





## PNP SILICON PLANAR HIGH VOLTAGE TRANSISTOR

### **Features**

- Excellent hFE Characteristics up to IC = 50mA
- Low Saturation Voltages
- Lead, Halogen and Antimony Free, RoHS Compliant (Note 1)
- "Green" Device (Note 2)

### **Mechanical Data**

- Case: SOT-23
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Matte Tin Finish annealed over Copper leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.008 grams (approximate)



Top View





Pin Configuration

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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	-500	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-500	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Continuous Collector Current	Ic	-150	mA
Peak Pulse Current	I <sub>CM</sub>	-500	mA

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation	$P_{D}$	500	mW
Operating and Storage Temperature Range	$T_{J_i} T_{STG}$	-55 to +150	°C

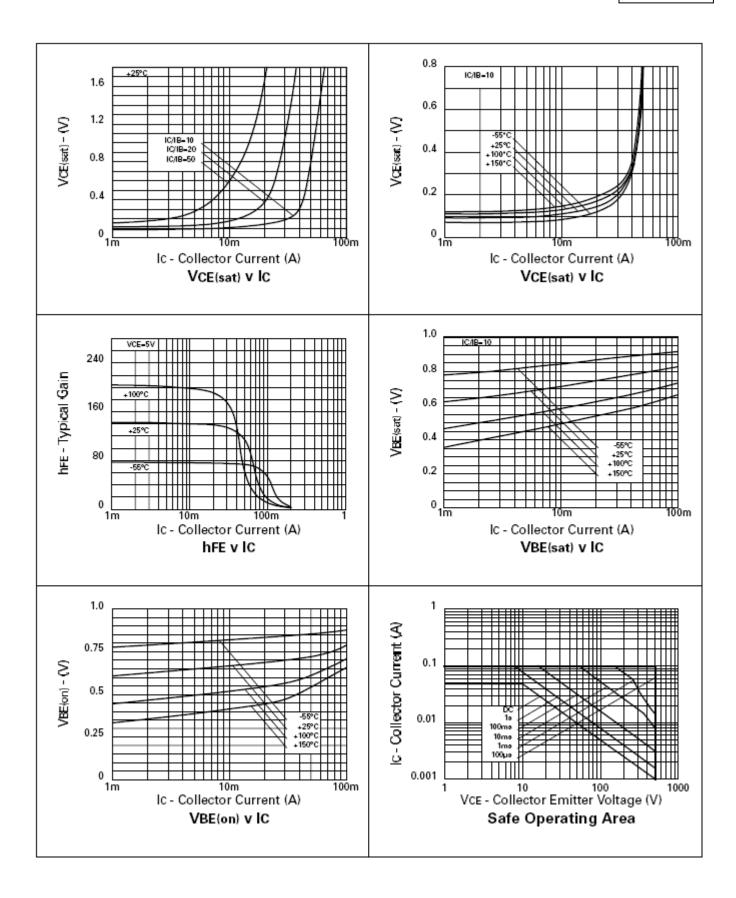
## Electrical Characteristics @TA = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
OFF CHARACTERISTICS					·	
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	-500	_	_	V	$I_C = -100 \mu A$
Collector-Emitter Breakdown Voltage (Note 3)	V <sub>(BR)CEO</sub>	-500	_	_	V	I <sub>C</sub> = -10mA
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	-5	_	_	V	$I_E = 100 \mu A$
Collector Cutoff Current	I <sub>CBO</sub> ; I <sub>CES</sub>	_	_	-100	nA	$V_{CB} = -500V, V_{CE} = -500V$
Emitter Cutoff Current	I <sub>EBO</sub>	_	_	-100	nA	$V_{EB} = -5V$
ON CHARACTERISTICS (Note 3)						
DC Current Gain	h <sub>FE</sub>	100 80 —	— — 15	300 300 —	_	$I_{C}$ = -1mA, $V_{CE}$ = -10V $I_{C}$ = -50mA, $V_{CE}$ = -10V $I_{C}$ = -100mA, $V_{CE}$ = -10V
Collector-Emitter Saturation Voltage	V <sub>CE</sub> (SAT)	_	_	-0.2 -0.5	V	$I_C = -20 \text{mA}, I_B = -2 \text{mA}$ $I_C = -50 \text{mA}, I_B = -10 \text{mA}$
Base-Emitter Turn-On Voltage	V <sub>BE(ON)</sub>	_	_	-0.9	V	$I_C = -50 \text{mA}, V_{CE} = -10 \text{V}$
Base-Emitter Saturation Voltage	V <sub>BE(SAT)</sub>	_	_	-0.9	V	$I_C = -50 \text{mA}, I_B = -10 \text{mA}$
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	$C_{obo}$	_	_	8	pF	$V_{CB} = -20V$ , $f = 1MHz$
Current Gain-Bandwidth Product	f <sub>T</sub>	60	_	_	MHz	$V_{CE} = -20V, I_{C} = -10mA,$ f = 50MHz
SWITCHING CHARACTERISTICS	SWITCHING CHARACTERISTICS					
Turn-On Time	t <sub>on</sub>	_	110	_	ns	$V_{CE} = -100V, I_{C} = -50mA,$
Turn-Off Time	t <sub>off</sub>	_	1.5	_	μS	$I_{B1} = -5mA$ , $I_{B2} = 10mA$

Notes:

- 1. No purposefully added lead. Halogen and Antimony Free.
- 2. Diodes Inc.'s "Green" Policy can be found on our website at http://www.diodes.com/products/lead\_free/index.php.
- 3. Measured under pulsed conditions. Pulse width = 300µs. Duty cycle ≤2%





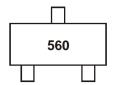


# Ordering Information (Note 4)

Ī	Part Number	Case	Packaging
	FMMT560TA	SOT-23	3000/Tape & Reel

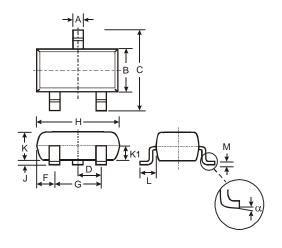
Notes: 4. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

## **Marking Information**



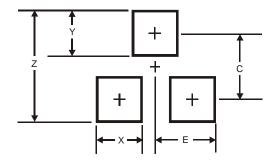
560 = Product Type Marking Code

# **Package Outline Dimensions**



SOT-23				
Dim	Min	Max	Тур	
Α	0.37	0.51	0.40	
В	1.20	1.40	1.30	
С	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	
Н	2.80	3.00	2.90	
J	0.013	0.10	0.05	
K	0.903	1.10	1.00	
<b>K</b> 1	-	-	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
Х	0.8
Υ	0.9
С	2.0
E	1.35





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