



FMMT625

150V NPN SILICON LOW SATURATION TRANSISTOR IN SOT23

Features

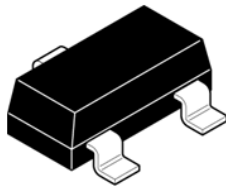
- $V_{CE0} = 150V$
- $I_C = 1A$
- 625mW Power dissipation
- Low Equivalent On Resistance
- Low Saturation Voltage
- h_{FE} characterised up to 3.0A
- **Lead, Halogen and Antimony Free, RoHS Compliant (Note 1)**
- **"Green" Devices (Note 2)**

Mechanical Data

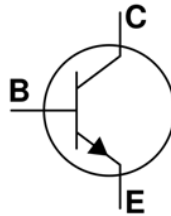
- Case: SOT-23
- Case material: molded Plastic. "Green" molding Compound.
- UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish
- Weight: 0.008 grams (Approximate)

Applications

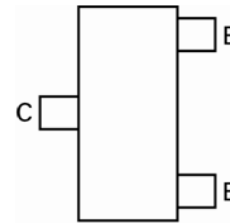
- DC-DC Modules
- Power Management Functions
- Motor control and drive functions



SOT-23



Device symbol



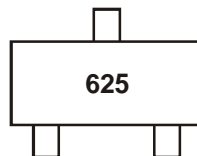
Pinout – top view

Ordering Information (Note 3)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
FMMT625TA	625	7	8mm embossed	3000 units

- Notes:
1. No purposefully added lead.
 2. Devices with the PID number starting from PID0155145 are 'Green' products. Halogen and Antimony Free.
 3. Diodes Incorporated's "Green" Policy can be found on our website at <https://www.diodes.com>.

Marking Information



625 = Product Type Marking Code

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

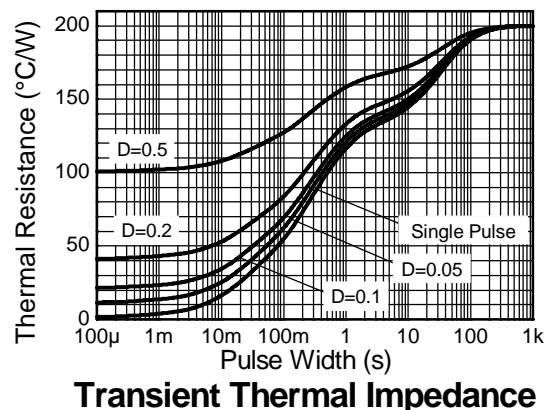
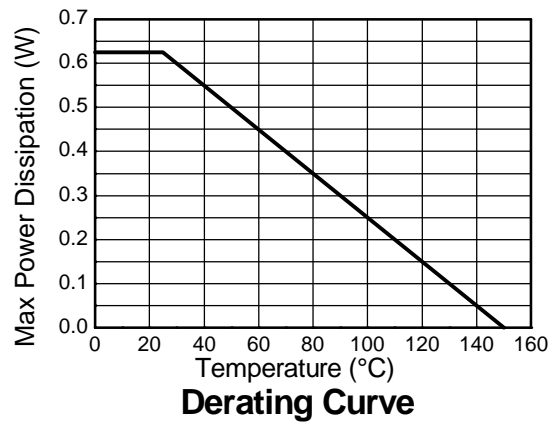
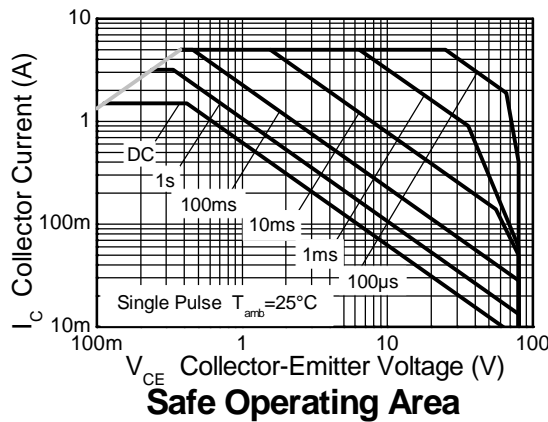
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CB0}	150	V
Collector-Emitter Voltage	V_{CEO}	150	V
Emitter-Base Voltage	V_{EBO}	5	V
Continuous Collector Current	I_C	1	A
Peak Pulse Current (Note 4)	I_{CM}	3	A
Base Current	I_B	500	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation at $T_A = 25^\circ\text{C}$ (Note 5)	P_D	625	mW
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Notes: 4. Measured under pulsed conditions. Pulse width = 300 μs . Duty cycle $\leq 2\%$.
5. For a device surface mounted on 25mm X 25mm FR4 PCB with high coverage of single sided 1 oz copper, in still air conditions

Thermal Characteristics and Derating information

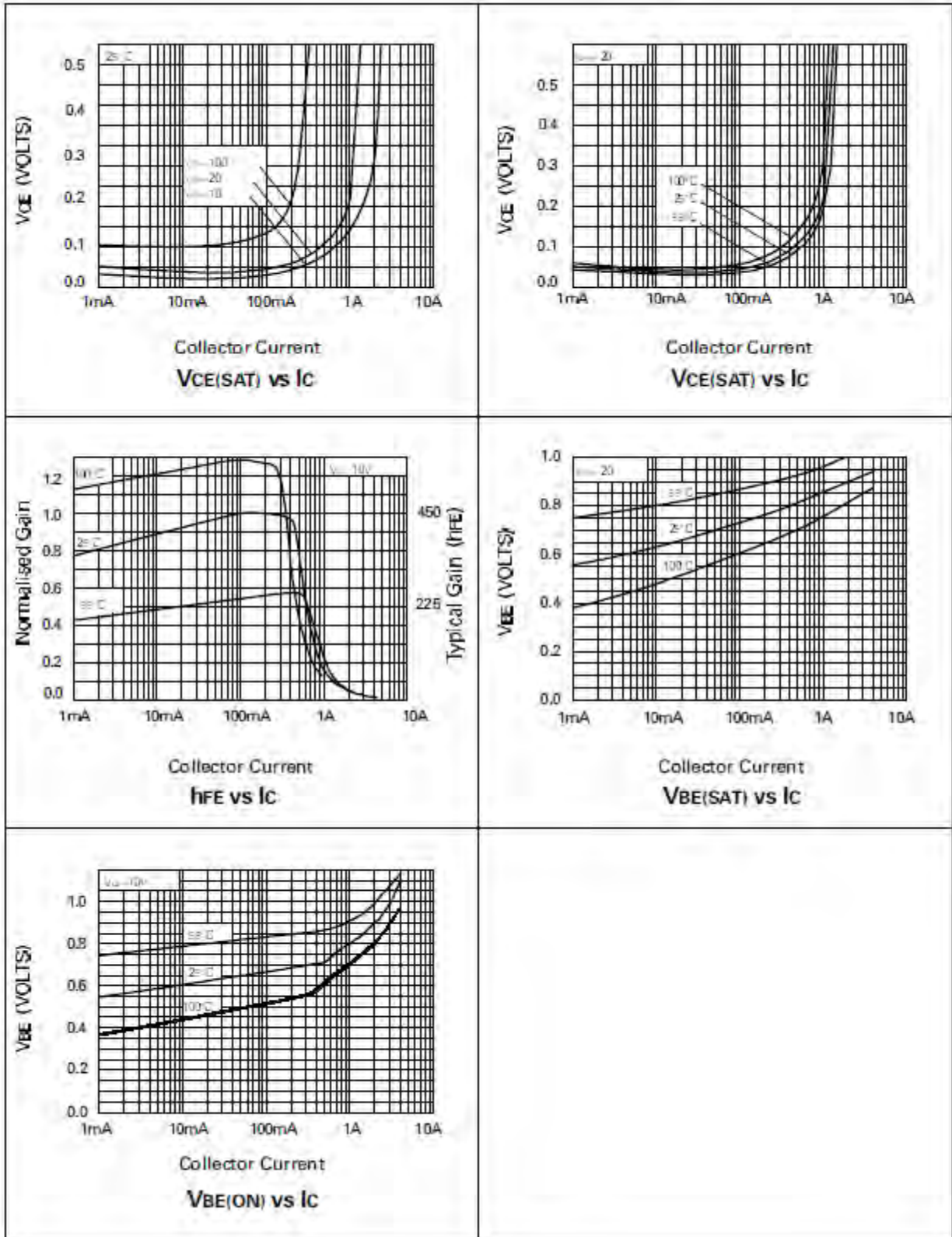


Electrical Characteristics @T_A = 25°C unless otherwise specified

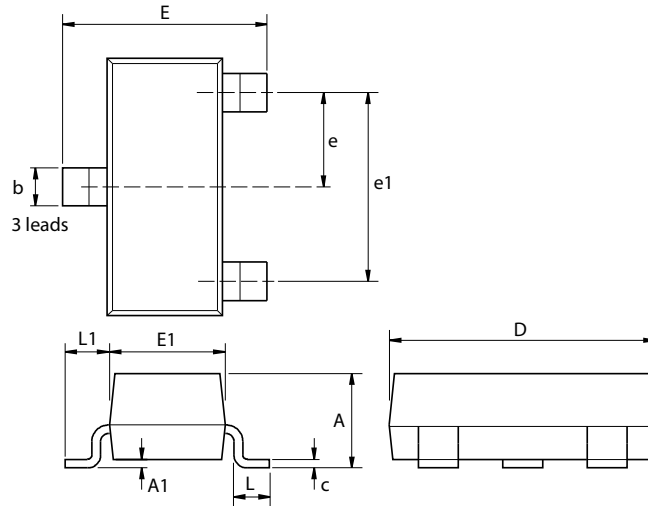
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	V _{(BR)CBO}	150	300	-	V	I _C = 100μA
Collector-Emitter Breakdown Voltage (Note 6)	V _{(BR)CEO}	150	175	-	V	I _C = 10mA
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	5	8.3	-	V	I _E = 100μA
Collector Cut-off Current	I _{CBO}	-	-	100	nA	V _{CB} = 130V
Emitter Cut-off Current	I _{EBO}	-	-	100	nA	V _{EB} = 4V
Collector Emitter Cut-off Current	I _{CES}	-	-	100	nA	V _{CES} = 130V
Static Forward Current Transfer Ratio (Note 6)	h _{FE}	200	400	-	-	I _C = 10mA, V _{CE} = 10V
		300	450	-		I _C = 200mA, V _{CE} = 10V
		30	45	-		I _C = 1A, V _{CE} = 10V
		-	15	-		I _C = 3A, V _{CE} = 10V
Collector-Emitter Saturation Voltage (Note 6)	V _{CE(sat)}	-	26	50	mV	I _C = 0.1A, I _B = 10mA
		-	110	200		I _C = 0.1A, I _B = 1mA
		-	180	300		I _C = 1A, I _B = 50mA
Base-Emitter Saturation Voltage (Note 6)	V _{BE(sat)}	-	0.85	1.0	V	I _C = 1A, I _B = 50mA
Base-Emitter Saturation Voltage (Note 6)	V _{BE(on)}	-	0.74	1.0	V	I _C = 1A, V _{CE} = 10V
Transition Frequency	f _T	100	135	-	MHz	I _C = 50mA, V _{CE} = 10V, f = 100MHz
Collector Output Capacitance	C _{obo}	-	6	10	pF	V _{CB} = 10V, f = 1MHz
Turn-On Time	t _(on)	-	160	-	ns	V _{CC} = 50V, I _C = 500mA, I _{B1} = -I _{B2} = 50mA
Turn-Off Time	t _(off)	-	1500	-	ns	

Notes: 6. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle ≤ 2%

Typical Characteristics



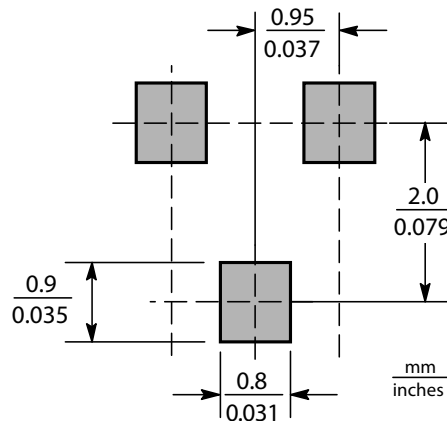
Package Outline Dimensions



Dim.	Millimeters		Inches		Dim.	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	-	1.12	-	0.044	e1	1.90 NOM		0.075 NOM	
A1	0.01	0.10	0.0004	0.004	E	2.10	2.64	0.083	0.104
b	0.30	0.50	0.012	0.020	E1	1.20	1.40	0.047	0.055
c	0.085	0.20	0.003	0.008	L	0.25	0.60	0.0098	0.0236
D	2.80	3.04	0.110	0.120	L1	0.45	0.62	0.018	0.024
e	0.95 NOM		0.037 NOM		-	-	-	-	-

Note: Controlling dimensions are in millimeters. Approximate dimensions are provided in inches

Suggested Pad Layout



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