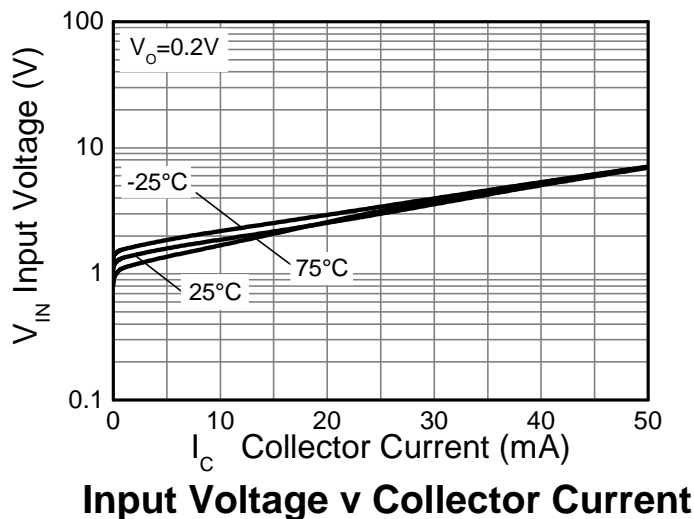
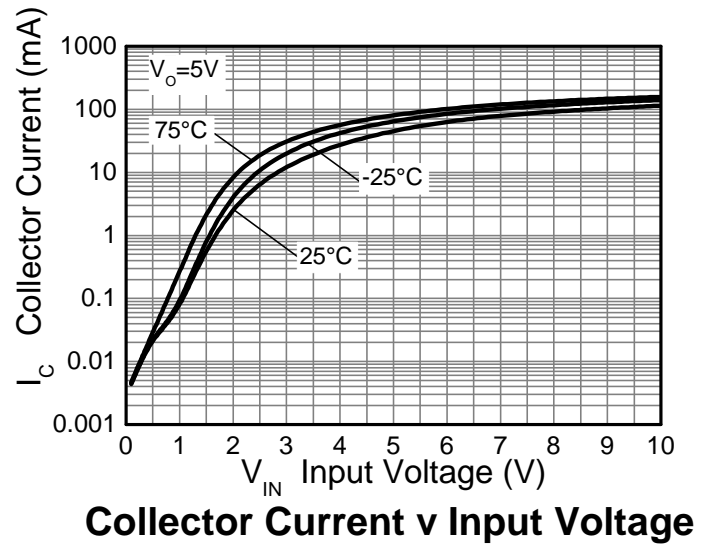
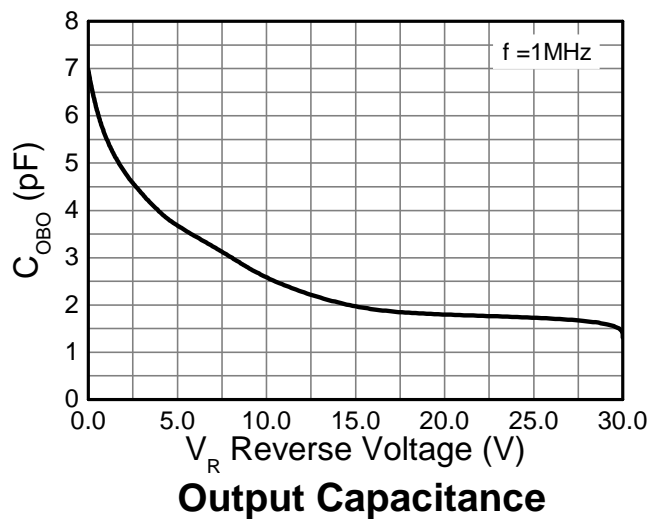
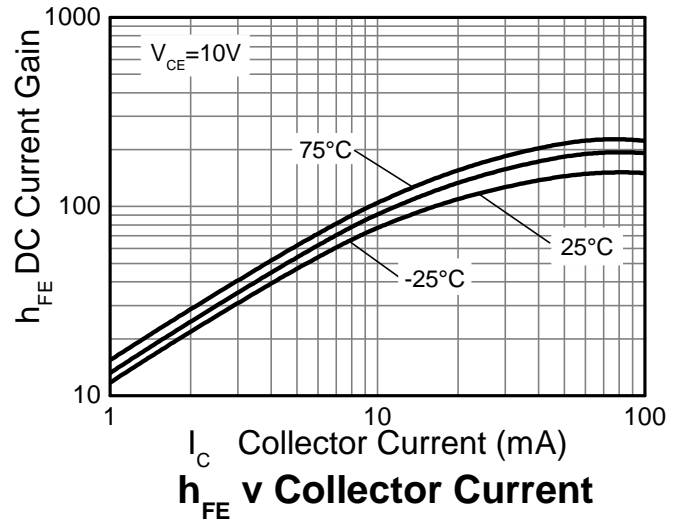
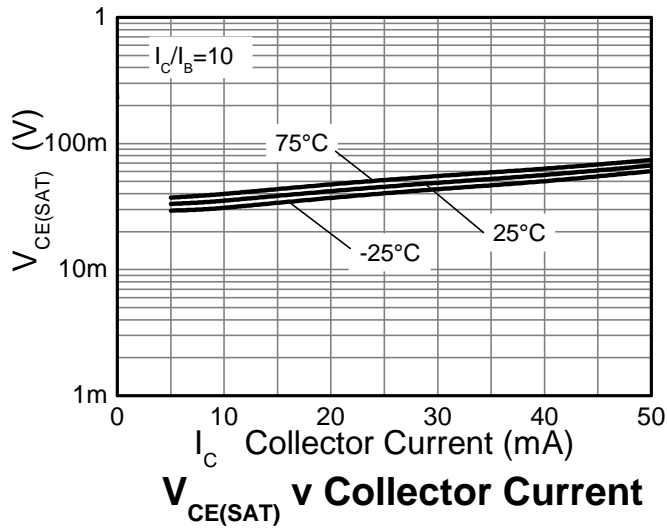
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	V <sub>I(OFF)</sub> (Note 11)	-0.5	-1.1	—	V	V <sub>CC</sub> = -5V, I <sub>O</sub> = -100μA
	V <sub>I(ON)</sub> (Note 12)	—	-1.9	-3.0		V <sub>O</sub> = -0.3V, I <sub>O</sub> = -10mA
Output Voltage	V <sub>O(ON)</sub>	—	-0.1	-0.3	V	I <sub>O</sub> /I <sub>I</sub> = -10mA / -0.5mA
Input Current	I <sub>I</sub>	—	—	-0.88	mA	V <sub>I</sub> = -5V
Output Current	I <sub>O(OFF)</sub>	—	—	-0.5	μA	V <sub>CC</sub> = 50V, V <sub>I</sub> = 0V
DC Current Gain	G <sub>I</sub>	30	—	—	—	V <sub>O</sub> = -5V, I <sub>O</sub> = -5mA
Input Resistor (R <sub>1</sub> ) Tolerance	ΔR <sub>1</sub>	-30	—	+30	%	—
Resistance Ratio Tolerance	ΔR <sub>2</sub> /R <sub>1</sub>	-20	—	+20	%	—
Gain-Bandwidth Product (Note 10)	f <sub>T</sub>	—	250	—	MHz	V <sub>CE</sub> = -10V, I <sub>E</sub> = -5mA, f = 100MHz

Notes: 11. Guarantees that the device will be switched OFF if the Input Voltage is less than -0.5V.  
12. Guarantees that the device will be switched ON if the Input Voltage is more than -3V.

**Typical Curves – NPN Section** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)



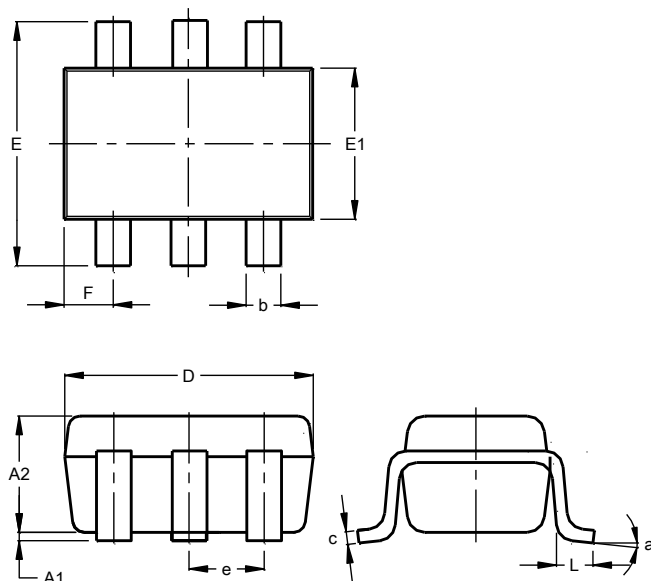
**Typical Curves – PNP Section** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)



## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### SOT363

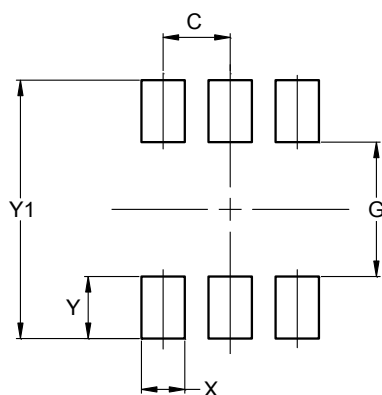


SOT363			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	1.00
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### SOT363



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.420
Y	0.600
Y1	2.500

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