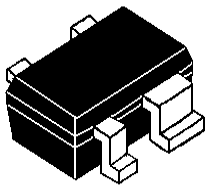
START405

NPN Silicon RF Transistor

TARGET DATA

- LOW NOISE FIGURE: NFmin = 1.15dB @ 1.8GHz, 2mA, 2V
- COMPRESSION P1dB = 5dBm @ 1.8GHz, 5mA, 2V
- TRANSITION FREQUENCY 42GHz
- LOW CURRENT CONSUMPTION
- ULTRA MINIATURE SOT343 PACKAGE



SOT343 (SC70)

ORDER CODE	BRANDING
START405	405

DESCRIPTION

The START405 is a member of the START family that provide the state of the art of RF silicon process to the market. Manufacturated in the third generation of ST proprietary bipolar process, it offers the best mix of gain and NF for given breakdown voltage(BVceo).
It offers performance level only archived with GaAs products before.

APPLICATIONS

- LNA FOR GSM/DCS, DECT, PCS, PCN, CDMA, W-CDMA
- GENERAL PURPOSE 500MHz-5GHz

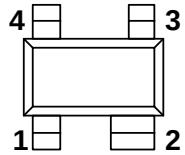
ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{ceo}	Collector emitter voltage	4.5	V
V_{cbo}	Collector base voltage	15	V
V_{ebo}	Emitter base voltage	1.5	V
I_c	Collector current	10	mA
I_b	Base current	1	mA
P_{tot}	Total dissipation, T_s = TBD	45	mW
T_{stg}	Storage temperature	-65 to 150	^oC
T_j	Max. operating junction temperature	150	^oC

ABSOLUTE MAXIMUM RATINGS

R_{thjs}	Thermal Resistance Junction soldering point	MAX	≤ TBD	$^oC/W$

PINOUT



Top view

SOT343

PIN CONNECTION

Pin No.	Description
1	BASE
3	COLLECTOR
2,4	EMITTER

ELECTRICAL CHARACTERISTICS (T_j=25 ^oC,unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{cbo}	Collector cutoff current	Vcb = 3V, Ie = 0A			150	nA
I_{ebo}	Emitter-base cutoff current	Veb = 1.5V, Ic = 0A			15	µA
Hfe	DC current gain	Ic = 5mA, Vce = 4V	50	90		
NFmin	Minimim noise figure	Ic = 2mA, Vce = 2V, f = 1.8GHz		1.15		dB
Ga	NFmin associated gain	Ic = 2mA, Vce = 2V, f = 1.8GHz		19		dB
$\|S21\|^2$	Insertion power gain	Ic = 5mA, Vce = 2V, f = 1.8GHz		17		dB
Gms (1)	Maximum stable gain	Ic = 5mA, Vce = 2V, f = 1.8GHz		22		dB
P_{-1dB}	1dB compression point	Ic = 5mA,Vce = 2V, f = 1.8GHz		5		dBm
OIP3	Ouput third order intercept point	Ic = 5mA,Vce = 2V, f = 1.8GHz		15		dBm

Note(1): Gms = | S_{21} / S_{12} |

PACKAGE DIMENSIONS SOT343 (SC-70 4 leads)