

# SOT323 NPN SILICON PLANAR SWITCHING TRANSISTOR

## ZUMT2222A

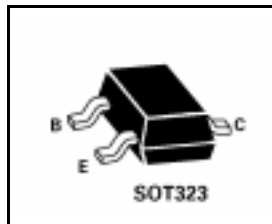
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### FEATURES

\* Fast switching

PARTMARKING DETAIL – T16

COMPLEMENTARY TYPE – ZUMT2907A



### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	75	V
Collector-Emitter Voltage	$V_{CEO}$	40	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Continuous Collector Current	$I_C$	600	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	MIN.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	75		V	$I_C=10\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40		V	$I_C=10mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6		V	$I_E=10\mu A, I_C=0$
Collector Cut-Off Current	$I_{CBO}$		10 10	nA $\mu A$	$V_{CB}=60V, I_E=0$ $V_{CB}=60V, I_E=0, T_{amb}=150^{\circ}C$
Emitter Cut-Off Current	$I_{EBO}$		10	nA	$V_{EB}=3V, I_C=0$
Collector-Emitter Cut-Off Current	$I_{CEX}$		10	nA	$V_{CE}=60V, V_{EB(off)}=3V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		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	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 40	300		$I_C=0.1mA, V_{CE}=10V^*$ $I_C=1mA, V_{CE}=10V$ $I_C=10mA, V_{CE}=10V^*$ $I_C=10mA, V_{CE}=10V, T_{amb}=-55^{\circ}C$ $I_C=150mA, V_{CE}=10V^*$ $I_C=150mA, V_{CE}=1V^*$ $I_C=500mA, V_{CE}=10V^*$

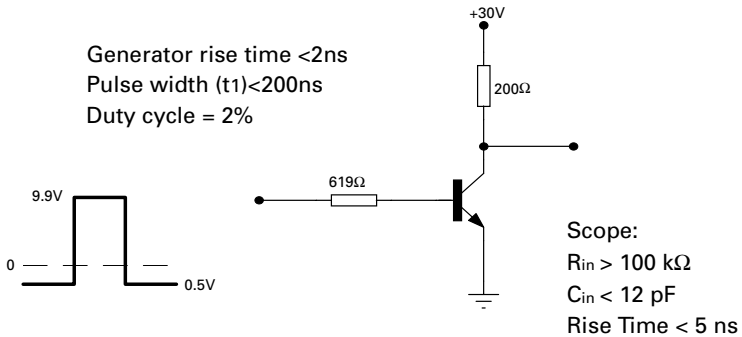
\*Measured under pulsed conditions. Pulse width=300 $\mu s$ . Duty cycle  $\leq 2\%$   
Spice parameter data is available upon request for this device

# ZUMT2222A

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

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

### DELAY AND RISE – TEST CIRCUIT



### STORAGE TIME AND FALL TIME – TEST CIRCUIT

