SOT23 NPN SILICON PLANAR SWITCHING TRANSISTORS

FMMT2222
FMMT2222A

ISSUE 3 – FEBRUARY 1996

FEATURES

* Fast switching

PARTMARKING DETAILS

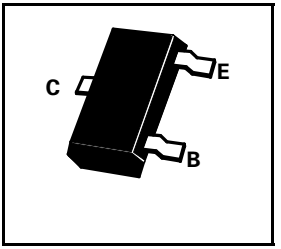
FMMT2222 – 1BZ FMMT2222A – 1P

FMMT2222R – 2P FMMT2222AR – 3P

COMPLEMENTARY TYPES

FMMT2222 – FMMT2907

FMMT2222A – FMMT2907A



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	FMMT2222	FMMT2222A	UNIT
Collector-Base Voltage	V_{CBO}	60	75	V
Collector-Emitter Voltage	V_{CEO}	30	40	V
Emitter-Base Voltage	V_{EBO}	5	6	V
Continuous Collector Current	I_C	600		mA
Power Dissipation at T_{amb}=25°C	P_{tot}	330		mW
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +150		°C

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

PARAMETER	SYMBOL	FMMT2222		FMMT2222A		UNIT	CONDITIONS.
		MIN.	MAX.	MIN.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	60		75		V	I_C=10μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	30		40		V	I_C=10mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5		6		V	I_E=10μA, I_C=0
Collector Cut-Off Current	I_{CBO}		10 10		 10 10	nA μA nA μA	V_{CB}=50V, I_E=0 V_{CB}=60V, I_E=0 V_{CB}=50V, I_E=0, T_{amb}=150°C V_{CB}=60V, I_E=0, T_{amb}=150°C
Emitter Cut-Off Current	I_{EBO}		10		10	nA	V_{EB}=3V, I_C=0
Collector-Emitter Cut-Off Current	I_{CEX}		10		10	nA	V_{CE}=60V, $V_{EB(off)}$=3V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.3 1.0		0.3 1.0	V V	I_C=150mA, I_B=15mA* I_C=500mA, I_B=50mA*
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	0.6	2.0 2.6	0.6	1.2 2.0	V V	I_C=150mA, I_B=15mA* I_C=500mA, I_B=50mA*
Static Forward Current Transfer Ratio	h_{FE}	35 50 75 35 100 50 30	 300 	35 50 75 35 100 50 40	 300 		I_C=0.1mA, V_{CE}=10V* I_C=1mA, V_{CE}=10V I_C=10mA, V_{CE}=10V* I_C=10mA, V_{CE}=10V, T_{amb}=-55°C I_C=150mA, V_{CE}=10V* I_C=150mA, V_{CE}=1V* I_C=500mA, V_{CE}=10V*

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

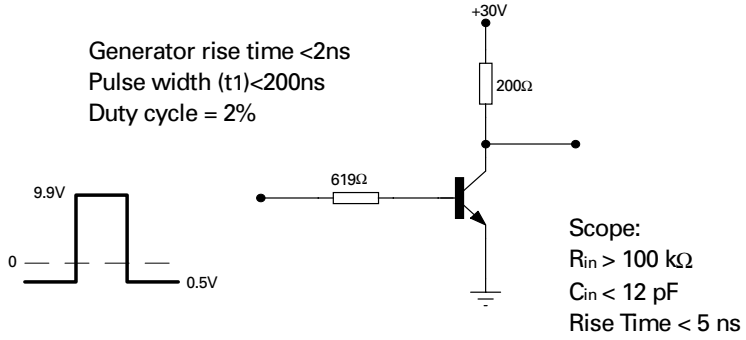
Spice parameter data is available upon request for this device

FMMT2222
FMMT2222A

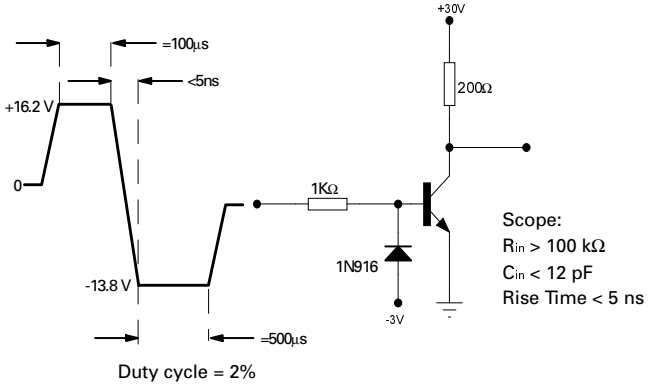
ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

PARAMETER	SYMBOL	FMMT2222		FMMT2222A		UNIT	CONDITIONS.
		MIN.	MAX.	MIN.	MAX.		
Transition Frequency	f_T	250		300		MHz	I_C=20mA, V_{CE}=20V f=100MHz
Output Capacitance	C_{obo}		8		8	pF	V_{CB}=10V, I_E=0, f=140KHz
Input Capacitance	C_{ibo}		30		25	pF	V_{EB}=0.5V, I_C=0 f=140KHz
Delay Time	t_d		10		10	ns	V_{CC}=30V, $V_{BE(off)}$=0.5V I_C=150mA, I_{B1}=15mA (See Delay Test Circuit)
Rise Time	t_r		25		25	ns	
Storage Time	t_s		225		225	ns	V_{CC}=30V, I_C=150mA I_{B1}= I_{B2}=15mA (See Storage Test Circuit)
Fall Time	t_f		60		60	ns	

DELAY AND RISE – TEST CIRCUIT



STORAGE TIME AND FALL TIME – TEST CIRCUIT



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