

FEATURES

- **SMALL PACKAGE OUTLINE:**
SOT-363 package measures just 2.0 mm x 1.25 mm
- **LOW HEIGHT PROFILE:**
Just 0.60 mm high
- **HIGH COLLECTOR CURRENT:**
Ic MAX = 65 mA

DESCRIPTION

The UPA822TF contains two NE681 NPN high frequency silicon bipolar chips. NEC's new low profile TF package is ideal for all portable wireless applications where reducing component height is a prime consideration. Each transistor chip is independently mounted and easily configured for oscillator/buffer amplifier and other applications.

ABSOLUTE MAXIMUM RATINGS¹ (T_A = 25°C)

SYMBOLS	PARAMETERS	UNITS	RATINGS
V _{CB0}	Collector to Base Voltage	V	20
V _{CE0}	Collector to Emitter Voltage	V	10
V _{EB0}	Emitter to Base Voltage	V	1.5
I _C	Collector Current	mA	65
PT	Total Power Dissipation 1 Die 2 Die	mW mW	110 200
T _J	Junction Temperature	°C	150
T _{STG}	Storage Temperature	°C	-65 to +150

Note: 1. Operation in excess of any one of these parameters may result in permanent damage.

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

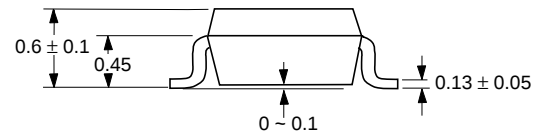
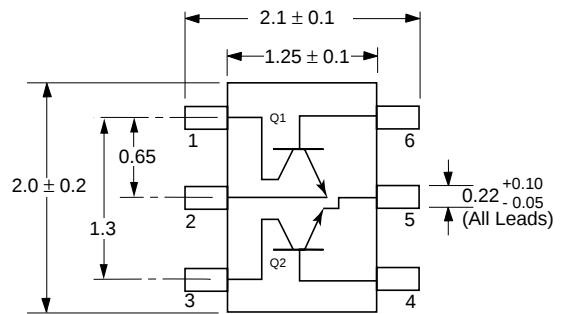
PART NUMBER PACKAGE OUTLINE			UPA822TF TS06		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
I _{CBO}	Collector Cutoff Current at V _{CB} = 10 V, I _E = 0	μA			0.8
I _{EB0}	Emitter Cutoff Current at V _{EB} = 1 V, I _C = 0	μA			0.8
h _{FE}	Forward Current Gain ¹ at V _{CE} = 3 V, I _C = 7 mA		70	100	240
f _T	Gain Bandwidth at V _{CE} = 3 V, I _C = 7 mA, f = 1 GHz	GHz	4.5	7.0	
C _{re}	Feedback Capacitance ² at V _{CB} = 3 V, I _E = 0, f = 1 MHz	pF			0.9
S _{21E} ²	Insertion Power Gain at V _{CE} = 3 V, I _C = 7 mA, f = 1 GHz	dB	10	12	
NF	Noise Figure at V _{CE} = 3 V, I _C = 7 mA, f = 1 GHz	dB		1.4	1.7
h _{FE1} /h _{FE2}	h _{FE} Ratio: h _{FE1} = Smaller Value of Q ₁ , or Q ₂ h _{FE2} = Larger Value of Q ₁ or Q ₂		0.85		

Notes: 1. Pulsed measurement, pulse width ≤ 350 μs, duty cycle ≤ 2 %.

2. The emitter terminal should be connected to the ground terminal of the 3 terminal capacitance bridge.
For Tape and Reel version use part number UPA822TF-T1, 3K per reel.

OUTLINE DIMENSIONS (Units in mm)

PACKAGE OUTLINE TS06
(Top View)



PIN CONNECTIONS

1. Collector (Q1)
2. Emitter (Q1)
3. Collector (Q2)
4. Base (Q2)
5. Emitter (Q2)
6. Base (Q1)

Note: Pin 1 is the lower left most pin as the package lettering is oriented and read left to right.