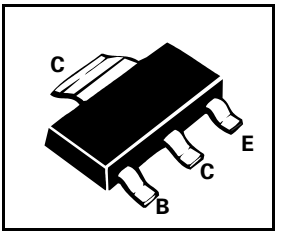
SOT223 NPN SILICON PLANAR SWITCHING TRANSISTOR

FZT2222A

ISSUE 3 - OCTOBER 1995

FEATURES

* 40 Volt V_{CEO}
* Fast switching



COMPLEMENTARY TYPE - FZT2907A

PARTMARKING DETAIL - FZT2222A

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}	5	V
Continuous Collector Current	I_C	600	mA
Power Dissipation at T_{amb}=25°C	P_{tot}	2	W
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	VALUE		UNIT	CONDITIONS.
		MIN.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	75		V	I_C=10μA, 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=10μA, I_C=0
Collector Cut-Off Current	I_{CBO}		10 10	nA μA	V_{CB}=50V, I_E=0 V_{CB}=50V, I_E=0, T_{amb}=150°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°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%

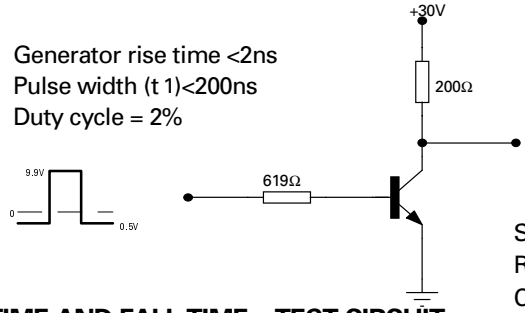
Spice parameter data is available upon request for this device

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

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

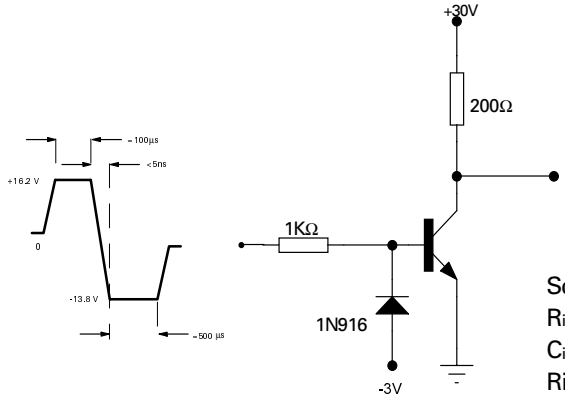
DELAY AND RISE – TEST CIRCUIT

Generator rise time <2ns
Pulse width (t 1)<200ns
Duty cycle = 2%



Scope:
R_{in} > 100 kΩ
C_{in} < 12 pF
Rise Time < 5 ns

STORAGE TIME AND FALL TIME – TEST CIRCUIT



Scope:
R_{in} > 100 kΩ
C_{in} < 12 pF
Rise Time < 5 ns

Duty cycle = 2%