DESCRIPTION

The FMMT591 is available in SOT-23 package.

MECHANICAL DATA

- Case: SOT23
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208
- Weight 0.008 grams (Approximate)

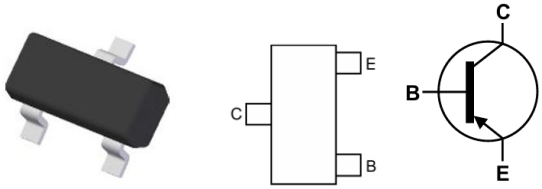
ORDERING INFORMATION

Package Type	Part Number
SOT-23	FMMT591
Note	SPQ:3,000pcs/Reel
AiT provides all RoHS products	

FEATURE

- I_C = -1A High Continuous Collector Current
- I_{CM} = -2A Peak Pulse Current
- $R_{CE\ (sat)}$=355mΩ for a Low Equivalent On-Resistance
- Complementary NPN type: FMMT491

PIN DESCRIPTION



SOT-23

Pin#	Symbol	Function
1	B	Base
2	E	Emitter
3	C	Collector

ABSOLUTE MAXIMUM RATINGS

V_{CBO}, Collector-Base Voltage	-80V
V_{CEO}, Collector-Emitter Voltage	-60V
V_{EBO}, Emitter-Base Voltage	-5V
I_{CM}, Peak Pulse Current	-2A
I_C, Continuous Collector Current	-1A
I_B, Base Current	-200mA
P_{TOT}, Power Dissipation at T_{amb} =25℃	500mW
T_J, Operating and Storage Temperature Range	-55℃~+150℃
T_{STG}, Operating and Storage Temperature Range	-55℃~+150℃

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICS

T_A = 25°C, unless otherwise specified.

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=-100μA, I_E=0	-80	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=-10mA, I_B=0*	-60	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=-100μA, I_C=0	-5	-	-	V
Collector Cut-Off Current	I_{CBO}	V_{CB}=-60V	-	-	-100	nA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=-4V, I_C=0	-	-	-100	nA
Collector- Emitter Cut-Off Current	I_{CES}	V_{CES}=-60V	-	-	-100	nA
Collector- Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-500mA, I_B=-50mA*	-	-	-0.3	V
		I_C=-1A, I_B=-100mA*	-	-	-0.6	V
Base- Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=-1A, I_B=-100mA*	-	-	-1.2	V
Base- Emitter Turn-on Voltage	$V_{BE(on)}$	I_C=-1A, V_{CE}=-5V*	-	-	-1.0	V
Static Forward Current Transfer Ratio	h_{FE}	I_C=-1mA, V_{CE}=-5V*	100	-	300	
		I_C=-500mA, V_{CE}=-5V*	100	-		
		I_C=-1A, V_{CE}=-5V*	80	-		
		I_C=-2A, V_{CE}=-5V*	15	-		
Transition Frequency	f_T	I_C=-50mA, V_{CE}=-10V f=100MHz	150	-	-	MHz
Output Capacitance	C_{obo}	V_{CB}=-10V, f=1MHz	-	-	10	pF

*Measured under pulsed conditions. Pulse width=300μs.Duty cycle≤2%

TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. $V_{CE\ (sat)}$ vs. I_C

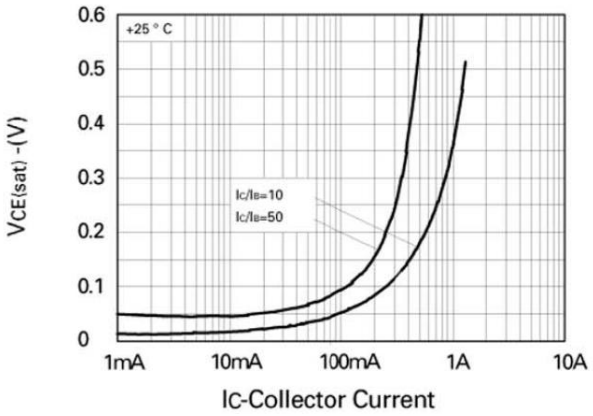


Fig 2. $V_{CE\ (sat)}$ vs. I_C

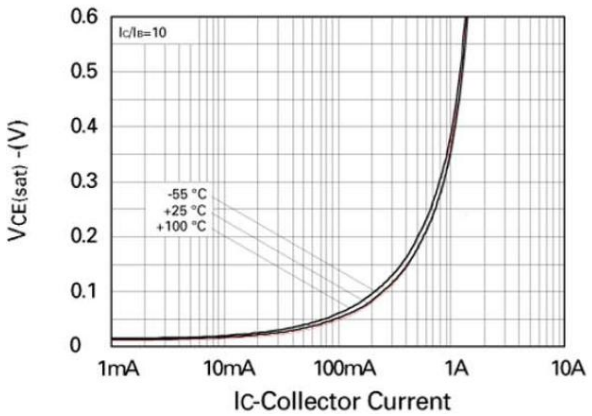


Fig3. h_{FE} vs. I_C.

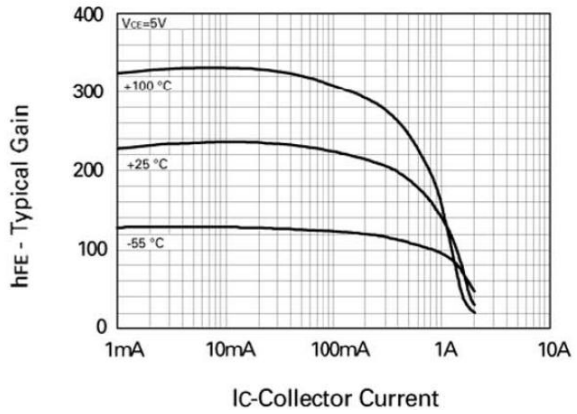


Fig4. $V_{BE\ (sat)}$ vs. I_C

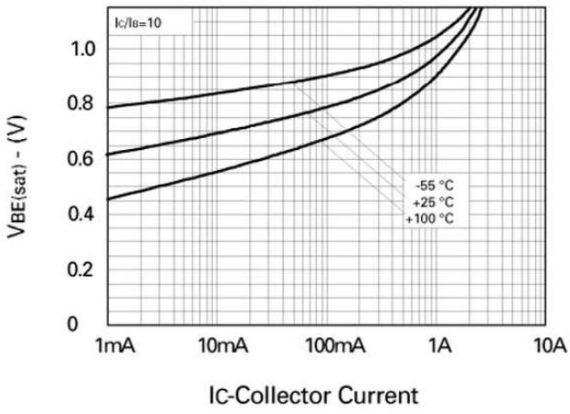


Fig5. $V_{BE\ (on)}$ vs. I_C

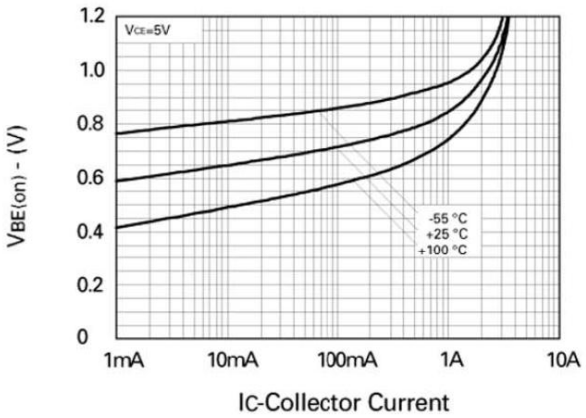
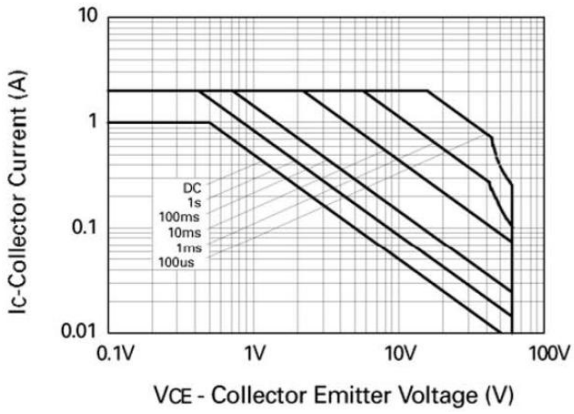
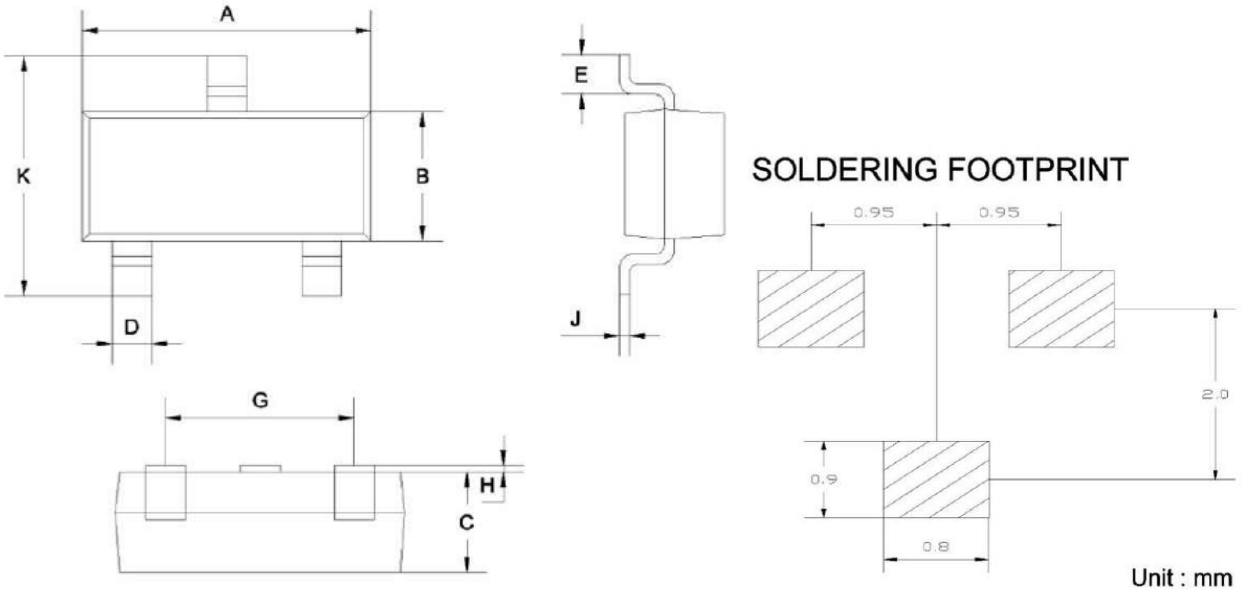


Fig6. Safe Operating Area



PACKAGE INFORMATION

Dimension in SOT-23 (Unit: mm)



Symbol	Min	Max
A	2.85	2.95
B	1.25	1.35
C	1.0 Typical	
D	0.37	0.43
E	0.35	0.48
G	1.85	1.95
H	0.02	0.1
J	0.1 Typical	
K	2.35	2.45

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