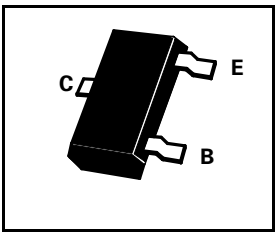
SOT23 PNP SILICON PLANAR SWITCHING TRANSISTORS

FMMT3905
FMMT3906

ISSUE 4 – MARCH 2000

PARTMARKING DETAILS - FMMT3905 - 2W
FMMT3906 - 2A

COMPLEMENTARY TYPES - FMMT3905 - FMMT3903
FMMT3906 - FMMT3904



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-40	V
CollectorEmitter Voltage	V_{CEO}	-40	V
Emitter-Base Voltage	V_{EBO}	-5	V
Continuous Collector Current	I_C	-200	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	FMMT3905		FMMT3906.		UNIT	CONDITIONS.
		MIN	MAX	MIN	MAX		
BreakdownVoltages	$V_{(BR)CBO}$	-40		-40		V	I_C=-10μA, I_E=0
	$V_{(BR)CEO}$	-40		-40		V	I_C=-1mA, I_B=0*
	$V_{(BR)EBO}$	-5		-5		V	I_E=-10μA, I_C=0
Cut-Off Currents	I_{CEX}		-50		-50	nA	V_{CE}=-30V, $V_{BE(off)}$=-3V
	I_{BEX}		-50		-50	nA	V_{CE}=-30V, $V_{EB(off)}$=-3V
Static Forward Current Transfer Ratio	h_{FE}	30 40 50 30 15	 150 	60 80 100 60 30	 300 		I_C=-0.1mA, V_{CE}=-1V* I_C=-1mA, V_{CE}=-1V* I_C=-10mA, V_{CE}=-1V* I_C=-50mA, V_{CE}=-1V* I_C=-100mA, V_{CE}=-1V*
Saturation Voltages	$V_{CE(sat)}$		-0.25 -0.4		0.25 0.4	V V	I_C=-10mA, I_B=-1mA* I_C=-50mA, I_B=-5mA*
	$V_{BE(sat)}$	-0.65	-0.85 -0.95	-0.65	-0.85 -0.95	V V	I_C=-10mA, I_B=-1mA* I_C=-50mA, I_B=-5mA*
Transition Frequency	f_T	200		250		MHz	I_C=-10mA, V_{CE}=-20V f=100MHz
Output Capacitance	C_{obo}		4.5		4.5	pF	V_{CB}=-5V, I_E=0, f=100KHz
Input Capacitance	C_{ibo}		10		10	pF	V_{BE}=0.5V, I_C=0, f=100KHz
Noise Figure	N		5		4	dB	I_C=-200mA, V_{CE}=-5V Rg=2kΩ, f=30Hz to 15kHz at -3dB points

*Measured under pulsed conditions. Pulse width=200μs. Duty cycle =1%

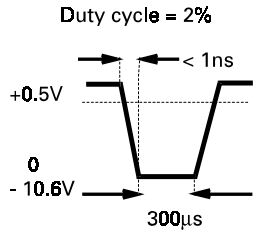
FMMT3905
FMMT3906

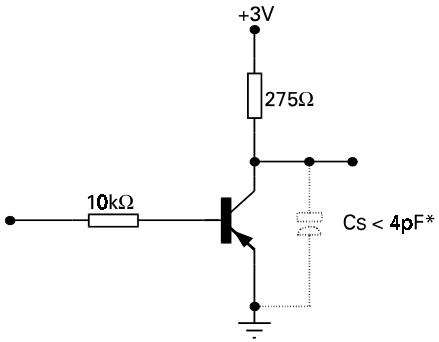
SWITCHING CHARACTERISTICS (at Tamb=25 °C unless otherwise stated)

PARAMETER	SYMBOL	FMMT3905		FMMT3906		UNIT	CONDITIONS
		MIN	MAX	MIN	MAX		
Delay Time	t_d		35		35	ns	V_{CC}=-3V, $V_{BE(off)}$=-0.5V I_C=-10mA, I_{B1}=-1mA (See Fig.1)
Rise Time	t_r		35		35	ns	
Storage Time	t_s		200		225	ns	V_{CC}=-3V, I_C=-10mA I_{B1}=-I_{B2}=-1mA (See Fig.2)
Fall Time	t_f		60		75	ns	

Delay and Rise Time

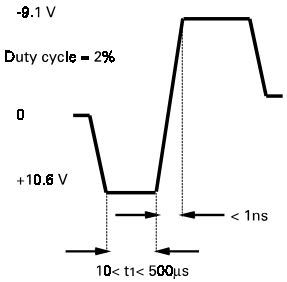
Equivalent Test Circuit

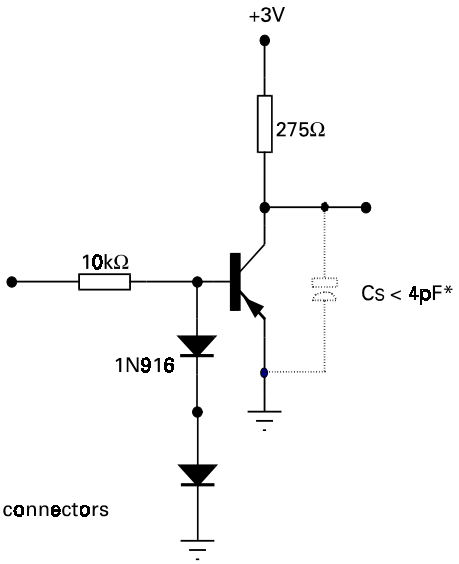




Storage and Fall Time

Equivalent Test Circuit





* Total shunt capacitance of test jig and connectors