

SOT23 NPN SILICON PLANAR HIGH SPEED SWITCHING TRANSISTORS

FMMT2369 FMMT2369A

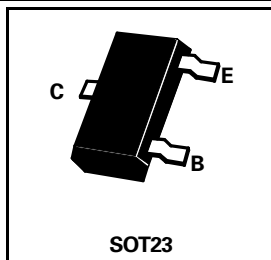
ISSUE 3 – AUGUST 1995

APPLICATIONS

These devices are suitable for use in high speed, low current switching applications

PARTMARKING DETAILS

FMMT2369 - 1J
FMMT2369R - 9R
FMMTA2369A - P5
FMMTA2369AR - 9A



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CES}	40	V
Collector-Emitter Voltage	V_{CEO}	15	V
Emitter-Base Voltage	V_{EBO}	4.5	V
Continuous Collector Current	I_C	200	mA
Power Dissipation at $T_{amb}=25^{\circ}C$	P_{tot}	330	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^{\circ}C$

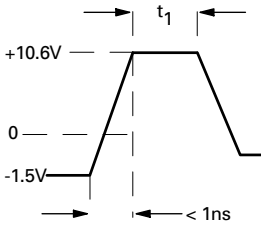
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ unless otherwise stated).

PARAMETER	SYMBOL	FMMT2369		FMMT2369A		UNIT	CONDITIONS.
		MIN.	MAX.	MIN.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	40		40		V	$I_C=10\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	15		15		V	$I_C=10mA, I_B=0^*$
	$V_{(BR)CES}$	40		40		V	$I_C=10\mu A, V_{BE}=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	4.5		4.5		V	$I_E=10\mu A, I_C=0$
Collector Cut-Off Current	I_{CBO}		400		25	nA	$V_{CB}=20V, I_E=0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.25		0.20	V	$I_C=10mA, I_B=1mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	0.7	0.85	0.7	0.85	V	$I_C=10mA, I_B=1mA^*$
Static Forward Current Transfer Ratio	h_{FE}	40 20 20	120	40 20	120		$I_C=10mA, V_{CE}=1V^*$ $I_C=10mA, V_{CE}=1V, T_{amb}=-55^{\circ}C^*$ $I_C=100mA, V_{CE}=1V^*$ $I_C=100mA, V_{CE}=2V^*$
Output Capacitance	C_{obo}		4		4	pF	$V_{CB}=5V, I_E=0, f=140KHz$
Turn-on Time	t_{on}		12		12	ns	$V_{CC}=3V, V_{BE(off)}=1.5V, I_C=10mA, I_{B1}=3mA$ (See t_{ON} circuit)
Turn-off Time	t_{off}		18		18	ns	$V_{CC}=3V, I_C=10mA, I_{B1}=3mA, I_{B2}=1.5mA$ (See t_{OFF} circuit)
Storage Time	t_s		13		13	ns	$I_C=I_{B1}=I_{B2}=10mA$ (See Storage test circuit)

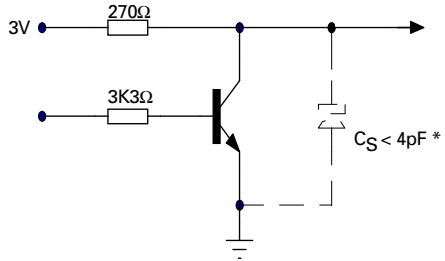
*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$
Spice parameter data is available upon request for this device

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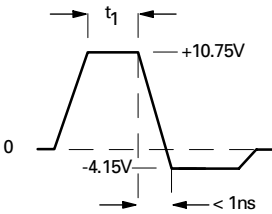
t_{ON} CIRCUIT



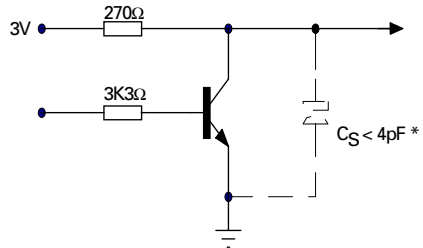
Pulse width (t₁)=300ns
Duty cycle = 2%



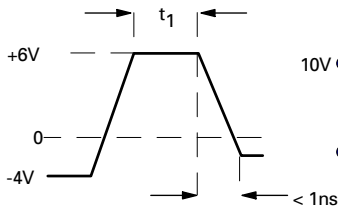
t_{OFF} CIRCUIT



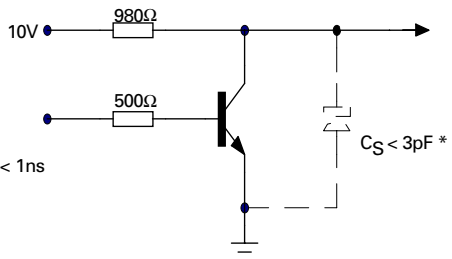
Pulse width (t₁)=300ns
Duty cycle = 2%



STORAGE TEST CIRCUIT



Pulse width (t₁)=300ns
Duty cycle = 2%



* Total shunt capacitance of test jig and connectors