

20V PNP SILICON LOW SATURATION TRANSISTOR IN SOT23

Features and Benefits

- $BV_{CEO} > -20V$
- $I_C = -1.5A$ Continuous Collector Current
- $I_{CM} = -6A$ Peak Pulse Current
- Low Saturation Voltage $V_{CE(sat)} < -200mV @ -1A$
- $R_{SAT} = 97m\Omega$ for a low equivalent on-resistance
- h_{FE} characterised up to -6A for high current gain hold-up
- 625mW power dissipation due to SuperSOT package
- Complementary part number FMMT618
- **Lead Free, RoHS Compliant (Note 1)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

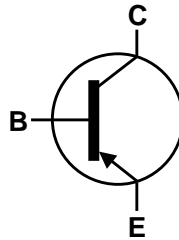
- Case: SOT-23
- UL Flammability Rating 94V-0
- Case material: molded Plastic.
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Matte Tin Finish annealed over Copper plated Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.008 grams (Approximate)

Applications

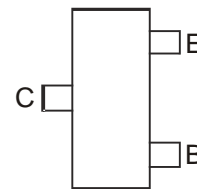
- MOSFET Gate Driving
- DC-DC Converters
- Charging circuit
- Power switches



Top View



Device Symbol



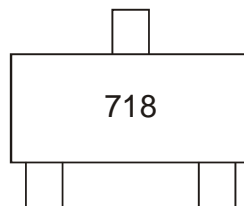
Top View Pin-Out

Ordering Information

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
FMMT718TA	718	7	8	3,000
FMMT718TC	718	13	8	10,000

Note: 1. No purposefully added lead.

Marking Information



718 = Product Type Marking Code

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

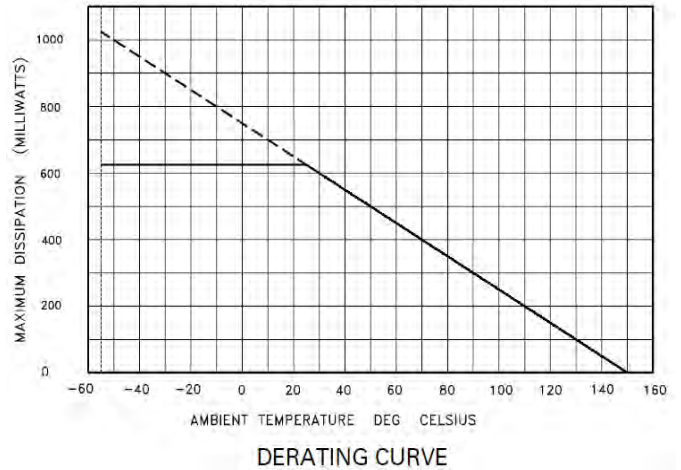
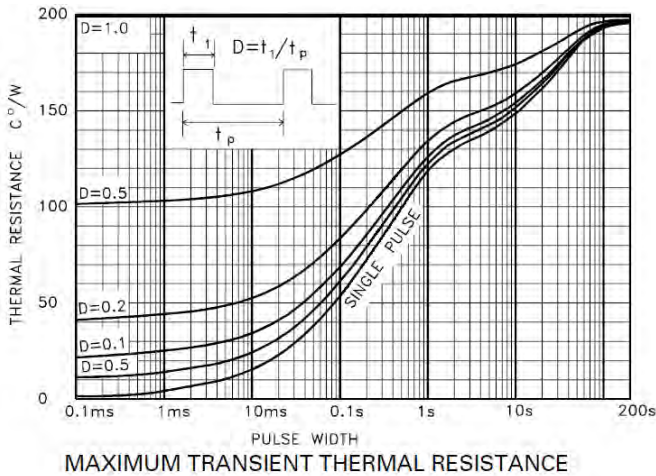
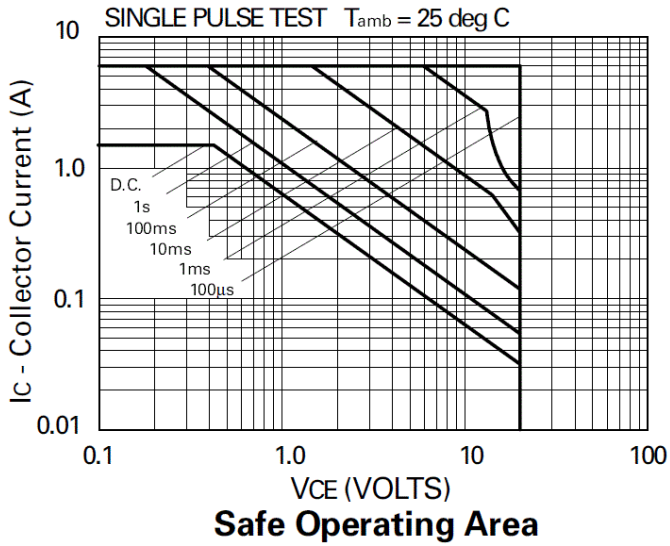
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CB0}	-20	V
Collector-Emitter Voltage	V_{CEO}	-20	V
Emitter-Base Voltage	V_{EBO}	-5	V
Continuous Collector Current	I_C	-1.5	A
Peak Pulse Current	I_{CM}	-6	A
Base Current	I_B	-500	mA

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

Characteristic	Symbol	Value	Unit
Power Dissipation	P_D	625	mW
Linear Rating Factor		5	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Lead	$R_{\theta JL}$	194	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

- Notes:
2. For a device surface mounted on 25mm X 25mm FR4 PCB with high coverage of single sided 1 oz copper, in still air conditions; the device is measured when operating in a steady-state condition.
 3. Thermal resistance from junction to solder-point (at the end of the collector lead).

Thermal Characteristics and Derating information



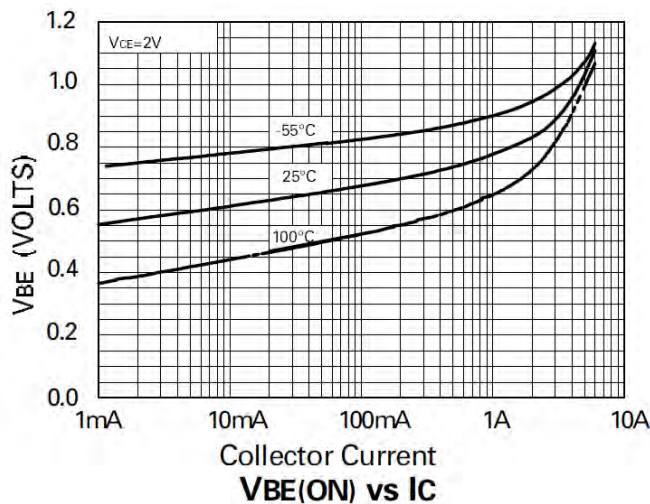
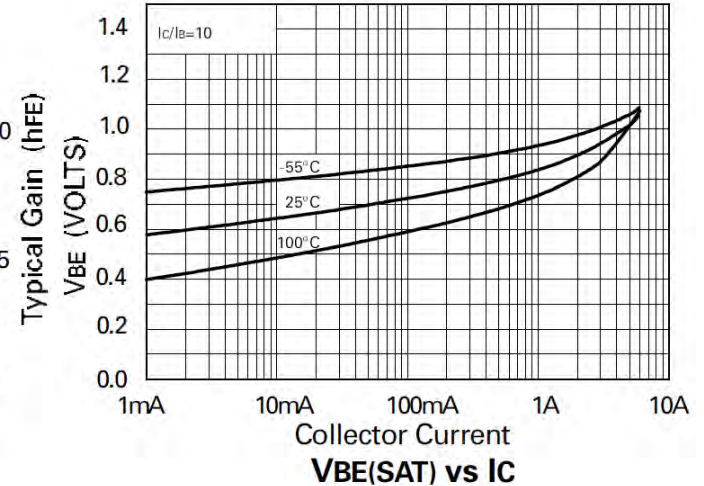
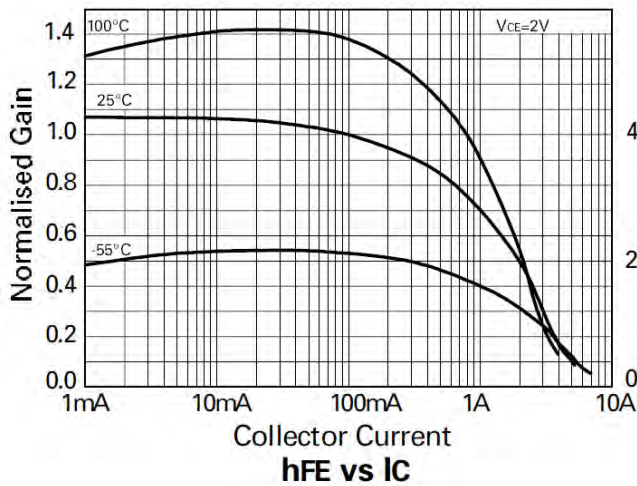
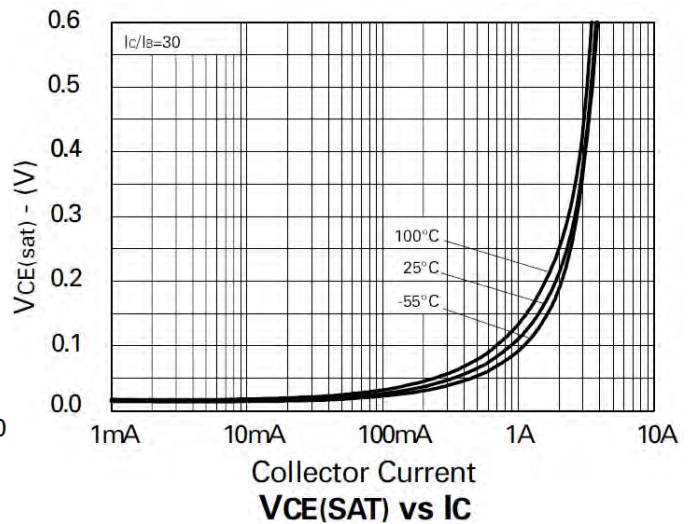
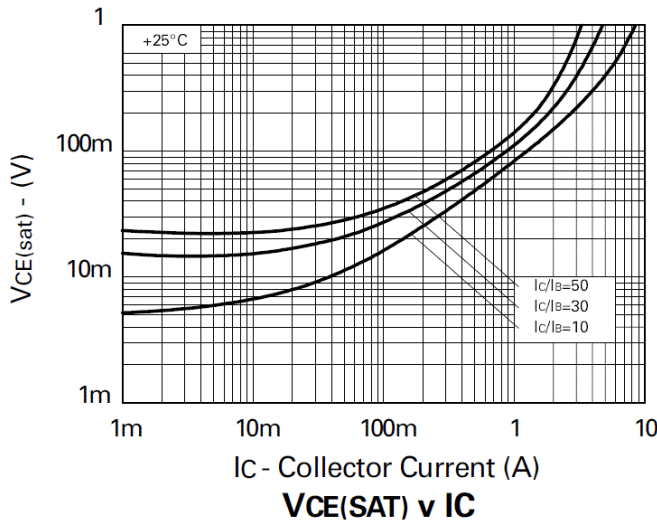
Device surface mounted on 25mm X 25mm FR4 PCB with high coverage of single sided 1 oz copper, in still air conditions; the device is measured when operating in a steady-state condition.

Electrical Characteristics @T_A = 25°C unless otherwise specified

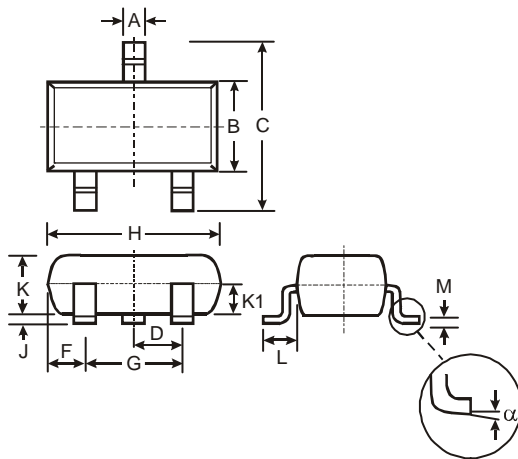
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CBO}	-20	-65		V	I _C = -100 μA
Collector-Emitter Breakdown Voltage (Note 4)	BV _{CEO}	-20	-55		V	I _C = -10 mA
Emitter-Base Breakdown Voltage	BV _{EBO}	-5	-8.8		V	I _E = -100 μA
Collector Cutoff Current	I _{CBO}			-100	nA	V _{CB} = -15V
Emitter Cutoff Current	I _{EBO}			-100	nA	V _{EB} = -4V
Collector Emitter Cutoff Current	I _{CES}			-100	nA	V _{CE} = -15V
Static Forward Current Transfer Ratio (Note 4)	h _{FE}	300 300 150 35 15	475 450 230 70 30			I _C = -10mA, V _{CE} = -2V I _C = -100mA, V _{CE} = -2V I _C = -2A, V _{CE} = -2V I _C = -4A, V _{CE} = -2V I _C = -6A, V _{CE} = -2V
Collector-Emitter Saturation Voltage (Note 4)	V _{CE(sat)}		-16 -130 -145	-40 -200 -220	mV mV mV	I _C = -0.1A, I _B = -10mA I _C = -1A, I _B = -20mA I _C = -1.5A, I _B = -50mA
Base-Emitter Turn-On Voltage(Note 4)	V _{BE(on)}		-0.81	-1.0	V	I _C = -2A, V _{CE} = -2V
Base-Emitter Saturation Voltage(Note 4)	V _{BE(sat)}		-0.87	-1.0	V	I _C = -1.5A, I _B = -50mA
Output Capacitance	C _{obo}		34	43	pF	V _{CB} = -10V, f = 1MHz
Transition Frequency	f _T	150	180		MHz	V _{CE} = -10V, I _C = -50mA, f = 100MHz
Turn-On Time	t _{on}		68		ns	V _{CC} = -10V, I _C = -1A
Turn-Off Time	t _{off}		270		ns	I _{B1} = I _{B2} = -20mA

Note: 4. Measured under pulsed conditions. Pulse width ≤ 300 μs. Duty cycle ≤ 2%

Typical Electrical Characteristics

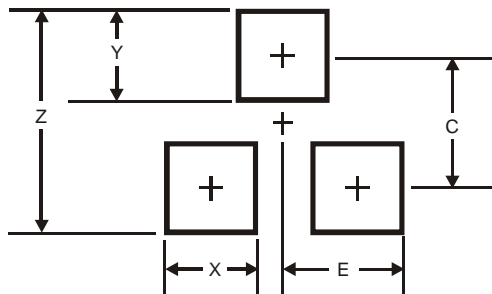


Package Outline Dimensions



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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