

**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**

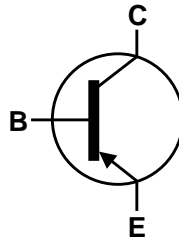
**Mechanical Data**

- 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**

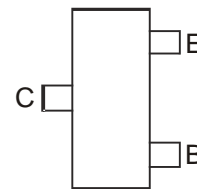
- MOSFET Gate Driving
- DC-DC Converters
- Charging circuit
- Power switches

SOT23



Top View

Device Symbol



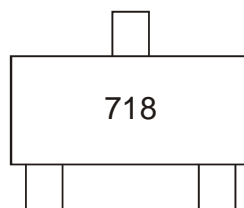
Top View Pin-Out

**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

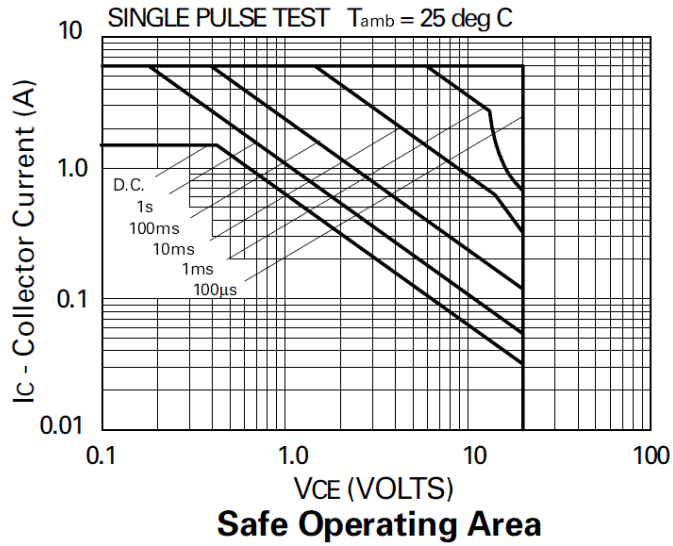
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	$V_{CB0}$	-20	V
Collector-Emitter Voltage	$V_{CEO}$	-20	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Continuous Collector Current	$I_C$	-1.5	A
Peak Pulse Current	$I_{CM}$	-6	A
Base Current	$I_B$	-500	mA

**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**



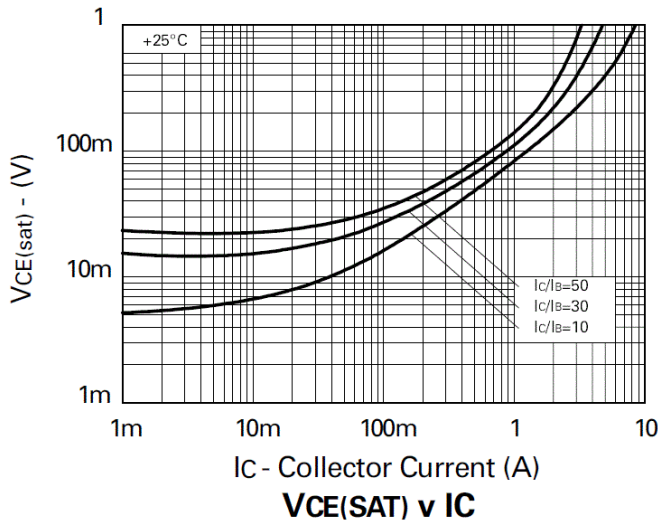
Device surface mounted on 25mm X 25mm FR4 PCB with high coverage of single sided 1 oz copper, in still air conditions; the device is measured when operating in a steady-state condition.

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

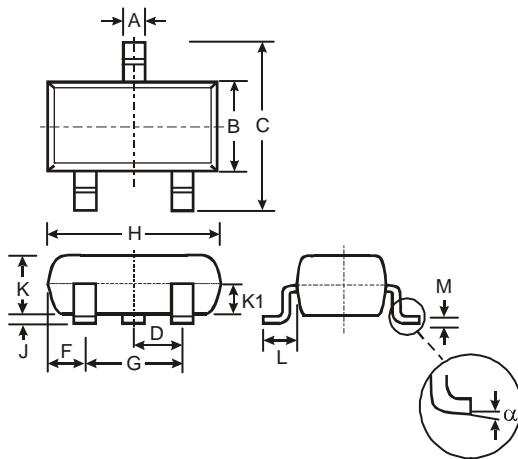
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	$BV_{CBO}$	-20	-65		V	$I_C = -100 \mu\text{A}$
Collector-Emitter Breakdown Voltage (Note 4)	$BV_{CEO}$	-20	-55		V	$I_C = -10 \text{ mA}$
Emitter-Base Breakdown Voltage	$BV_{EBO}$	-5	-8.8		V	$I_E = -100 \mu\text{A}$
Collector Cutoff Current	$I_{CBO}$			-100	nA	$V_{CB} = -15\text{V}$
Emitter Cutoff Current	$I_{EBO}$			-100	nA	$V_{EB} = -4\text{V}$
Collector Emitter Cutoff Current	$I_{CES}$			-100	nA	$V_{CE} = -15\text{V}$
Static Forward Current Transfer Ratio (Note 4)	$h_{FE}$	300 300 150 35 15	475 450 230 70 30			$I_C = -10\text{mA}, V_{CE} = -2\text{V}$ $I_C = -100\text{mA}, V_{CE} = -2\text{V}$ $I_C = -2\text{A}, V_{CE} = -2\text{V}$ $I_C = -4\text{A}, V_{CE} = -2\text{V}$ $I_C = -6\text{A}, V_{CE} = -2\text{V}$
Collector-Emitter Saturation Voltage (Note 4)	$V_{CE(sat)}$		-16 -130 -145	-40 -200 -220	mV mV mV	$I_C = -0.1\text{A}, I_B = -10\text{mA}$ $I_C = -1\text{A}, I_B = -20\text{mA}$ $I_C = -1.5\text{A}, I_B = -50\text{mA}$
Base-Emitter Turn-On Voltage (Note 4)	$V_{BE(on)}$		-0.81	-1.0	V	$I_C = -2\text{A}, V_{CE} = -2\text{V}$
Base-Emitter Saturation Voltage (Note 4)	$V_{BE(sat)}$		-0.87	-1.0	V	$I_C = -1.5\text{A}, I_B = -50\text{mA}$
Output Capacitance	$C_{obo}$		34	43	pF	$V_{CB} = -10\text{V}, f = 1\text{MHz}$
Transition Frequency	$f_T$	150	180		MHz	$V_{CE} = -10\text{V}, I_C = -50\text{mA}, f = 100\text{MHz}$
Turn-On Time	$t_{on}$		68		ns	$V_{CC} = -10\text{V}, I_C = -1\text{A}$
Turn-Off Time	$t_{off}$		270		ns	$I_{B1} = I_{B2} = -20\text{mA}$

Note: 4. Measured under pulsed conditions. Pulse width  $\leq 300 \mu\text{s}$ . Duty cycle  $\leq 2\%$

**Typical Electrical Characteristics**

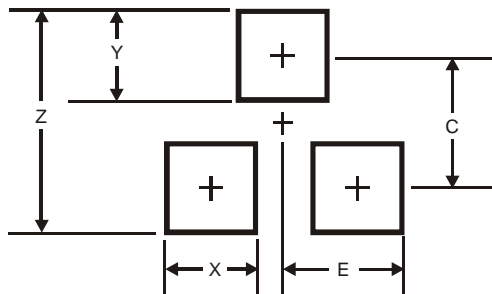


**Package Outline Dimensions**



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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