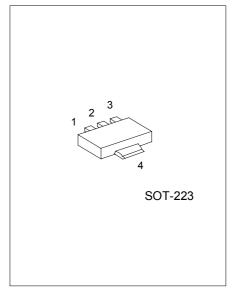
UTC PZT2222A NPN EPITAXIAL SILICON TRANSISTOR

NPN GENERAL PURPOSE **AMPLIFIER**

FEATURES

*This device is for use as a medium power amplifier and switch requiring collector currents up to 500mA. Sourced from Process 19.



1:EMITTER 2,4:COLLECTOR 3:BASE

ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATING	UNIT
Collector-base voltage	Vсво	75	V
Collector-emitter voltage	VCEO	40	V
Emitter-base voltage	VEBO	6	V
Collector current	lc	1	Α
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55 ~ +150	°C

Note: These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

LLEOTITIOAL OTTAINAOTEINIOTIOO (Ta-25 C, utiless ottletwise specified)									
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT			
OFF CHARACTERISTICS									
Collector-base breakdown voltage	V(BR)CBO	Ic=10μA, IE=0	75			V			
Collector-emitter breakdown voltage	V(BR)CEO	Ic=10mA, IB=0	40			V			
Emitter-base breakdown voltage	V(BR)EBO	IE=10μA, Ic=0	6			V			
Collector cutoff current	ICEX	VCE=60V,VEB(OFF)=3.0V			10	nA			
Collector cutoff current	Ісво	Vcb=60V,IE=0			0.01	μΑ			
		Vcb=60V,IE=0, Ta=150°C			10	μΑ			
Emitter cutoff current	lево	VEB=3.0V,IC=0			10	nA			
Base cutoff current	lbl.	VCE=60V, VEB(OFF)=3.0V			20	nA			

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NPN EPITAXIAL SILICON TRANSISTOR UTC PZT2222A

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
ON CHARACTERISTICS						
DC current gain	hFE	Ic=0.1mA, VcE=10V	35			
		Ic=1.0mA, VcE=10V	50			
		Ic=10mA, VcE=10V	75			
		Ic=10mA, VcE=10V, Ta=-55°C	35			
		Ic=150mA, VcE=10V*	100		300	
		Ic=150mA, VcE=1.0V*	50			
		Ic=500mA, VcE=10V*	40			
Collector-emitter saturation voltage*	Vce(sat)	Ic=150mA, IB=15mA			0.3	V
		Ic=500mA, IB=50mA			1.0	V
Base-emitter saturation voltage*	VBE(sat)	Ic=150mA, IB=15mA	0.6		1.2	V
		Ic=500mA, IB=50mA			2.0	V
SMALL SIGNAL CHARACTERISTICS	3					
Current gain-Bandwidth product	f⊤	Ic=20mA, VcE=20V, f=100MHz	300			MHz
Output capacitance	Cobo	VcB=10V, IE=0, f=100kHz			8.0	pF
Input capacitance	Cibo	VEB=0.5V, IC=0, f=100kHz			25	pF
Collector base time constant	rb'Cc	IC=20mA, VCB=20V, f=31.8MHz			150	pS
Noise figure	NF	IC=100 μ A, VCE=10V, Rs=1.0k Ω ,			4.0	dB
		f=1.0kHz				
Real part of common-emitter high	Re(hje)	IC=20mA, VCB=20V, f=300MHz			60	Ω
frequency input impedance						
SWITCHING CHARACTERISTICS				-	-	
Delay time	td	Vcc=30V, VBE(OFF)=0.5V,			10	ns
Rise time	tr	IC=150mA, IB1=15mA			25	ns
Storage time	ts	Vcc=30V, Ic=150mA,			225	ns
Fall time	tf	IB1= IB2=15mA			60	ns
THERMAL CHARACTERISTICS (TA	=25°C, unless	otherwise noted)		•	•	
Total Device Dissipation	PD	·			1000	mW
Derate above 25°C					8.0	mW/°C
Thermal resistance, junction to Ambient	RθJA				125	°C/W

^{*}Pulse test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2.0%

TEST CIRCUITS

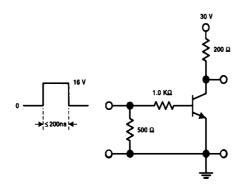


FIG.1 Saturated Turn-On Switching Time

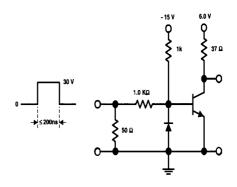
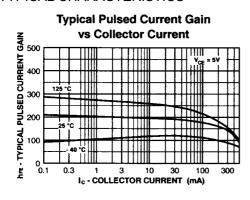
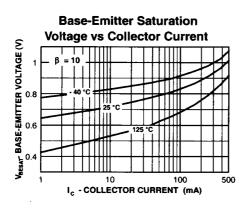
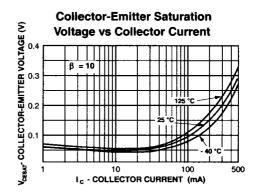


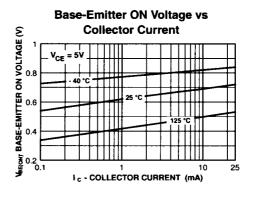
FIG.2 Saturated Turn-Off Switching Time

TYPICAL CHARACTERISTICS





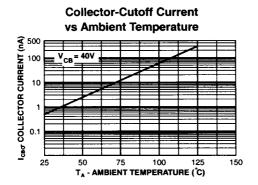


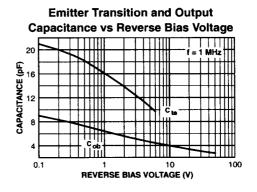


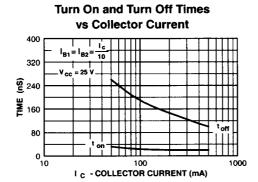
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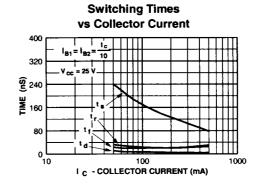
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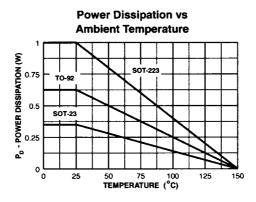
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