

**FMMT549 / FMMT549A**

**30V PNP SILICON PLANAR HIGH VOLTAGE TRANSISTOR IN SOT23**

**Features and Benefits**

- $BV_{CEO} > -30V$
- Maximum Continuous Collector Current  $I_C = -1A$
- 500mW power dissipation
- Complementary type:
  - FMMT549 – FMMT449
  - FMMT549A – N/A
- **Lead Free, RoHS Compliant (Note 1)**
- **Halogen and Antimony Free "Green" Device (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

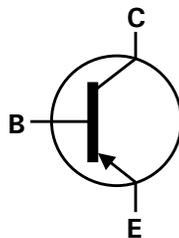
**Mechanical Data**

- Case: SOT23
- UL Flammability Rating 94V-0
- Case material: molded Plastic.
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish; Solderable per MIL-STD-202, Method 208
- Weight: 0.008 grams (Approximate)

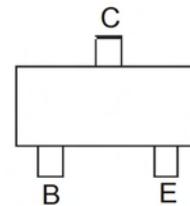
SOT23



Top View



Device Symbol



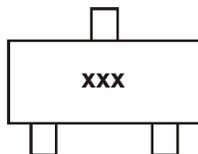
Top View  
Pin-Out

**Ordering Information** (Note 3)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
FMMT549TA	549	7	8	3,000
FMMT549ATA	59A	7	8	3,000

- 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**



xxx = Product Type Marking Code  
 FMMT549: xxx = 549  
 FMMT549A: xxx = 59A

**FMMT549 / FMMT549A**

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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CB0</sub>	-35	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-30	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Continuous Collector Current	I <sub>C</sub>	-1	A
Peak Pulse Current	I <sub>CM</sub>	-2	A
Base Current	I <sub>B</sub>	-200	mA

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

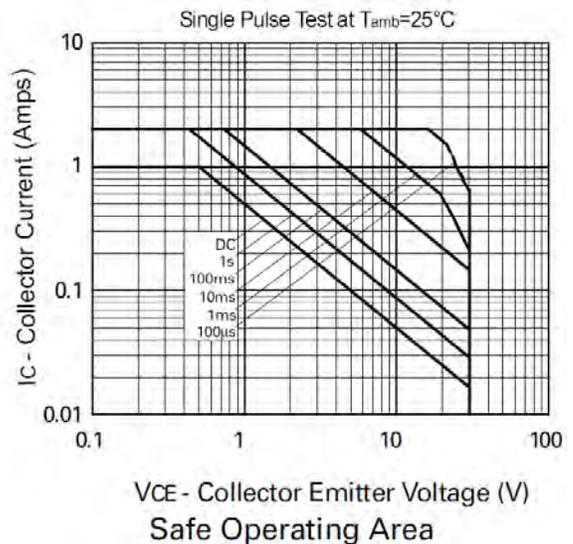
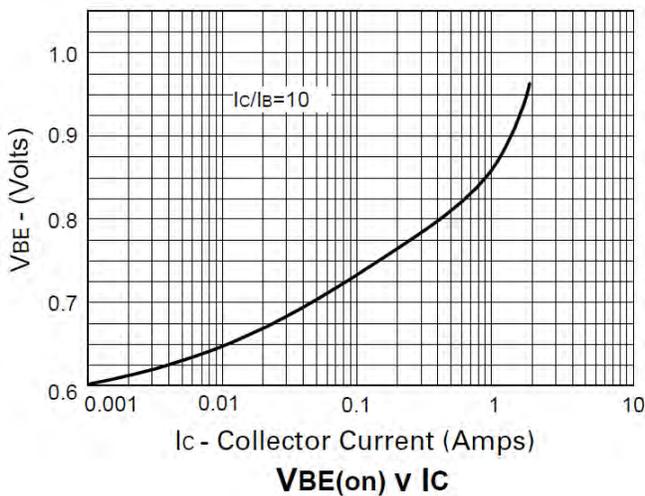
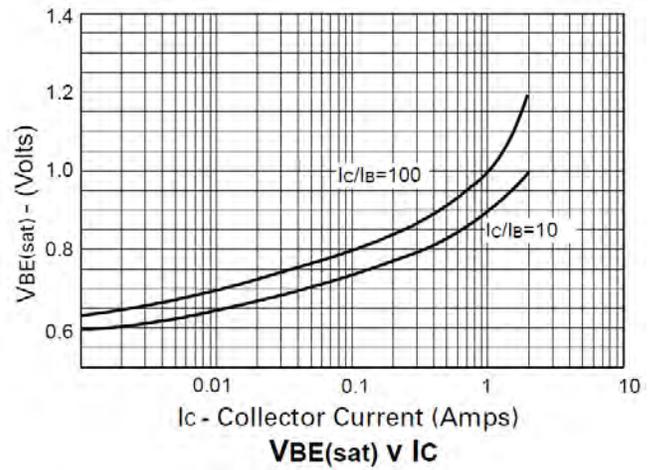
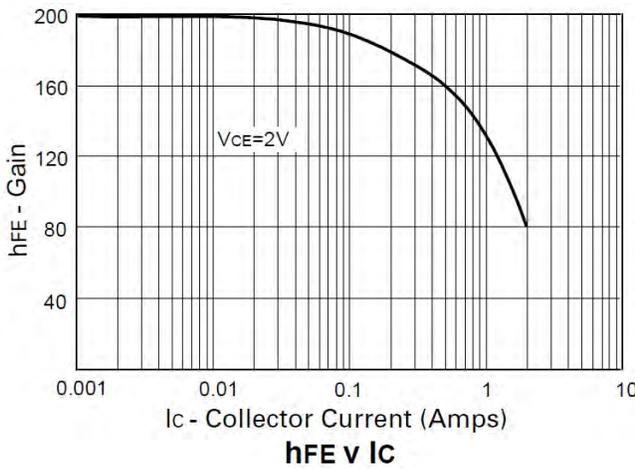
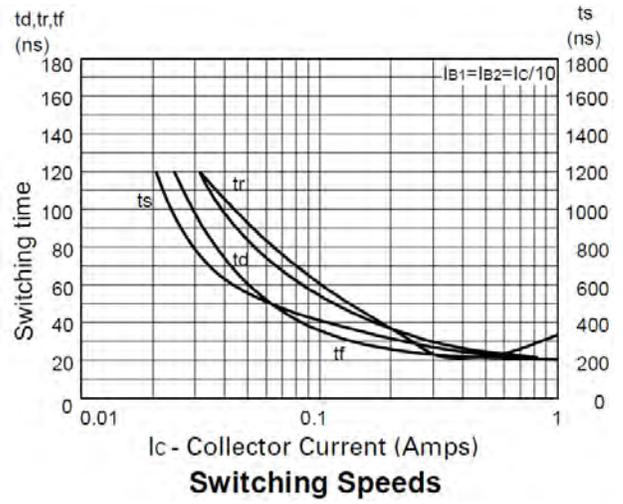
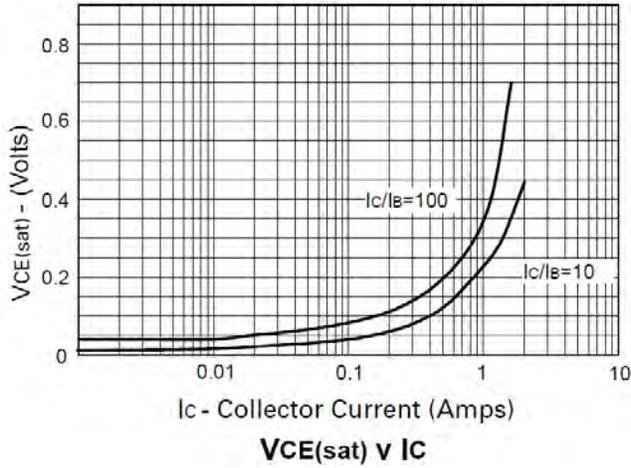
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 4)	P <sub>D</sub>	500	mW
Thermal Resistance, Junction to Ambient (Note 4)	R <sub>θJA</sub>	250	°C/W
Thermal Resistance, Junction to Lead (Note 5)	R <sub>θJL</sub>	197	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV <sub>CB0</sub>	-35	-	-	V	I <sub>C</sub> = -100μA
Collector-Emitter Breakdown Voltage (Note 6)	BV <sub>CEO</sub>	-30	-	-	V	I <sub>C</sub> = -10mA
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	-5	-	-	V	I <sub>E</sub> = -100μA
Collector Cutoff Current	I <sub>CB0</sub>	-	-	-0.1	μA	V <sub>CB</sub> = -30V
		-	-	-10		V <sub>CB</sub> = -30V, T <sub>A</sub> = 100°C
Emitter Cutoff Current	I <sub>EBO</sub>	-	-	-0.1	μA	V <sub>EB</sub> = -4V
Static Forward Current Transfer Ratio (Note 6)	h <sub>FE</sub>	70	200	-	-	I <sub>C</sub> = -50mA, V <sub>CE</sub> = -2V
		80	130	-		I <sub>C</sub> = -1A, V <sub>CE</sub> = -2V
		40	80	-		I <sub>C</sub> = -2A, V <sub>CE</sub> = -2V
		100	160	300		I <sub>C</sub> = -500mA, V <sub>CE</sub> = -2V
		150	200	500	-	I <sub>C</sub> = -500mA, V <sub>CE</sub> = -2V
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	-	-250	-500	mV	I <sub>C</sub> = -1A, I <sub>B</sub> = -100mA
		-	-500	-750		I <sub>C</sub> = -2A, I <sub>B</sub> = -200mA
		-	-	-300	mV	I <sub>C</sub> = -100mA, I <sub>B</sub> = -1mA
Base-Emitter Saturation Voltage (Note 6)	V <sub>BE(sat)</sub>	-	-900	-1250	mV	I <sub>C</sub> = -1A, I <sub>B</sub> = -100mA
Base-Emitter Turn-On Voltage (Note 6)	V <sub>BE(on)</sub>	-	-850	-1000	mV	I <sub>C</sub> = -1A, V <sub>CE</sub> = -2V
Output Capacitance	C <sub>obo</sub>	-	-	25	pF	V <sub>CB</sub> = -10V, f = 1MHz
Transition Frequency	f <sub>T</sub>	100	-	-	MHz	V <sub>CE</sub> = -5V, I <sub>C</sub> = -100mA, f = 100MHz
Switching Times	t <sub>on</sub>	-	50	-	ns	I <sub>C</sub> = -500mA, V <sub>CC</sub> = -10V
	t <sub>off</sub>	-	300	-	ns	I <sub>B1</sub> = I <sub>B2</sub> = -50mA

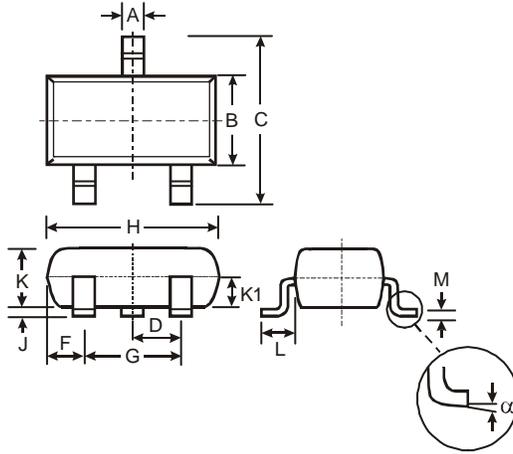
- Notes:
4. For a device surface mounted FR4 PCB with minimum recommended pad layout; high coverage of single sided 1 oz copper, in still air conditions; the device is measured when operating in a steady-state condition.
  5. Thermal resistance from junction to solder-point (at the end of the collector lead).
  6. Measured under pulsed conditions. Pulse width ≤ 300 μs. Duty cycle ≤ 2%

**Typical Electrical Characteristics**



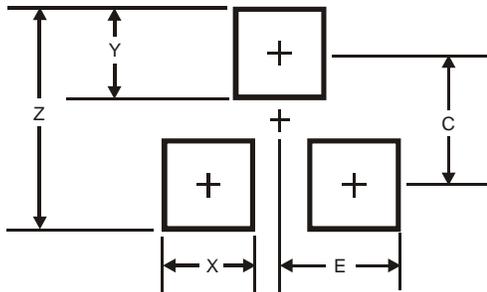
**FMMT549 / FMMT549A**

**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

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