

SuperSOT

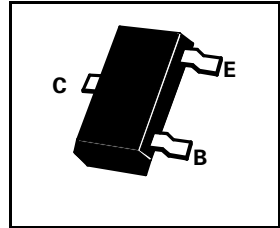
SOT23 NPN SILICON POWER (SWITCHING) TRANSISTORS

ISSUE 3 - NOVEMBER 1995

FMMT617 FMMT618
FMMT619 FMMT624
FMMT625

FEATURES

- * **625mW POWER DISSIPATION**
- * **I_C CONT 3A**
- * 12A Peak Pulse Current
- * Excellent H_{FE} Characteristics Up To 12A (pulsed)
- * Extremely Low Saturation Voltage E.g. 8mV Typ.
- * Extremely Low Equivalent On Resistance; **R_{CE(sat)}**



DEVICE TYPE	COMPLEMENT	PARTMARKING	R _{CE(sat)}
FMMT617	FMMT717	617	50mΩ at 3A
FMMT618	FMMT718	618	50mΩ at 2A
FMMT619	FMMT720	619	75mΩ at 2A
FMMT624	FMMT723	624	-
FMMT625	-	625	-

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	FMMT 617	FMMT 618	FMMT 619	FMMT 624	FMMT 625	UNIT
Collector-Base Voltage	V _{CBO}	15	20	50	125	150	V
Collector-Emitter Voltage	V _{CEO}	15	20	50	125	150	V
Emitter-Base Voltage	V _{EBO}	5	5	5	5	5	V
Peak Pulse Current**	I _{CM}	12	6	6	3	3	A
Continuous Collector Current	I_C	3	2.5	2	1	1	A
Base Current	I _B	500					mA
Power Dissipation at T_{amb}=25°C*	P_{tot}	625					mW
Operating and Storage Temperature Range	T _j ; T _{stg}	-55 to +150					°C

* Maximum power dissipation is calculated assuming that the device is mounted on a ceramic substrate measuring 15x15x0.6mm

**Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤ 2%
Spice parameter data is available upon request for these devices

FMMT618 FMMT619

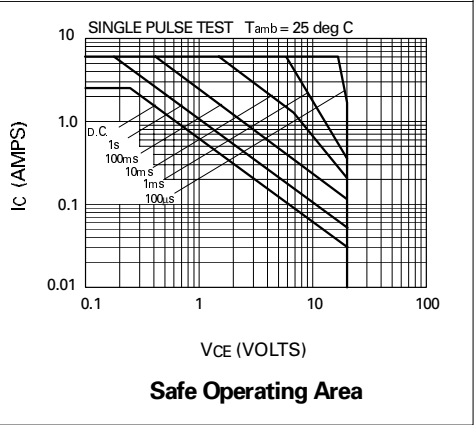
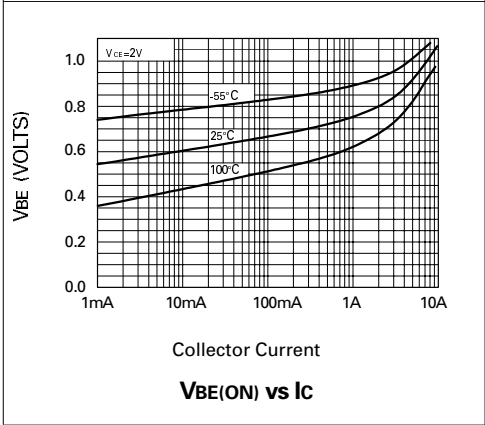
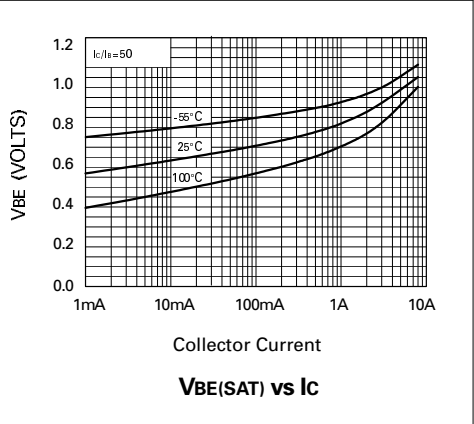
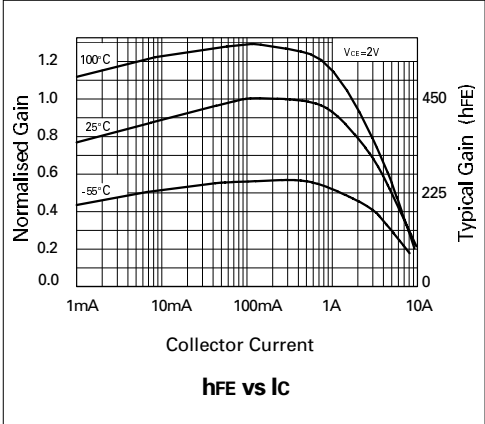
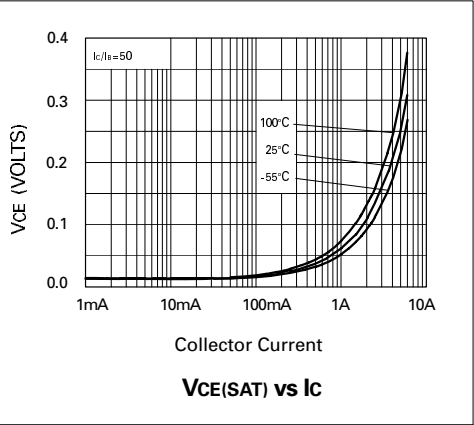
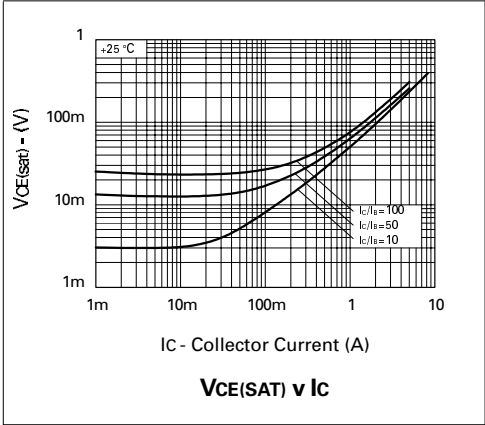
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ unless otherwise stated).

PARAMETER	SYMBOL	FMMT618			FMMT619			UNIT	CONDITIONS.
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	20	100		50	190		V	$I_C=100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	20	27		50	65		V	$I_C=10mA^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	8.3		5	8.3		V	$I_E=100\mu A$
Collector Cut-Off Current	I_{CBO}			100			100	nA nA	$V_{CB}=16V$ $V_{CB}=40V$
Emitter Cut-Off Current	I_{EBO}			100			100	nA	$V_{EB}=4V$
Collector Emitter Cut-Off Current	I_{CES}			100			100	nA nA	$V_{CES}=16V$ $V_{CES}=40V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		8 70 130	15 150 200		10 125 150	20 200 220	mV mV mV mV	$I_C=0.1A, I_B=10mA^*$ $I_C=1A, I_B=10mA^*$ $I_C=2A, I_B=50mA^*$ $I_C=2.5A, I_B=50mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.89	1.0		0.87	1.0	V V	$I_C=2A, I_B=50mA^*$ $I_C=2.5A, I_B=50mA^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		0.79	1.0		0.80	1.0	V V	$I_C=2A, V_{CE}=2V^*$ $I_C=2.5A, V_{CE}=2V^*$
Static Forward Current Transfer Ratio	h_{FE}	200 300	400 450		200 300 200 100	400 450 400 225 40			$I_C=10mA, V_{CE}=2V^*$ $I_C=200mA, V_{CE}=2V^*$ $I_C=1A, V_{CE}=2V^*$ $I_C=2A, V_{CE}=2V^*$ $I_C=6A, V_{CE}=2V^*$
Transition Frequency	f_T	100	140		100	165		MHz	$I_C=50mA, V_{CE}=10V$ $f=100MHz$
Output Capacitance	C_{obo}		23	30		12	20	pF	$V_{CB}=10V, f=1MHz$
Turn-On Time	$t_{(on)}$		170			170		ns	$V_{CC}=10V, I_C=1A$
Turn-Off Time	$t_{(off)}$		400			750		ns	$I_{B1}=-I_{B2}=10mA$

*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$

FM1T618

TYPICAL CHARACTERISTICS

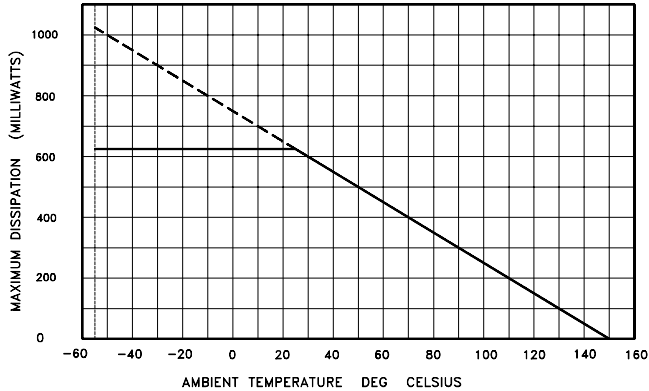


FMMT617 FMMT624
 FMMT618 FMMT625
 FMMT619

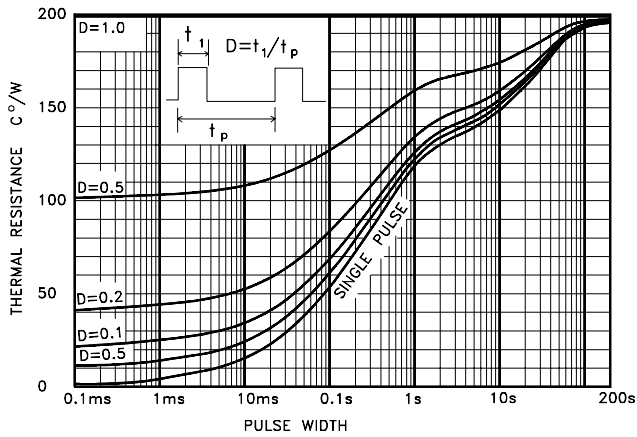
SuperSOT Series

FMMT717 FMMT722
 FMMT718 FMMT723
 FMMT720

THERMAL CHARACTERISTICS AND DERATING INFORMATION



DERATING CURVE



MAXIMUM TRANSIENT THERMAL RESISTANCE

* Reference above figures, Devices were mounted on a 15mmx15mm ceramic substrate



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