

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**

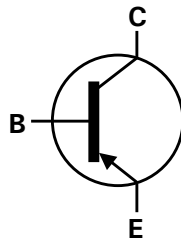
Mechanical Data

- 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)

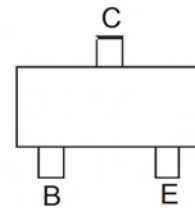
SOT23



Top View



Device Symbol



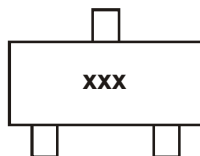
Top View
Pin-Out

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_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	-35	V
Collector-Emitter Voltage	V _{CEO}	-30	V
Emitter-Base Voltage	V _{EBO}	-5	V
Continuous Collector Current	I _C	-1	A
Peak Pulse Current	I _{CM}	-2	A
Base Current	I _B	-200	mA

Thermal Characteristics @T_A = 25°C unless otherwise specified

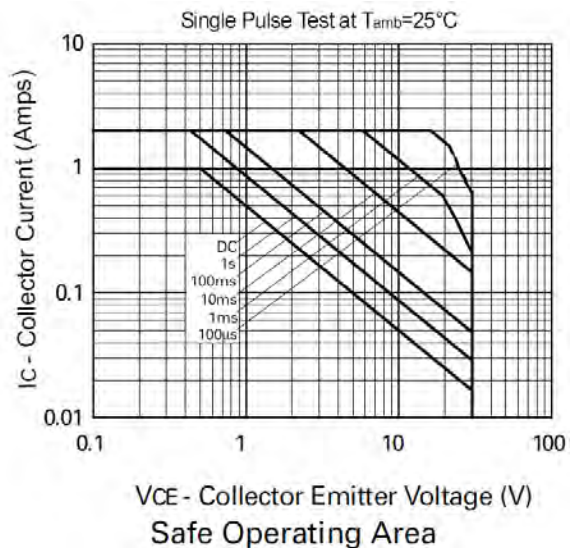
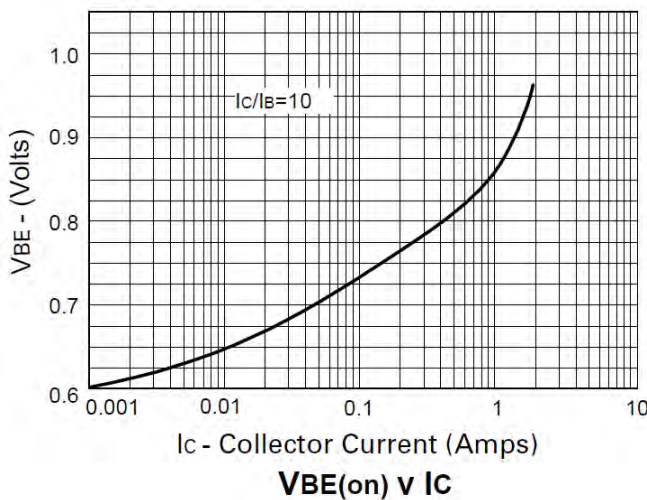
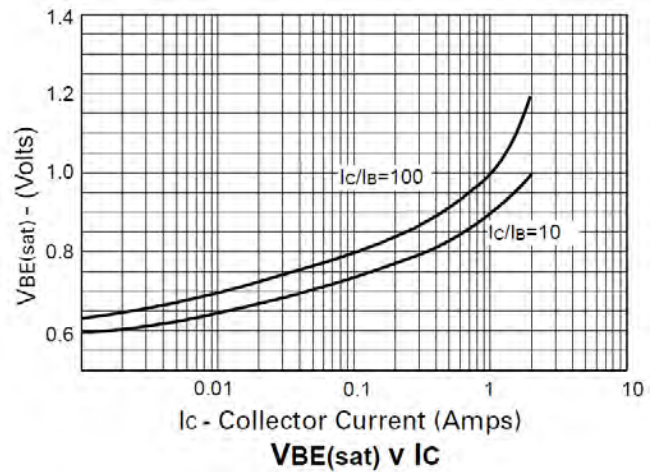
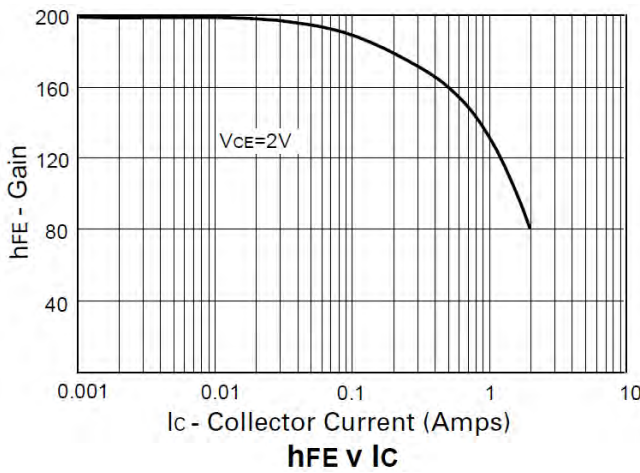
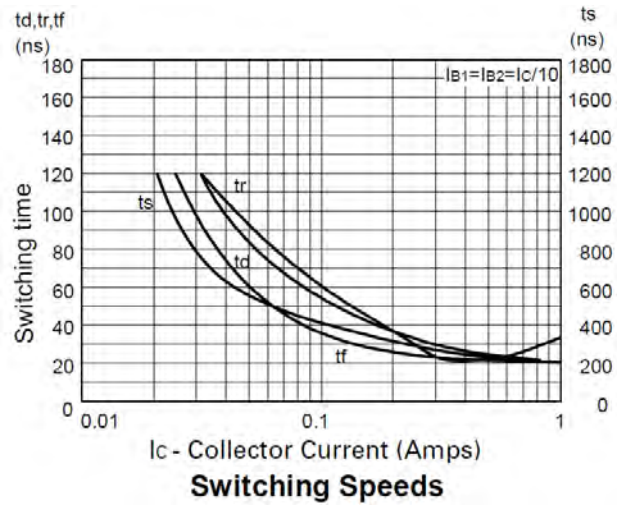
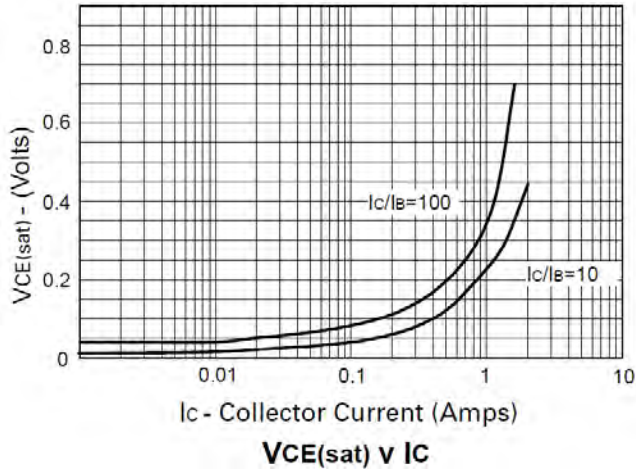
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 4)	P _D	500	mW
Thermal Resistance, Junction to Ambient (Note 4)	R _{θJA}	250	°C/W
Thermal Resistance, Junction to Lead (Note 5)	R _{θJL}	197	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CB0}	-35	-	-	V	I _C = -100μA
Collector-Emitter Breakdown Voltage (Note 6)	BV _{CEO}	-30	-	-	V	I _C = -10mA
Emitter-Base Breakdown Voltage	BV _{EBO}	-5	-	-	V	I _E = -100μA
Collector Cutoff Current	I _{CB0}	-	-	-0.1	μA	V _{CB} = -30V
		-	-	-10		V _{CB} = -30V, T _A = 100°C
Emitter Cutoff Current	I _{EBO}	-	-	-0.1	μA	V _{EB} = -4V
Static Forward Current Transfer Ratio (Note 6)	h _{FE}	70	200	-	-	I _C = -50mA, V _{CE} = -2V
		80	130	-	-	I _C = -1A, V _{CE} = -2V
		40	80	-	-	I _C = -2A, V _{CE} = -2V
		100	160	300	-	I _C = -500mA, V _{CE} = -2V
	FMMT549A	150	200	500	-	I _C = -500mA, V _{CE} = -2V
Collector-Emitter Saturation Voltage	V _{CE(sat)}	-	-250	-500	mV	I _C = -1A, I _B = -100mA
		-	-500	-750		I _C = -2A, I _B = -200mA
		-	-	-300	mV	I _C = -100mA, I _B = -1mA
Base-Emitter Saturation Voltage (Note 6)	V _{BE(sat)}	-	-900	-1250	mV	I _C = -1A, I _B = -100mA
Base-Emitter Turn-On Voltage (Note 6)	V _{BE(on)}	-	-850	-1000	mV	I _C = -1A, V _{CE} = -2V
Output Capacitance	C _{obo}	-	-	25	pF	V _{CB} = -10V, f = 1MHz
Transition Frequency	f _T	100	-	-	MHz	V _{CE} = -5V, I _C = -100mA, f = 100MHz
Switching Times	t _{on}	-	50	-	ns	I _C = -500mA, V _{CC} = -10V
	t _{off}	-	300	-	ns	I _{B1} = I _{B2} = -50mA

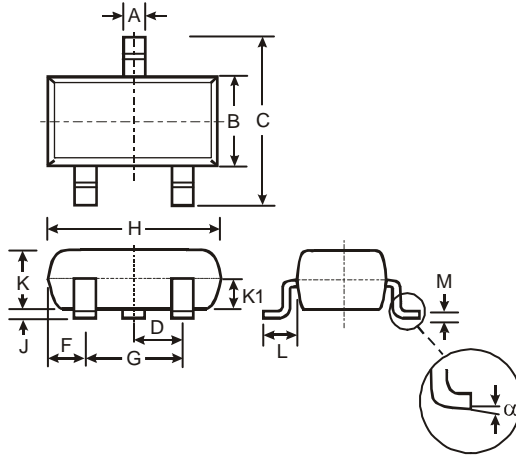
- Notes:
4. For a device surface mounted FR4 PCB with minimum recommended pad layout; high coverage of single sided 1 oz copper, in still air conditions; the device is measured when operating in a steady-state condition.
 5. Thermal resistance from junction to solder-point (at the end of the collector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

Typical Electrical Characteristics



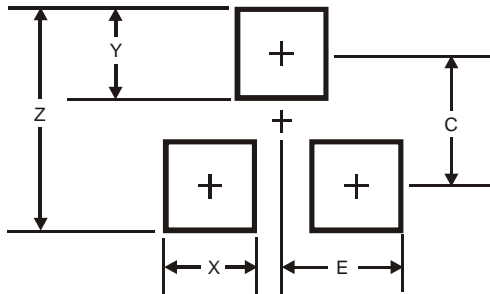
FMMT549 / FMMT549A

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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