

**PNP SILICON PLANAR HIGH VOLTAGE TRANSISTOR**

**Features**

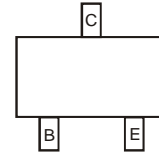
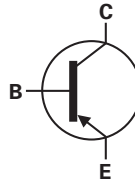
- Excellent  $h_{FE}$  Characteristics up to  $I_C = 50\text{mA}$
- Low Saturation Voltages
- **Lead, Halogen and Antimony Free, RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**

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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	-500	V
Collector-Emitter Voltage	$V_{CEO}$	-500	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Continuous Collector Current	$I_C$	-150	mA
Peak Pulse Current	$I_{CM}$	-500	mA

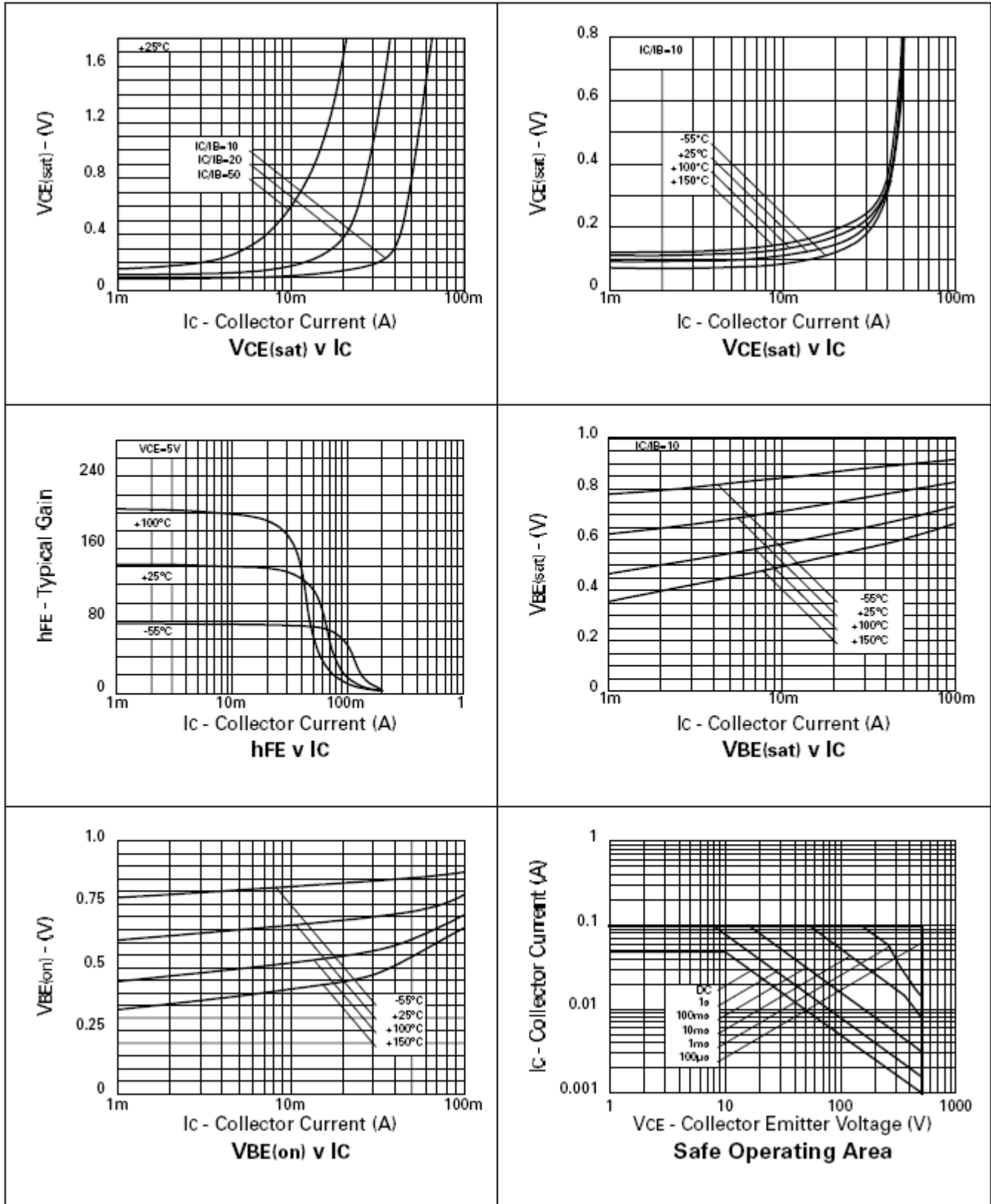
**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation	$P_D$	500	mW
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

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

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

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](http://www.diodes.com/products/lead_free/index.php).  
3. Measured under pulsed conditions. Pulse width = 300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$

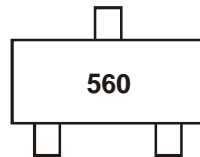


**Ordering Information** (Note 4)

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

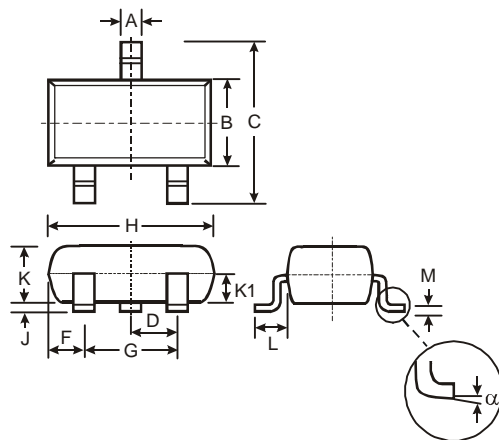
Notes: 4. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



560 = Product Type Marking Code

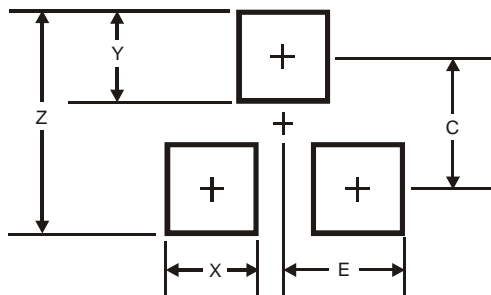
**Package Outline Dimensions**



SOT-23			
Dim	Min	Max	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
$\alpha$	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

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